RESEARCH PAPER

Fantastic Reality and Playfulness as a Means for Adaptive Emotion Regulation

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Abstract

This study explores the interplay between Fantastic Reality Ability (FRA), assessed using the FRAME scale, and playfulness, measured with the OLIW-S, in relation to cognitive emotion regulation strategies among 298 Israeli adults. Participants completed self-report measures evaluating FRA, playfulness, and emotion regulation processes. Results revealed robust positive associations between FRA and various facets of playfulness, and specific connections to adaptive emotion regulation. Particularly, higher levels of FRA coping and lighthearted playfulness emerged as significant predictors of adaptive emotion regulation, while maladaptive regulation showed associations with lower FRA control and distinct playfulness facets. These findings highlight the potential of cultivating imaginative capabilities and embracing playful approaches to bolster emotional resilience and adaptive coping strategies during challenging circumstances and crises. Practical implications for interventions aimed at enhancing psychological well-being are discussed, emphasizing the integration of FRA and playfulness in developing effective coping strategies.

Keywords Fantastic Reality Ability · OLIW Playfulness · Emotion Regulation · Adaptive Coping · Resilience

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1 Introduction

Utilizing imagination and adult playfulness as stress-coping mechanisms has been recognized as meaningful for emotion regulation, building psychological resources, and resiliency (e.g., Clifford et al., 2022; Rubinstein et al., 2023a, b). Emotion regulation refers to a person's ability to manage their emotions in a given situation. This involves processes that can change the intensity, frequency, and duration of their current emotional state (Vanderlind et al., 2020). While these abilities share theoretical commonalities, they also make unique contributions (Rubinstein & Lahad, 2023), suggesting that both imagination and playfulness might have a complementary role in explaining responses to diverse circumstances, for stress management, or during emotion regulation.

An individual's capacity for imagination contributes to their emotion regulation in different ways. Some imaginative capacities can be beneficial for fostering prosocial behaviors (Bauer et al., 2021), producing new emotional resources to resolve conflicts (Bonilla et al., 2020), or may be linked to developing emotion regulation skills in early childhood (Thibodeau-Nielsen et al., 2021) and fostering and promoting resiliency in adults (Rubinstein & Lahad, 2023). Similarly, playfulness relates to emotion regulation in different ways. This trait can help in perceiving or (re)framing everyday situations as stimulating, interesting, and/or entertaining; it can help students to develop creative ideas and encourage them to integrate different learning tactics (Heljakka, 2023); it can also further help reduce feelings of boredom and loneliness (McCoy et al., 2023) and has been associated with higher emotional intelligence (Hart & Holmes, 2022). Therefore, this study aims to explore how imagination and playfulness interact as adaptive emotion regulation strategies, with the goal of uncovering their potential for enhancing emotional resilience and informing the development of targeted interventions.

Despite recent studies highlighting the importance of imagination and playfulness as adaptive coping strategies, their associations with emotion regulation processes remain unclear)Mellenthin, 2021; Wheeler & Leyman, 2023). There is a need for more rigorous quantitative research of play-related processes and health outcomes (Shen & Masek, 2024). The present study aimed to delve into the intricate relationships between fantastic reality and playfulness, examining both their overlap and the simultaneous importance of both abilities for emotion regulation processes. By exploring this interplay, we sought to deepen our understanding of these constructs, their potential for adaptive emotion regulation processes, and their potential practical applications.

1.1 Fantastic Reality

Fantastic reality (FR) serves as an intermediate realm between reality and imagination. A world of imagination has no boundaries, allowing individuals to explore endless possibilities and reconstruct more adaptive realities (Lahad, 2000). Within this realm, individuals can freely engage in exploration and playfulness and explore time, space, and the role of their desires. FR provides an outlet for individuals to access parallel imagination and reality, where they can seek novel insights that might

otherwise be challenging to attain in the 'real world.' Additionally, FR offers relief and catharsis by serving as an escape from everyday life stressors and constraints. Through this ability, individuals can inhabit multiple flexible realities simultaneously and construct their own realities governed by unique rules. Imagine a person burdened by the stress of an important meeting with their boss; within that person's imagination, they can explore a multitude of scenarios for the conversation, engage in role-play to gain insights into the boss's perspective, or generate creative ideas to advance objectives from that meeting. This freedom from the confines of reality empowers individuals to explore novel possibilities and devise solutions for their real-life challenges (Rubinstein & Lahad, 2023).

Fantastic reality ability (FRA) is defined as our capacity to utilize imagination in response to stress, uncertainty, or trauma (Rubinstein et al., 2021, 2023a, b). FRA encompasses four distinct yet interconnected factors. The first factor, *control*, relates to the active shaping and regulation of one's imaginative content. Control involves the intentional initiation, manipulation, and termination of imaginative processes. The second factor, *transcendence*, entails the ability to detach from the real world and immerse oneself deeply within the imaginative realm. The third factor, *playfulness*, involves a creative, uninhibited, and spontaneous approach to imagination, accompanied by an inclination towards openness and sociability. The fourth factor, *imaginal coping*, pertains to the utilization of imaginative processes as a means of problem-solving and emotion regulation. Coping encompasses the flexible use of imaginative representations, such as assuming alternate roles, settings, and timelines, to adaptively cope with stressors and manage negative emotions (Lahad & Leykin, 2012). Findings suggest that FRA is strongly correlated with measures of resilience, ego resilience, playfulness, specific imagination abilities, and fantasy proneness (Rubinstein et al., 2021, 2023a, b). These lower factors provide a more complex picture wherein three factors are considered 'resilient factors' (i.e., playfulness, control, and coping). This may suggest that a controlled and playful use of imagination and the use of imagination for coping foster resiliency in times of stress. Conversely, the transcendence factor was found to be distinct from resiliency and associated with specific clinical symptoms (Rubinstein et al., 2021, 2023a, b). This research conducted during the COVID-19 pandemic highlighted the importance of understanding adaptive versus maladaptive imagination use in fostering resilience (Rubinstein et al., 2021, 2023a, b, 2024). Accordingly, we expected positive associations of FRA and its 'resilient factors' with adaptive emotion regulation and negative associations with maladaptive emotion regulation.

1.2 Playfulness

Playfulness is defined as an individual difference variable that enables people to frame or reframe situations into entertaining, amusing, intellectually stimulating, and/or personally interesting terms. Playful adults enjoy interacting playfully with others, prefer unusual topics, persons, and/or activities, and are able to resolve tension playfully, preferring complexity over simplicity (Proyer, 2017). Playfulness is a relatively stable trait (across time and situations) and expresses itself through the easy onset and frequent and intense display of play behaviors (Proyer, 2012,

2017). A recent model of playfulness differentiates among four facets. The first facet is *other-directed* (O) playfulness and involves deriving joy from engaging in playful interactions with others and utilizing playfulness to enhance social connections. The *lighthearted* (L) facet is characterized by perceiving life as a game, embracing spontaneity, and prioritizing the present moment, often without much consideration of future consequences. The *intellectual* (I) facet is related to cognitive aspects, such as finding pleasure in the playful exploration of ideas, engaging in problem-solving activities, and appreciating complexity. Finally, *whimsical* (W) playfulness involves the ability to find amusement in unconventional and peculiar situations, displaying a preference for the unusual or odd (thus, the OLIW model; Proyer, 2017).

Playfulness relates to a variety of positive outcomes across various age groups; for example, in children positive associations were found with creativity or imagination (Lieberman, 1977), in adolescents with performance and motivational outcomes and with social status and bullying behaviors (Proyer & Tandler, 2020; Tandler & Proyer, 2018), and in adults with relationship satisfaction and work engagement (Brauer et al., 2021; Tandler et al., 2024). Playfulness was found to be associated with adaptive emotional adjustment and well-being across all age groups (Hoffman & Russ., 2012; Parker et al., 2023; Proyer & Tandler, 2020; Saunders et al., 1999). A more fine-grained analysis indicates that satisfaction with life was associated with the facets of other-directed, lighthearted, and intellectual playfulness, while no association was found for whimsical playfulness. Similar findings were observed in both adults and adolescents (Proyer & Tandler, 2020; Tandler et al., 2024). However, no clear associational pattern is observed for the facets' role in explaining various coping strategies. For positive coping with work challenges across different occupations, all playfulness facets seem to play an important role. In contrast, for negative coping, a pattern similar to that of life satisfaction emerges: other-directed, lighthearted, and intellectual playfulness appear to play a role, but not whimsical playfulness (Tandler et al., 2024). Thus, we could cautiously summarize, that for positive coping other-directed and lighthearted playfulness seem to be consistently predictive across various methods and occupations, and the playfulness facets intellectual and whimsical seem to play a less consistent explanatory role. For negative coping however, whimsical playfulness seems to play a rather negligible role.

Furthermore, playfulness may be a significant component in coping and self-regulation processes. Research has found that playfulness is associated with lower levels of stress, both self-rated and as perceived by others, and promotes the use of adaptive coping strategies to manage stress during the COVID-19 pandemic (Clifford et al., 2022). Additionally, playfulness encourages using leisure time for adaptive purposes—such as forming friendships or enhancing mood—rather than maladaptive ones (Qian & Yarnal, 2011). It is also linked to increased positive emotions and a greater sense of life satisfaction (Chang et al., 2013) and may generate additional cognitive resources that facilitate adaptive and beneficial coping with stress (Magnuson & Barnett, 2013).

Playfulness, therefore, can be recognized as a crucial element in self-regulation and coping mechanisms. By being playful, individuals can promote positive emotions, reconstruct narratives, and cultivate healing and resilience (Rubinstein & Lahad, 2023). Thus, we expected positive associations of all playfulness facets of

the OLIW model with adaptive emotion regulation and negative associations with the playfulness facets other-directed, lighthearted, and intellectual and maladaptive emotion regulation processes.

1.3　Emotion Regulation

Emotion regulation encompasses the intricate mechanisms and tactics individuals employ to adaptably govern and modulate their emotional states. Emotion regulation includes a complex interchange of inner and outer processes that shape our perception, assessment, and articulation of emotions. One definition of the cognitive structure of emotion regulation was proposed by Garnefski and Kraaij (2006), who argued that it can be divided into two processes—adaptive and maladaptive. The former refers to the abilities of acceptance, positive refocusing, refocus on planning, positive reappraisal, and putting into perspective. In contrast, the latter relates to self-blame, rumination, catastrophizing, and blaming others. These processes aim to adaptably manage the intensity, duration, and resolution of our emotional responses (Thompson, 1994). They encompass various cognitive processes that include understanding and processing our emotional states, as well as adjusting how we express, develop, and evaluate them.

Successful emotion regulation is essential for maintaining emotional well-being and navigating different situations adaptably (Silton et al., 2020). However, when emotion regulation is impaired, individuals may exhibit exaggerated reactions to minor events while showing indifference to significant events. In sensitive situations (e.g., crises, stressors, uncertainty), the likelihood of expressing specific emotions is increased, highlighting the importance of developing healthy emotion regulation skills for social and emotional development (Sandner et al., 2021; Troy et al., 2013). For example, people who struggle with emotion regulation are more susceptible to experiencing conflict in their relationships and interactions (Tani et al., 2015). On the other hand, adaptive cognitive emotion regulation strategies were found negatively correlated with psychological distress. Also, previous research demonstrated that adaptive emotion regulation strategies may be a moderating factor for individuals who have experienced psychological distress due to exposure to cyber-bullying victimization (Shaheen et al., 2023). Individuals who practiced adaptive strategies had low levels of psychological distress, while those using maladaptive strategies exhibited high levels of distress.

Another study investigated the relationships between coping strategies, emotion regulation, and psychological well-being during the COVID-19 pandemic (Lábadi et al., 2022). The researchers hypothesized that factors of fear of contamination, lack of social support, and intolerance of uncertainty would be related with maladaptive strategies and would predict symptoms of anxiety and depression. Conversely, individuals with protective factors (e.g., social support, high tolerance for uncertainty) would use adaptive strategies (e.g., positive focus, positive reappraisal) and were thus expected to report higher psychological well-being. Indeed, the findings showed that those who tended to catastrophize and report higher levels of loneliness were more likely to subjectively perceive the changes as negative. Conversely, the people who used positive coping reported a less negative perception of the situation. Fur-

thermore, the people with maladaptive strategies demonstrated high levels of impatience with uncertainty and loneliness, which exacerbated their mental well-being compared to others with adaptive strategies, who interpreted the situation as less stressful, tended to focus on more positive aspects, and used the available social support they had and eventually managed to promote their mental well-being (Lábadi et al., 2022; Meléndez et al., 2020; Volkaert et al., 2020). Therefore, adaptive emotion regulation strategies help in psychological coping and actually might be involved in the development of resilience in times of crises.

1.4 The Present Study

The aim of the present study was to investigate the associations of FRA, playfulness, and emotion regulation processes. This study had two aims. The first was to test the overlap of FRA with playfulness facets (Rubinstein et al., 2021). Particularly, significant positive associations were expected between the total FRA score, the 'resilience factors' (excluding transcendence), and all the playfulness factors. Second, we tested the joint predictive power of FRA and playfulness for adaptive and maladaptive emotion regulation processes. Based on previous research, FRA playfulness and the OLIW facet of other-directed and lighthearted playfulness were expected to be the strongest predictors in the model for adaptive emotion regulation and FRA transcendence for maladaptive emotion regulation (Parker et al., 2023; Rubinstein et al., 2021, 2023a, b, 2024). By examining the relationships between FRA and playfulness with emotion regulation processes, we hoped to gain a deeper understanding of these capacities and their potential clinical applications for trauma or other stress-related interventions.

2 Method

2.1 Participants and Procedure

The study's sample consisted of 298 participants from Israel, with ages ranging from 18 to 85 ($M = 44.0$, $SD = 17.2$) years. Most of the participants (87.2%) identified as women. Most were married or lived with a partner (42.6%); 48.3% lived in Tel Aviv or a central region; and most were secular (72.8%). The educational attainment within the sample was high, with 60.9% possessing a university degree (bachelor's, master's, or PhD), 20.1% having completed vocational training, 18.4% completing high school, and one participant had finished elementary school (see Table 1 for demographics).

The recruitment of participants predominantly took place during a 3-week social media campaign (primarily Facebook/Meta) that culminated in data collection at the end of January 2023. Inclusion criteria mandated that participants had to be at least 18 years old, with exclusion applying to those unable to complete the assessment for any reason, including refusal of informed consent. All participants provided voluntary online written informed consent before engaging with the questionnaires. Ethical considerations were upheld, as evidenced by the approval of the Ethics Committee of

Table 1 Descriptive statistics of the study sample		*N*	%
	Gender		
	Women	260	87.2
	Men	38	12.7
	Marital Status		
	Single	106	35.5
	Married/partner	127	42.6
	Divorced/separated	36	12
	Widow	12	4
	Other	17	5.7
	Education		
	Elementary	1	0.3
	High School	55	18.4
	Secondary/professional	60	20.1
	Academic - bachelor's degree	117	39.2
	Academic - master's degree	55	18.4
	Academic Ph.D.	10	3.3
	Regions		
	North district	71	23.8
	Haifa district	27	9
	Tel-Aviv district	34	11.4
	Center district	110	36.9
	Jerusalem district	35	11.7
	South district	20	6.7
	Gaza strip envelope	1	0.3
	Religion		
	Secular	217	72.8
	Traditional	39	13
	Religious	31	10.4
	Orthodox	2	0.6
	Other	9	3
	Economic Status		
	Low	25	8.3
	Medium	117	39.2
	Good	106	35.5
	Very Good	45	15.1
	Excellent	4	1.3
	Other	1	0.3
	Age		
	18–24	34	11.4
	25–34	80	26.8
	35–44	59	19.8
	45–54	32	10.7
	55–64	45	15.1
Note *N*=298	65+	48	16.1

the Tel Hai Academic College (13−6/2022) and adherence to the principles outlined in the Declaration of Helsinki.

The authors acknowledge that this study includes the same sample as in Rubinstein et al. (2023a), which examined the Hebrew translation of the OLIW-S scale to assess adult playfulness. The present study extends that work by exploring the interplay between different variables alongside OLIW, such as FRA and emotion regulation.

2.2 Measures

2.2.1 Fantastic Reality Abilities

The Fantastic Reality Ability Measurement (FRAME; Rubinstein et al., 2021) questionnaire assesses self-reported imagination use in response to stress or trauma through a four-factor model of coping (five items), control (four items), transcendence (six items), and playfulness (six items). Participants respond to a 21-item self-measurement on a 7-point Likert scale, ranging from 'completely disagree' to 'completely agree.' Previous research on the FRAME questionnaire demonstrated high internal consistency ($\alpha=0.88$) and a good test-retest reliability over a 27-week period ($0.60 < r < 0.80$; Rubinstein et al., 2021), with good psychometric qualities including factorial convergent and discriminant validity (Rubinstein et al., 2023a, b).

2.2.2 Playfulness

The OLIW-S (short form of the OLIW questionnaire) measure by Proyer et al. (2020; Hebrew version by Rubinstein et al., 2023a, b) is a 12-item self-report questionnaire that assesses four facets of adult playfulness called other-directed, lighthearted, intellectual, and whimsical playfulness. Each facet consists of four items (instead of seven in the longer version), and responses are given on a 7-point Likert scale, ranging from 'strongly disagree' to 'strongly agree.' Previous research had demonstrated the measure's sufficient reliability, with retest-reliability of at least $r=0.67$ over 3 months and internal consistencies of at least $\alpha=0.66$. The OLIW-S has shown good validity, including convergent and discriminant validity, factorial validity in exploratory and confirmatory factor analyses (EFA and CFA), and convergence with self, peer, and daily behavior ratings (Proyer, 2017; Proyer et al., 2019).

2.2.3 Emotion Regulation Processes

The Cognitive Emotion Regulation Questionnaire (CERQ-Short; Garnefski & Kraaij, 2006) is a self-report instrument of 18 items with nine subscales that can be divided into two 'second-order' groups of '*adaptive strategies*' (i.e., acceptance, positive refocusing, refocus on planning, positive reappraisal, and putting into perspective) and '*maladaptive strategies*' (i.e., self-blame, rumination, catastrophizing, and blaming others). Each subscale consists of two items answered on a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree.' A higher score indicates a greater utilization of the specific strategy. To calculate the score for each subscale, the two items belonging to that subscale were summed (Garnefski & Kraaij, 2006).

Recent studies demonstrated with CFA a good fit to the CERQ-Short nine-factor model (Araujo et al., 2020) across different cultures (Frondozo et al., 2022; Santos et al., 2023).

2.3 Data Analysis

This study used a cross-sectional research design. SPSS (Version 25; Armonk, NY: IBM Corp.) and the Java-based statistical processor (JASP; Version 0.17.3.0; JASP Team, 2023) were used for data analysis. First, bivariate Pearson's product-moment correlation coefficients and partial correlation coefficients (controlling for the demographics age and gender) were calculated to determine the relationship between FRA, playfulness, and emotion regulation. Second, multiple regression analyses were applied for each emotion regulation process (adaptive and maladaptive), in which the optional predictors for emotion regulation processes were explored. Since this was the first time these constructs were measured with emotion regulation, different types of regressions were tested: Our regression models included linear, quadratic, and cubic regressions. The level of statistical significance was set at $p < 0.05$ and for each regression model, we provided the F-value as on overall test to indicate whether each model with its specific set of predictors can be considered explaining a statistically significant amount of the variance of the criterion compared to the null-model, that includes the intercept only and no predictors.

3 Results

3.1 Preliminary Analyses

The participants were asked to provide information regarding their age, gender, family status, education level, geographic region, religion, and economic status (see Table 1). Means, standard deviations, distributions, and internal consistencies of the study variables are presented in Table 2. The results of our bivariate correlational analyses including all study variables are presented in Table 3. The ages of participants showed significant negative associations from small to medium sizes with some of our study variables ($-0.30 < r < -0.12$) such that the older participants reported lower levels of FRAME overall and transcendence, OLIW other-directed, and maladaptive emotion regulation. Participants' gender also showed small associations with our study variables. Men compared to women participants reported significantly higher levels across all FRAME questionnaire scales ($0.15 < r < .22$) and on the OLIW intellectual ($r = 0.12$) and other-directed scales ($r = 0.20$). Thus, we decided to control for participants' age and gender in the subsequently conducted analyses.

Adaptive emotion regulation had a significantly positive correlation with all FRAME and OLIW measures ($0.14 < r < 0.43$), whereby the FRAME questionnaire overall score showed the numerically highest positive associations with adaptive emotion regulation ($r = 0.43$). For maladaptive emotion regulation, significant negative associations with measures of FRAME and OLIW playfulness were fewer and

Table 2 Means, standard deviations, distributions, and internal consistencies of the fantastic reality ability measurement scales, facets of playfulness (OLIW), and adaptive and maladaptive emotional regulation

	M (SD)	Range	Skewness	Kurtosis	Cronbach's α
FRAME					
1. overall	4.40 (0.80)	1.62–6.57	-0.13	0.41	0.89
2. coping	4.10 (1.00)	1.00–7.00	-0.22	0.71	0.72
3. playfulness	4.88 (0.89)	1.50–6.83	-0.14	0.24	0.75
4. control	4.60 (1.00)	1.00–7.00	-0.10	0.03	0.86
5. transcendence	4.05 (1.05)	1.00-6.83	-0.08	-0.11	0.77
OLIW Playfulness facets					
6. Other-directed	4.65 (0.97)	2.00–7.00	-0.11	-0.17	0.53
7. Lighthearted	4.41 (1.00)	1.33-7.00	0.09	0.55	0.63
8. Intellectual	4.35 (0.91)	1.33–6.67	-0.03	0.25	0.53
9. Whimsical	4.63 (1.08)	1.67-7.00	0.11	-0.22	0.70
Emotional regulation					
10. adaptive	3.65 (0.49)	1.90–4.80	-0.26	0.12	0.73
11. maladaptive	3.11 (0.52)	1.50–4.63	-0.04	0.19	0.66

Note. $N=298$. FRAME overall=total score of all FRAME scales (coping, playfulness, control and transcendence). FRAME and playfulness values ranged from 1 to 7, for emotional regulation values ranged from 1 to 5, with higher scores indicating strong endorsement of the construct

smaller in size ($-0.36>r>-0.16$), whereby OLIW lighthearted showed the strongest negative association ($r=-0.35$).

3.2 3.2 the Relationship between the Fantastic Reality Ability and Facets of Playfulness (OLIW)

Table 4 displays the correlations (controlled for age and gender) between participants' self-reported FRAs and the OLIW facets of playfulness. We found an overall positive association pattern. All FRAME questionnaire scales were significantly and positively associated with all OLIW playfulness facets, with overall medium effect sizes ($0.17<r<0.51$). Among the FRAME measures, the FRAME playfulness subscale showed the numerically strongest associations with the OLIW facets ($0.44<r<0.51$), whereby the highest correlation was with OLIW whimsical ($r=0.51$). The strong association was also reflected in the high amount of shared variance of the FRAME playfulness scale jointly explained by the OLIW facets (with an overlap of 43%), and the strong association was also mirrored in the almost equally high associations with the overall FRAME scale that was conceptualized as a joint scale of the resilient regulation strategies, including the strategies coping, playfulness, and control (with a joint overlap of 35%). This was in line with our assumptions. The associations of the FRAME scale transcendence were smaller in size ($0.17<r<0.33$), and the OLIW

Table 3 Bivariate intercorrelations of the fantastic reality ability measurement scales, facets of playfulness (OLIW), adaptive and maladaptive emotional regulation

	1	2	3	4	5	6	7	8	9	10	11	12
FRAME												
1. overall												
2. coping	0.81***											
3. playfulness	0.76***	0.45***										
4. control	0.82***	0.62***	0.60***									
5. transcendence	0.79***	0.55***	0.39***	0.45***								
OLIW Playfulness facets												
6. O	0.50***	0.40***	0.51***	0.36***	0.32***							
7. L	0.39***	0.27***	0.47***	0.43***	0.13*	0.34***						
8. I	0.44***	0.30***	0.45***	0.36***	0.30***	0.36***	0.31***					
9. W	0.45***	0.28***	0.50***	0.34***	0.31***	0.39***	0.41***	0.26***				
Emotional regulation												
10. adaptive	0.43***	0.40***	0.34***	0.41***	0.24***	0.25***	0.35***	0.19**	0.14*			
11. maladaptive	−0.09	0.04	−0.14*	−0.19**	0.19**	0.03	−0.35***	−0.17**	−0.03	−0.18**		
Sociodemographics												
12. age	−0.21***	−0.11	−0.11	−0.10	−0.30***	−0.20***	0.03	−0.10	−0.02	−0.05	−0.12*	
13. gender	0.22***	0.22***	0.16**	0.16*	0.15**	0.20***	0.01	0.12*	0.10	0.00	0.01	−0.15**

Note. $N=298$. FRAME overall=total score of all FRAME scales (coping, playfulness, control and transcendence). I=Intellectual. L=Lighthearted. W=Whimsical. O=Other-directed. Age in years, Gender: 1=Women, 2=Men.

* $p<0.05$. ** $p<0.01$. *** $p<0.001$.

facets jointly explained only 14% of the variance. However, contrary to our assumptions, all associations were statistically significant and positive.

3.3 Fantastic Reality Ability and Facets of Playfulness (OLIW) as Predictors of Emotion Regulation

We performed separate hierarchical linear regression analyses for each emotion regulation strategy (Table 5). For each analysis, age and gender were entered in step 1, and the four FRAME scales and the four OLIW facets were joinlty entered in step 2. The analysis of *adaptive emotion regulation* revealed that two out of eight predictors (FRAME coping and OLIW lighthearted) were signficantly related to higher levels of adaptive emotion regulation and both effects were equal in size. For *maladaptive emotion regulation*, five of the eight predictors (and partly different predictors compared to the adaptive emotion regulation model) were significantely associated, whereby the associationas directions differed: FRAME control and OLIW lighthearted and intellectual were related to lower levels of maladaptive emotion regulation; FRAME transcendence and OLIW other-directed were related to higher levels. Considering the magnitude of the effect sizes, the effect of OLIW lighthearted was numerically much higher than the effect of OLIW intellectual.

The amount of explained variance was equally high for both regression models: For adaptive emotion regulation, the amount was 26%, and for maladaptive, 25%. Power analyses testing for sensitivity of our regression models (method: special increase in R^2, fixed model, $\alpha = 0.05$; $1 - \beta = 0.95$) demonstrate that the smallest effect size that could have been detected with our sample size is $f^2 = 0.086$ which can be interpreted as a small effect. We additionally tested nonlinear models with our set of predictors. The results for adaptive emotion regulation were that the linear model presented a better fit to the data than the non-linear models.

4 Discussion

The primary objective of this study was to investigate the interplay between FRA and OLIW playfulness and to understand their combined significance in advancing adaptive emotional mechanisms. Specifically, we assumed that the total FRA score, the FRA 'resilience factors' (excluding transcendence), and all the OLIW playfulness facets would associate with each other and with adaptive emotion regulation. Moreover, FRA playfulness and the OLIW facet other-directed were hypothesized to be the robust predictors of adaptive emotion regulation. Our hypotheses found partial confirmation.

Overall, there was a consistent overlap between all facets of FRA and OLIW playfulness. These associations can be interpreted as content-valid in the sense that theoretically closer constructs, such as FRA playfulness, exhibited the numerically strongest correlations with OLIW playfulness compared to the other FRA factors, particularly FRA transcendence. FRA playfulness and OLIW playfulness share common ground in fostering a playful approach. However, FRA playfulness distinctly emphasizes the use of imagination as an adaptive response to stress or trauma in a

Table 4 Correlations of the fantastic reality ability measurement scales (FRAME) and facets of playfulness (OLIW) controlling for age and gender

	O	L	I	W	$R^2/\Delta R^2$
FRAME					
overall	0.47***	0.42***	0.43***	0.45***	0.43/0.35
coping	0.37***	0.28***	0.28***	0.23***	0.22/0.16
playfulness	0.48***	0.47***	0.44***	0.51***	0.46/0.43
control	0.35***	0.45***	0.34***	0.34***	0.29/0.26
transcendence	0.29***	0.17**	0.29***	0.33***	0.24/0.14

Note. $N=298$. FRAME overall=total score of all FRAME scales (coping, playfulness, control and transcendence). I=Intellectual. L=Lighthearted. W=Whimsical. O=Other-directed. ΔR^2=amount of variance explained jointly by all playfulness facets while controlling for age and gender

*$p<0.05$. **$p<0.01$. ***$p<0.001$

Table 5 Hierarchical multiple regression analyses Predicting different emotional regulation strategies from age, gender, fantastic reality ability scales, and facets of playfulness (OLIW)

	Adaptive emotional regulation	Maladaptive emotional regulation
Model	β	β
Step 1		
Age	−0.01	−0.04
Gender	−0.10	−0.03
Step 2		
FRAME: coping	0.25**	0.13
FRAME: playfulness	0.11	−0.02
FRAME: control	0.14	−0.25**
FRAME: transcendence	0.01	0.26***
Playfulness: other-directed	0.05	0.13*
Playfulness: lighthearted	0.21**	−0.33***
Playfulness: intellectual	−0.03	−0.15*
Playfulness: whimsical	−0.12	0.07
ΔR^2	0.26	0.23
Total R^2	0.26	0.25
F	9.19***	8.87***

Note. $N=272$

*$p<0.05$. **$p<0.01$. ***$p<0.001$

sociable and engaging manner. The overlap between constructs was also reflected in the results of the joint regression models for emotional coping. All facets of FRA and OLIW were associated with adaptive emotion regulation. The total FRA score showed the highest association with adaptive emotion regulation. While only two predictors (higher levels of FRA coping and OLIW lighthearted playfulness) appeared to be significant in explaining adaptive emotion regulation, a larger set of predictors was statistically significant per maladaptive regulation. These included lower levels of FRA control and OLIW lighthearted and intellectual playfulness, and higher levels of FRA transcendence and OLIW other-directed playfulness. Therefore, lighthearted playfulness appeared to be consistently related to various emotional coping processes, while this consistency was also observed for FRA control, albeit with

smaller effects. However, it is essential to interpret these results with caution due to the cross-sectional design of this study, which precluded causal inferences.

4.1 The Interplay between FRA and OLIW Playfulness

Our finding regarding the relationship between FRA and playfulness agrees with previous studies that suggested they are closely related, and possessing one ability may be an indicative sign that the person possesses the other ability (Afonso & Roque, 2015). This research finding shows positive connections between the total FRA score and its resilience factors, including coping, playfulness, and control, with the OLIW facets. This outcome is in line with previous research findings regarding FRA and playfulness (Rubinstein et al., 2021). In Farley et al.'s (2021) study, strong positive associations were discovered between all OLIW facets and positive emotions, engagement with others, relationships, meaning, and accomplishment, all of which are considered resilience factors. Lubbers et al. (2023) found that playfulness can increase positive emotions and help individuals develop new coping strategies. The authors suggested that playing and having fun with others are inherent and integral elements of a 'playful person.' These findings correspond with the findings showing the associations between OLIW lighthearted and other-directed and FRAME coping and control. Moreover, the strongest correlation between FRA playfulness and OLIW whimsical may indicate the importance of this unique self-perceived belief and supports the authentic thinking that a person has about themself.

Although our initial hypotheses did not include FRA transcendence due to its relationships with clinical symptoms to be positively correlated with the facets of playfulness, it did present small to medium associations with all OLIW facets. Kamat (2023) examined the relationship between daydreaming, creativity, and well-being and found high levels of daydreams were associated with high levels of anxiety, depression, stress, and distress. These findings may implicate playfulness as a mediating factor that helps boost adult mental health (Shen & Masek, 2024).

According to Magnuson and Barnett (2013), individuals with playful versus less playful personalities use similar sets of coping mechanisms. However, these individuals differed in their frequency and style of implementing those mechanisms and their perceived stress levels. Therefore, highly playful individuals seem more likely to rely on their imagination as a coping mechanism during stressful times. This playful approach may help individuals manage their emotions and thoughts. How a person uses/activates their FRA transcendence ability in a playful versus non-playful way may be of importance.

4.2 The Role of FRA and OLIW Playfulness in Emotion Regulation

Our hypothesis regarding adaptive emotion regulation was only partially confirmed. The highest association was found to be with the total FRA score. All FRA and OLIW facets showed small to medium associations with adaptive emotion regulation. Surprisingly, we found that higher levels of FRA coping and OLIW lighthearted playfulness but not other-directed playfulness appeared to be most significant in our model that explained adaptive emotion regulation. Previous research demonstrated how

FRA and OLIW facets align with ego-resilience constructs (Rubinstein et al., 2021, 2023a, b, 2024). However, the importance of FRA coping and the OLIW lighthearted facet needs to be explained. Kobylińska and Kusev (2019) showed that one of the benefits of adaptive self-regulation is an improvement in a person's psychological health and well-being and their coping abilities during stressful life events. Another study to describe a similar interaction was the study of Wilms et al. (2020), who concerned themselves with predicting the everyday factors and personal choices that lead to either adaptive and beneficial emotion regulation or disruptive and maladaptive regulation. Active coping and perceived control were found to be positively associated with feeling better and adaptive emotion regulation. Similarly, lighthearted playfulness was shown to be associated with positive coping in general and in a context-specific environment, like on the job (Tandler et al., 2024; Tandler & Proyer, 2018). Lighthearted people's approach to life appears to include not worrying too much about future consequences and framing life more like a game (Proyer, 2017). This approach was shown to be related, for example, to the adaptive coping strategy *distraction*, which means dealing with stressful situations by seeking distraction through focusing on situations and states that are incompatible with stress and by remaining relaxed (Tandler et al., 2024).

Unexpectedly, a greater set of predictors among FRA and OLIW facets was associated with maladaptive emotion regulation, where the associations differed in direction. Thomson and Jaque (2023) found daydreaming negatively related to optimal emotion regulation. In addition, daydreaming subjects had low creative processing skills and low self-efficacy. The similarities of those findings to the current study include the positive correlation that emerged between maladaptive emotion regulation and FRA transcendence and a negative correlation with FRA control. The inconsistent correlational pattern of the playfulness facets in explaining maladaptive regulation had not been found as such in previous studies. The playfulness facets other-directed, lighthearted, and intellectual were negatively and consistently related to maladaptive coping strategies (Tandler et al., 2024; Tandler & Proyer, 2018). Whereby, the effect of OLIW lighthearted was much stronger than that of OLIW intellectual. This fits to previous results on playfulness' role in well-being (e.g., Proyer & Tandler, 2020), where OLIW intellectual played a minor role compared to OLIW lighthearted in explaining well-being and psychological health. Consistent with previous results on negative coping at work (Tandler et al., 2024), whimsical playfulness seems to play a minor role in explaining negative emotion regulation. Future research should delve deeper into the unexpectedly small positive correlation between other-directed playfulness and maladaptive emotion regulation. We wonder whether the ease and joy from other-directed playfulness that people seek from social situations may significantly shape the perception, assessment, and articulation of emotions in a way that is related to maladaptive processes of managing the intensity, duration, and resolution of emotional responses.

4.3　Limitations and Future Directions

Our cross-sectional study design precluded us from drawing conclusions about the direction of causality. Future research needs to use longitudinal designs to learn more

about the direction of causality and whether interventions to foster FR abilities are fruitful in also fostering adaptive emotional coping. Also, our results were based on self-reported questionnaire data only. Future researchers might facilitate a variety of assessment methods like peer reports (e.g., Brauer et al., 2024; Tandler et al., 2024) or open-question formats and/or scenario tests to distinguish overlaps due to common methodological variance from construct-related covariances. Future studies might also focus on unique gender effects given that women are more prone to reporting stress and trauma than men across various situations (Brewin et al., 2000). Still, our results provide first insights into gender differences, however the findings need to be validated with a larger sample that includes both genders of equally high numbers. There are probable gender-specific ways of coping and dealing with stress with even other stressors that might need to be controlled in future research, as well. Given the sample characteristics and cross-sectional design, the generalizability of our findings may be limited. Future research with more diverse samples and longitudinal designs is needed to confirm these results.

4.4 Implications

Our findings have several practical implications, for example, for developing interventions to promote emotional resilience and coping during challenging circumstances in general, but also, in particular, for times of crises. First, related interventions should help foster imagination and playfulness, as these abilities appear to protect against maladaptive coping and promote adaptive coping strategies. Research has highlighted ways to promote playfulness, for instance with self-directed activities like the Three Playful Things Intervention (i.e., writing about three playful experiences of the day before going to bed and reflecting about who was present and what emotions were elicited; Proyer et al., 2020), or as part of larger humor-based programs directed at re-discovering a playful attitude towards life that many adults experience in childhood (McGhee, 2010). Second, future research hopefully shows whether lighthearted playfulness should be specifically targeted. This worldview of seeing life more like a playground and a preference for improvisation and related traits could be part of a helpful outlook to deal with both smaller and larger challenges. Third, interventionists should consider the interplay between FRA and playfulness, designing strategies that integrate both approaches. It could be beneficial to find and develop interventions to promote imaginal coping that facilitate control and a lighthearted approach (Rubinstein et al., 2024).

4.5 Conclusions

This study has highlighted significant relationships between FRA, OLIW playfulness, and emotion regulation. Our findings indicate that FRA's resilience factors (control, coping, playfulness) and OLIW playfulness facets are positively associated with adaptive emotion regulation. Notably, lighthearted playfulness and FRA coping were key correlates of adaptive emotion regulation, suggesting that a playful approach to life and imaginative coping strategies are linked to enhanced emotional well-being. However, the association between FRA transcendence and maladaptive

emotion regulation indicated potential risks when imaginative escape is not balanced with control. These insights suggest that fostering specific elements of both imagination and playfulness might promote emotional resilience and adaptive coping. Future research should employ longitudinal designs and diverse assessment methods to further explore these relationships and develop effective interventions. Additionally, a more nuanced approach could help explain the complex interplay between these constructs and provide deeper insights into their roles in emotion regulation and psychological resilience.

Data Availability The study materials and data used for this article can be accessed at [https://doi.org/10.7910/DVN/IVQEJQ].

Declarations

Conflict of interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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