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Playfulness in times of extreme adverse conditions: a theoretical model and case illustrations

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The act of play has long been recognized as a fundamental aspect of human development. Playfulness, in turn, is considered a variable reflecting individual differences regarding the disposition to engage in play. To gain insight into playfulness's potential contribution to health and well-being, this paper will explore its role during times of extreme adversity, proposing a theoretical model to understand playfulness as a coping mechanism in such conditions. Our Playfulness as a Coping Strategy model suggests that playfulness comprises various dimensions that serve as intrinsic resources for navigating adversity. In this context, we refer to playfulness as a self-initiated state, whereby individuals reclaim their autonomy to enter a space that opposes or contradicts the extremely adverse condition they are in. The model frames the use of playfulness in extremely adverse conditions, and demonstrates the model with two case illustrations of videos from soldiers in war, both from Ukraine and Israel. By doing that, we shed light on how playfulness can be cultivated as a protective factor promoting psychological adaptation. Furthermore, we outline future directions for research on playfulness as a change factor (i.e., active ingredient) in the creative arts therapies and other interventions, paving the way for elucidating its role in fostering well-being and health.

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Play and playfulness have received increasing attention over the past half century (Shen and Masek 2023). Cumulative empirical evidence supports the positive role of both play and playfulness in promoting healthy development and positive well-being (Farley et al. 2021; Proyer et al. 2018; Zosh et al. 2022). *Play* is defined by the Dutch historian Johan Huizinga (1955) in his seminal work "Homo Ludens" (i.e., "the playing man"), as a free activity that does not serve a specific purpose; instead, the essence of play is fun driven by intrinsic motivation. Players engage in play for the sake of playing itself, without any extrinsic purpose or ulterior motive (Skard and Bundy 2008). Hence, play is an activity that stands outside of 'ordinary life', being simultaneously not serious and utterly absorbing and connecting with no material interest while being bound by its own rules (Huizinga 1955; Vygotsky 1967).

Whereas play is an observable behavior, playfulness is considered as a variable reflecting individual differences regarding the disposition to engage in play (Proyer 2012, 2017). More specifically, *playfulness* **is** defined as "the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment" (Barnett 2007, p. 955). Based on her extensive empirical study on the assessment of children's playfulness, Bundy's definition of playfulness (1997) in children emphasizes the inherent drive to engage in play activities, characterized by elements such as joy, humor, spontaneity, and full immersion in the present moment. According to Bundy, playfulness comprises four key elements: *intrinsic motivation, internal control*, the *freedom to suspend reality*, and *framing* (Skard and Bundy 2008). From a developmental perspective, playfulness can be regarded as a stable trait that is most notable during play activity and interpersonal interactions (Lieberman 2014; Proyer, 2014a). Adults' studies, in turn, have defined playfulness as characterized by creativity, curiosity, pleasure, and a sense of humor (Farley et al. 2021), along with uninhibitedness, spontaneity, and a fun-seeking motivation (Proyer and Ruch 2011).

Consistently, empirical studies find playfulness to be integral to healthy development and positive well-being (Zosh et al. 2022). In addition, playfulness has been linked to coping skills in a time of crisis (Chang et al. 2013; Clifford et al. 2022; Magnuson and Barnett 2013; Qian and Yarnal 2011). However, theoretical accounts of how or why playfulness contributes to well-being (namely, its mechanism of change) continue to defy clear consensus (Chick et al. 2012; Rubinstein et al. 2023). To gain insight into the potential contribution of playfulness to health and well-being, this paper explores its use during times of extreme adversity, proposing a theoretical model to understand playfulness as a coping mechanism in such conditions and illustrating it using two case examples from soldiers in Ukraine and Israel.

The role of playfulness over the lifespan

Historically, the study of play and playfulness has its roots in developmental psychology and the study of children (e.g., Lieberman 2014; Piaget 1951; Vygotsky 1967). Play, both in quality and quantity, has consistently been found to be linked to children's developmental success (Zosh et al. 2022), supporting long-held theoretical claims of play as a "leading factor" of development (Vygotsky 1978, p. 101). Yet, play does not cease once an individual reaches adulthood (Proyer 2014b). In fact, mounting empirical evidence from recent years points to the value of play and playfulness beyond childhood. Consistently, playful adults have shown increased health and well-being (Demir 2021; Farley et al. 2021; Proyer et al. 2018), improved cognitive functioning (Proyer 2011; Proyer et al. 2019), as well as social skills and relationship satisfaction (Brauer et al. 2021). In short, children's and adults' playfulness fosters social, emotional, and cognitive resources (Van Vleet and Feeney 2015), each of which may contribute to one's ability to cope in periods of heightened distress.

Playfulness is inherently linked to social competence (Brauer et al. 2021). Children's engagement in play is arguably one of their early social experiences first with their caregivers, then their siblings and peers (Nicolopoulou and Smith 2022). Consequently, playfulness has important consequences for children's development of social skills, theory of mind, and pro-social behavior (Zosh et al. 2022). Even in adults, playfulness is linked to social experiences (Brauer et al. 2021; Guitard et al. 2005). A recent cross-cultural, qualitative study, for example, highlighted "social sharing" as a crucial aspect of adult playfulness (Masek 2024), which also reflects prior theoretical conceptualizations of playfulness as social spontaneity (Lieberman 2014), sociable and outgoing (Barnett 2007), or other-directedness (Proyer and Jehle 2013).

As a result, research indicates that playfulness plays a role in building social connections, allowing individuals who exhibit playful traits to tap into social support networks when facing challenges (Brauer et al. 2021). In a study on the conceptualization of playfulness, Proyer (2014a) noted how adults emphasized the role of playfulness in cultivating relationships at work and in leisure activities but also in coping with stress. His results were further corroborated by Magnuson and Barnett (2013), who demonstrated that playful adults are more likely to access instrumental and emotional support from their social circle during periods of heightened stress compared to their less playful peers. Congruently, a recent review noted how playful interactions fostered social engagement in mental health group-based interventions, which, in turn, supported individuals' therapeutic processes (Shen and Masek 2023).

Aside from encouraging social connections, playfulness is implicated in fostering personal emotional resources. Both conceptually and empirically, playfulness is closely tied to positive emotions. Children, for example, predominantly describe play as "fun" (Glenn et al. 2013, p. 191) or "enjoyable" (Buldu and Buldu 2023, p. 818). Similarly, in adults, playfulness has been conceptualized as a fun-seeking motivation (Shen et al. 2014a) or as humorous and cheerful (Proyer and Jehle 2013). Congruently, Farley et al. (2021), found in a sample of 175 adults robust positive associations between aspects of playfulness and positive emotions (i.e., joy, contentment) mirroring previous results (McCoy et al. 2023; Proyer 2014a, 2014b; Qian and Yarnal 2011). Moreover, Chang et al. (2013) showed that more playful adults not only experienced heightened positive emotions but also reduced negative emotions (e.g., sadness, anger, embarrassment). As such, playfulness has been posited to be conducive to the development of durable emotional stability by frequently facilitating positive rather than negative emotions (Fredrickson 1998, 2001).

Accordingly, children's playful engagement in play activities has consistently been linked to their emotional regulation (Colliver et al. 2022; Slot et al. 2017). However, also in adults, playfulness is linked to emotional control. Parents' playfulness, as displayed in their daily interactions with their children, has been shown to positively impact children's emotional regulation (Cabrera et al. 2017; Shorer et al. 2019) and prosocial behavior (Shorer et al. 2023) and, in turn, contribute positively to their children's handling of adversity, such as the COVID-19 pandemic (Shorer and Leibovich 2022).

Adults' playfulness also improves their emotional regulation. A recent study by Holmes and Hart (2022) demonstrated that college students with higher levels of playfulness were more adept at managing and utilizing emotions. Similarly, Li et al. (2021)

found playfulness in students to be a protective factor against burnout during the COVID-19 pandemic by facilitating a sense of control. Consequently, it may be argued that playful individuals are better equipped to deal with challenging emotions and, even in times of crisis, experience emotional stability.

Lastly, playfulness is linked with individuals' cognitive functioning. Children's playfulness has been shown to be conducive to their cognitive development (Foley 2017; Quinn et al. 2018; Skene et al. 2022). For example, a recent longitudinal study showed that children who are engaged in more pretend play, a form of play that is marked by imagination and creativity, benefitted in their executive functioning despite cumulative adversity, such as poverty, divorce, or threatening life experiences (Thibodeau-Nielsen et al. 2020). This is also evident in studies with adults. For example, adults who perceived themselves as more playful reported higher levels of self-efficacy and, in turn, improved coping skills during the COVID-19 pandemic (Clifford et al. 2022).

Playfulness in extreme adverse conditions

As mentioned, playfulness involves the ability to positively reframe potentially distressing situations and, in turn, adapt more easily to change and adversity (Barnett 2007). Empirical findings suggest that this includes the ability to distract oneself, use humor, or maintain a hopeful attitude (Magnuson and Barnett 2013; McCoy et al. 2023; Rubinstein et al. 2023). Relatedly, playfulness has been directly associated with children's development of resilience in the face of terrorist attacks (Cohen et al. 2010; Cohen et al. 2014). Rubinstein and Lahad (2023) explored the capacity to use imagination and playfulness in times of stress or trauma as part of their conceptualization and development of the *Fantastic Reality Scale Measurement*. Their findings revealed strong correlations between Fantastic Reality Ability and various aspects of coping with adversity, including resilience, self-efficacy, emotional regulation, and optimism (Rubinstein et al. 2023). However, in their conceptualization, playfulness is a sub-dimension of the wider Fantastic Reality Ability.

When looking for examples of the use of playfulness as a deliberate intervention in times of adversity, we can turn to the work of *medical clowns* (Kasem Ali Sliman et al. 2023). Medical clowns may be considered 'play experts' (Feniger-Schaal et al. 2023). Their main aim is to promote a playful encounter with the people they meet and enhance playfulness (Schwebke and Gryski, 2003). Most of the studies on medical clowns describe their work in stressful and emotionally challenging situations: working in special units treating children who have undergone sexual abuse (Tener et al. 2012), working in refugee camps, in disaster areas, (Anes and Obi 2014; Cunningham 2019; Ilan et al. 2018), with terminally ill people (Pinna et al. 2018) and assisting during medical examinations (Meiri et al. 2017).

A recent study aimed to map the main characteristics of medical clowns' work (Karnieli-Miller et al. 2023). Based on observation, simulation, and interviews, the authors concluded that the clowns' playfulness is situated in an interpersonal context. They "invite patients and their family members to let go and release and vent their emotions to gain catharsis" (Karnieli-Miller et al. 2023, p. 29). Hence, in these encounters, the clowns enable the expression of a variety of emotions. The playful encounters with the clowns are also aimed at enhancing a sense of control and autonomy. The clowns wish to empower the child or the adult by giving them an opportunity to play with some of the power dynamics that they experience in the hospital. Using fantasy, humor, and role-play enables the child or the adult to play flexibly with the social constraints and gain a sense of autonomy within the playful encounter with the clown, despite the restrictive environment (Feniger-Schaal et al. 2018). While most studies on medical clowns describe the outcome of the clowns' work, the paper of Karnieli-Miller et al. (2023) describes one of the few studies that aimed at mapping the "active ingredients" of the clowns' playful work. Hence, to understand what they are doing during their interactive play that helps people cope with the adverse situation.

Another example of playfulness in extremely adverse conditions is found in Chatterjee (2018) study performed by the International Play Association (IPA) that explored children's play across major crises in four countries: Earthquakes in Japan and Nepal, extreme poverty in slums in India, and refugee housing in Thailand. Based on her observation and interviews she concluded that extreme and difficult life circumstances, including lack of access to safe play spaces, did not prevent children from playing. The immense richness of poor migrant children's free play, living in poverty in unsafe and inadequate environments, seems to suggest that these children utilize a form of play that is characterized by spontaneity, creativity, freedom, and emotional expressions (Chatterjee 2018). Play, she concluded, became an important expression of children's agency and resilience in uncertain times and under adverse circumstances. Their self-determination to engage in play even in extreme circumstances suggests that playfulness fulfills a psychological need, surpassing basic physiological requirements like safety. Hence the engagement in play seems almost like a survival instinct.

Chatterjee's (2018) study emphasized children's use of play during times of adversity, briefly describing the characteristics of the play that children engage in under such circumstances. However, it did not explore what specific aspects of their play might be particularly poignant during these challenging times. In the present paper, we aim to propose a theoretical model for the use of playfulness in times of adversity, focusing on the key elements of playfulness that constitute the mechanism of change during these periods.

Playfulness as a coping strategy (PCS): a theoretical model

Based on the reviewed literature, we suggest a theoretical model that conceptualizes the use of Playfulness as a Coping Strategy (PCS) within the context of extreme adverse conditions, as presented in Fig. 1.

Instability is a fundamental human experience, as "all forms of life are impermanent and turbulent" (Johnson 2009, p. 90). In times of adversity, the external reality is experienced as unstable, facing overwhelming emotions (Diab et al. 2019). This experience of instability is particularly heightened in extreme adverse contexts, such as instances of political violence or natural disasters, where unpredictability, loss of control, and threats to emotional and physical well-being loom large (Boin et al. 2018). In this context, playfulness may occur as an internal resource, which was demonstrated in the above-mentioned studies as a protective factor. Hence, people may intentionally choose to enter a space of playfulness when they are in times of crisis. Thus, individuals make use of the possibility of being in a pretend reality when the external reality is overwhelming. This may sound similar to the case of pathological *dissociation* when the experience of an overwhelming and extreme situation pushes toward a mental split from reality, like in the case of sexual harassment or other severe traumatic experiences (Carlson et al. 2012). However, "taking flight" into a state of playfulness may be seen as a helpful coping strategy to create an alternative momentary non-threatening reality.

When people turn to playfulness in times of crisis, they may use the arts to enter the playful space. The arts facilitate the *framing* that conceptually has been suggested as a core

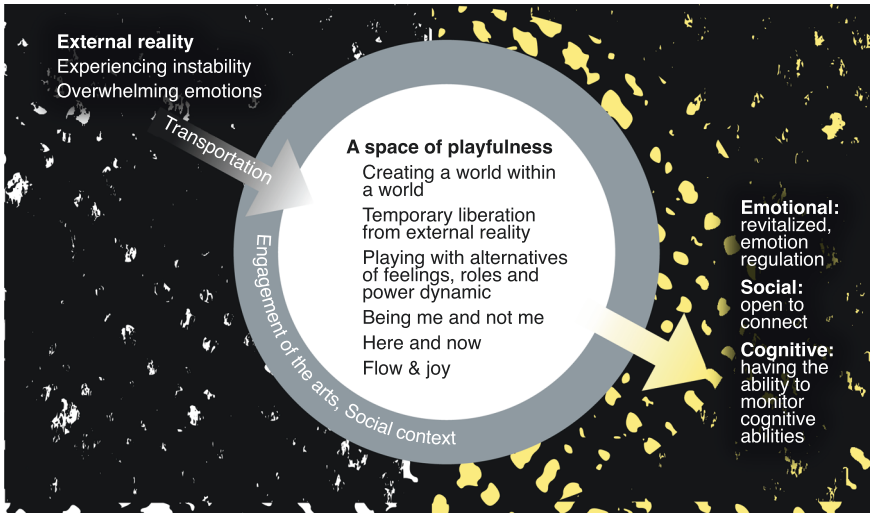

Fig. 1 A theoretical model of playfulness as a coping strategy in times of extreme adversity.

characteristic of playfulness (Barnett 2007; Bundy et al. 2001). For example, using a song, a costume, a dance, or taking on a dramatic role helps to frame the entrance into a different space. Moreover, using artistic expression may help to maintain and preserve the space of playfulness and create the aesthetic distance that is needed (Scheff 1981; Landy 1996) from the 'real world,' hence, being emotionally engaged but not overwhelmed.

Entering a pretend reality often happens in a social context (Van Vleet and Feeney 2015). Similar to theater, pretend reality most commonly happens as an interpersonal experience (Pendzik 2006). Whether the partner is a witness, an audience (like in the case illustrations discussed below), or a collaborator-player (like with the medical clown example), the involvement of other people enhances the experience of playfulness (Van Vleet and Feeney 2015).

The space of playfulness enables the creation of a 'world within a world,' an idea that received numerous conceptualizations (Pendzik 2006, p. 272). Pertinent to our model is the concept of *dramatic reality* in drama therapy, which refers to the entrance into an imaginary realm and engaging in pretend, make-believe play (Pendzik, 2006). In drama therapy, the dramatic reality serves as the main container for the therapeutic process. Other resonating terms include, for example, the *potential space* of Winnicott (1984), and the *play space* of Johnson (2009), both emphasizing the idea of a zone of liminality (Turner et al. 2017) that provides the opportunity to explore (within) an alternative reality and therefore to hold the paradox of being me and not me at the same time (Landy 1993). Therefore, within the space of playfulness, a temporary liberation from external reality can be experienced and the instability of the outside world can be played with and explored (Johnson 2009). Being present in the here-and-now within the space of playfulness enables playing with alternatives of feelings, roles, and power dynamics (Johnson and Davis, 2024; Karnieli-Miller et al. 2023). The liberated and free stance is often characterized by an emotional quality of joy, and flow (Proyer and Brauer 2023) that accompanies the act of play.

Stepping into the space of playfulness can be described as a means of transportation. Schechner (2003) conceptualizes 'transportation' in the context of performance and theatrical experiences. He describes transportation as the process by which individuals are emotionally and intellectually moved or carried away from their current reality into the world presented by a performance. In other words, transportation occurs when the audience or the actors become fully engrossed and absorbed in the narrative, characters, or atmosphere of a performance, to the extent that they temporarily forget their own circumstances and immerse themselves in the world of the performance. Schechner's notion of transportation highlights the potential transformative power of theatrical experiences to transport individuals to different emotional and cognitive states, providing them with a temporary escape or alternative perspective on reality (Schechner 2003). Thus, being in the space of playfulness may provide a temporary "rest" that, in turn, enables the players to express, process, and regulate emotions as well as recharge with renewed energy. This may improve not only the emotional state but also the cognitive functioning and the ability to be and connect socially.

In the next section, we present two case illustrations demonstrating the intentional use of playfulness as a coping strategy amid the extreme adversity of war.

Playfulness amidst a war: two case illustrations

A war typically involves large-scale violence, destruction, loss of life, displacement of populations, and significant psychological and social impacts on individuals and communities, frequently resulting in profound suffering, trauma, and enduring repercussions for both combatants and civilians (Murthy and Lakshminarayana 2006). War, therefore, is an extremely adverse condition that will be utilized here as a specific context to provide detailed examples illustrating the intentional use of playfulness as a coping strategy by soldiers amid the extreme adversity of war. The pairing of the situation of war and playfulness is difficult to comprehend. How is it possible to use lighthearted, humorous interactions when surrounded by death, destruction, and loss? However, the reviewed literature underscores the use of playfulness in extremely difficult situations. Through the lens of our PCS model, we will try to demonstrate and explain this possible paradox of playfulness in one of the most extreme adverse conditions. Specifically, we will describe two short video clips that were recorded and posted online by soldiers from Ukraine and Israel. We acknowledge the potential for controversy surrounding this topic, but we believe it is a phenomenon worthy of examination, irrespective of one's political perspective. Next we use the forgoing PCS theoretical model to frame the use of playfulness by soldiers during war.

Case one: "Don't Worry, Be Happy"

In the context of the ongoing Russia-Ukraine war (Waterhouse and Wright 2023), a 1.29-min video clip on YouTube shows the Ukraine military band playing the 1980s cheerful song "Don't

Worry, Be Happy" by Bobby McFerrin (https://tinyurl.com/casevign1). Military bands have a long history, dating back centuries, and have evolved alongside military organizations (Reily and Brucher 2013). They typically consist of skilled musicians who perform mainly in events that are steeped in tradition, honor, and remembrance, such as military funerals, memorial services, and commemorations of fallen soldiers. They play a wide range of music genres, including marches, patriotic tunes, classical pieces, and popular songs.

In the video clip presented here, a brass band consisting of five musicians stands in the middle of the street in front of a wall of sandbags, in what seems to be the midst of a war zone, playing this well-known cheerful song, in anticipation of the Russian offensive in Odessa, a seaport city on the Black Sea in southern Ukraine. The tone of the song is joyful, upbeat, and optimistic. It exudes a sense of light-heartedness and encourages listeners to let go of their worries and embrace a positive outlook on life. The melody is catchy, and the lyrics are simple, referring to everyday worries: not having a place to lay one's head, implying homelessness or financial instability; the burden of relationship problems, such as breakups or conflicts; and work-related stress and the pressure of responsibilities. Overall, the song's vibe is one of joy and contentment and feels almost like asking the audience to join and dance with the band.

The role of military bands is not only to promote national identity and foster a sense of pride and unity among service members and civilians alike but also to boost morale among troops. However, when performed by a military band in the context of war, this cheerful tone can seem discordant and out of place. In such contexts, the somber atmosphere and the gravity of the occasion contrast sharply with the carefree and lighthearted tone of "Don't Worry, Be Happy." The juxtaposition of this cheerful song with the solemnity of military events can create a sense of dissonance, highlighting the stark contrast between the realities of war and the desire for happiness, serving as a reminder of the complexities and contradictions inherent in human emotions and experiences, especially in times of adversity and loss.

The band's performance can be conceptualized as creating and being in a *space of playfulness*. The band's music is their use of the artistic form that marks the entrance and also the maintenance of the space of playfulness. Their music is being played in a social context as a group but also seems to aim at an audience, in addition to those who watch the recorded video on social media like YouTube (received to date 5.7k likes). This little performance in the midst of the war zone creates a world within a world, where the reality of the threat of war is momentarily suspended. In this sense, joyful music enables a momentary liberation from the adverse reality and, at the same time, the experience and expression of positive emotions such as enjoyment, amusement, and aliveness. The musicians seem to immerse themselves in the music, and it has an emotional quality of joy and flow. The players are both soldiers of the Ukrainian army anticipating a life-threatening attack, and also musicians playing cheerful music in the middle of the street. This dialectic position demonstrates the paradox of play that enables it to hold both realities and roles at the same time.

Case two: F·r·i·e·n·d·s

In a 44-s video clip (https://tinyurl.com/casevign2), an armed Israeli soldier and his mates are seen performing the opening title sequence of the 1990s cult series *Friends*. An empty three-seater white sofa is located in the middle of a rural landscape. The background music is "I'll Be There for You" by *The Rembrandts*, like in the series. There comes a soldier fully heavily equipped with his protective vest and weapon who sits on the left seat and then another who sits next to him, in the middle seat, expressing a silly smile. A third soldier also arrives (in addition to the weapon and the vest, he has a military radio on his back) and sits on the last free seat of the sofa, the one on the right. A fourth soldier enters, gets behind the sofa, and jumps. The video rapidly alternates frames, each showing the four soldiers shifting positions on the sofa. The frame changes and takes one of the soldiers spraying water from his mouth, with a reference to the same movement performed by the actor in the original song. The frame changes again, and the soldiers start playfully engaged in dancing to the music. One holds a hoe in his hand, while two soldiers move together playfully in a waltz-like dance. The frame changes, and there is a soldier who is spinning in a circus, dancing, waving a piece of worn-out white cloth in his hand with a joyful smile, representing the scarf shown in the song from the series. Then, two soldiers are filmed dancing opposite each other, one holding a hoe. The scene returns to the soldier dancing holding in his hand the piece of worn-out white cloth. Finally, the scene suddenly shifts, revealing the four soldiers standing behind the sofa, leaning against its back, with their backs to the camera.

In a newspaper article, one of the soldiers explained the following:

> We did a foot patrol …and when we finished, we came back to the cars and saw the sofa, and I said to myself, 'There's a sofa here and a nice view, let's do a segment.' My friends shared the idea with me, we danced, we laughed, and after 10 min of filming and 10 min of editing, the video came out. (Blum 2024).

The video clip can be conceptualized as being in a *space of playfulness*. The use of a well-known song from a popular television series serves as the artistic entrance to the space of playfulness. The video has a clear social context as the soldiers seem to enjoy the shared experience. The visual appearance of the soldiers and the scenery indicate that they are in the middle of a war zone. Still, their short performance seems to create a temporary liberation from their reality, and by agreeing to the suspension of reality, they can play with different roles (e.g., dancers), emotions and power dynamics. Dancing waltz together presents a joyful encounter that expresses a very different dynamic of roles than their military ones. They are in their roles as soldiers in the middle of a war, still holding on to their guns and their military radio, but at the same time, they immerse themselves in the here-and-now in the space of playfulness, being actors that imitate a famous opening scene from a television series. Hence, they experience being me and not me while making the video clip in the middle of a war situation. The entire clip has a very joyful and even humorous quality; for example, when one of the soldiers spills the water off his mouth. The clip ends when they all turn their back to the camera, similar to how the original clip ends. By doing so, they adhere to some artistic quality of the original clip and reinforce the framing of the *as-if* reality.

Implications for playfulness training

The literature reviewed above, together with the theoretical model and case illustrations, suggest that playfulness can be seen as a self-initiated state whereby individuals reclaim their autonomy to enter a space that is opposite to or contradicts the extreme adverse condition they are in. The study on playfulness points to individual differences in this area. Hence, for some people, playfulness may be more accessible as a personal resource, while for others, it is less available. Nonetheless, playfulness can be learned and practiced. For example, a six-month intervention with medical clowns in 13 different kindergartens for children with intellectual disabilities showed that a weekly practice of playful encounters resulted in significant improvements in all

dimensions of playfulness as measured by the *test of playfulness* (TOP; Bundy et al. 2001; Feniger-Schaal et al. 2023). Similar findings have also been reported in adults. For instance, Proyer et al. (2021) developed three separate self-administered interventions on playfulness (e.g., reflect and write down playful experiences you have had today), which were all found to generally improve participants' playfulness and well-being immediately after the intervention but also at a follow-up after 12 weeks. Moreover, Yonatan-Leus et al. (2020) highlighted playfulness as a malleable factor in psychotherapy. They demonstrated in a sample of 62 adult clients undergoing psychotherapy a significant increase in playfulness alongside measures of well-being. Notably, clients' therapy did not explicitly target but impacted playfulness, further evidencing the close association between playfulness and well-being (Yonatan-Leus et al. 2020).

By extension, playfulness has been discussed as a potential therapeutic factor specific to the creative arts therapies (de Witte et al. 2021; Orkibi and Keisari 2023). Creative arts therapies, which have been applied across clinical, educational, and community settings, are a form of psychotherapy situated within the intersection of arts and health (Orkibi and Keisari 2023). Specifically, drama therapy is based on theater and the performing arts that are intentionally used for therapeutic purposes (Feniger-Schaal and Orkibi 2020). Prominent conceptualizations of drama therapy emphasize the role of playfulness in therapy (Emunah and Ronning 2021; Johnson and Pitre 2021; Jones 1991). In fact, Frydman et al. (2022) recognized dramatic play, which they operationalized as a sense of experimentation, imagination, and spontaneity in the therapeutic process, as one of the most frequently reported core processes of drama therapy. Similarly, playfulness has repeatedly emerged as a prevalent experience for clients of drama therapy in qualitative research (Bradley et al. 2022; Cassidy et al. 2017; Constien et al. 2024; Keisari et al. 2020; Mondolfi and Pino-Juste 2020). Yet, there is still a lack of quantitative evidence regarding the role of playfulness in drama therapy and other therapeutic models, partly because, thus far, a measure assessing temporal shifts in playfulness (i.e., states of playfulness) is missing. Consequently, further research, such as outlined below, is needed to solidify and complement the extant evidence base of drama therapy specifically and playfulness generally.

Future research directions

A review of playfulness measurements reveals various tools for assessment. Lieberman (1965) pioneered child play assessment, focusing on physical, social, and cognitive spontaneity, joy, and humor. Barnett (1991) developed the Children's Playfulness Scale based on these dimensions. The Child Behaviours Inventory of Playfulness (Rogers et al. 1987 as cited in Trevlas et al. 2003) asks raters to assess children's behaviors. The Test of Playfulness (TOP; Bundy et al. 2001) evaluates children's playfulness through observation. For adults, Glynn and Webster (1992) first introduced The Adults Playfulness Scale, covering spontaneity, expressiveness, fun, creativity, and silliness. The Playfulness Scale for Adults (Schaefer and Greenberg 1997) only focuses on fun behaviors. The Adult Playfulness Trait Scale (Shen et al. 2014b) comprises fun-seeking motivation, uninhibitedness, and spontaneity, whereas Proyer (2012) created the unidimensional Short Measure of Adult Playfulness.

Nevertheless, all of these predominant tools, especially in the context of adults, measure playfulness as a trait; i.e., a stable predisposition, and are therefore not applicable to measuring a change in playfulness as a psychological state that can be honed through deliberate practice or training. Whereas trait measures assess general tendencies, state measures can capture momentary fluctuations in a given construct including those that may not be captured by trait assessments alone.

In line with the theoretical model proposed, future research efforts, both qualitative and quantitative, should concentrate on delineating various characteristics that encapsulate the psychological *state* of playfulness. These characteristics may include the ability to step into an imaginary reality and feel liberated and explorative of various roles and emotions; to hold the paradoxical position of being me and not me; to immerse in the here-and-now of the play and have a sense of flow and enjoyment. In the next step, these characteristics need to be defined and operationalized in a way that will enable the development of a playfulness-state-scale.

As our case illustrations suggest, individuals may use playfulness in external conditions that seem contradictory to the essence of playfulness. Creating a state measurement will enable to capture the temporary or transient aspects of playfulness that individuals experience in different contexts, allowing for a more comprehensive understanding of playfulness as a dynamic construct that is influenced by both internal and external factors. In addition, a state measure of playfulness can be particularly useful in studies examining the immediate effects of interventions or environmental manipulations on playfulness. In the context of therapeutic intervention, a state measurement of playfulness may serve to capture its role as a change process variable that has been theorized to account for a change in outcome variables (Orkibi and Keisari 2023; Versluys 2017). This marks new avenues for change process research that recently gained growing attention in the creative arts therapies (de Witte et al. 2021). Overall, a state measurement of playfulness can complement existing trait measures by providing a more nuanced understanding of individuals' playfulness, enabling researchers to better understand the dynamic nature of playfulness and its implications for well-being.

To empirically examine the proposed PCS model, future research can adopt a mixed methods approach, incorporating both quantitative and qualitative data. While studying stressed populations in naturalistic settings (e.g., soldiers, refugees, survivors of terror or natural disasters) can offer valuable ecological insights, using a controlled procedure such as the Trier Social Stress Test (TSST) is advantageous for a more scientifically rigorous examination. The TSST is a well-established laboratory procedure involving public speaking and mental arithmetic tasks that can reliably induce stress in participants (Allen et al. 2016).

In an experimental design, participants can be randomly assigned to one of three conditions: playful activity before the TSST, playful activity after the TSST, and a control condition receiving no intervention or a neutral activity. This randomization allows for a clear comparison of the effects of playful activities (state) at different stages of the stress process. Specifically, assigning some participants to experience playful activities before the TSST will help assess how pre-stress engagement influences stress responses, while those assigned to playful activities after the TSST will provide insights into how such activities affect stress recovery. The control group will establish a baseline for evaluating the impact of the playful activities, ensuring that any observed effects can be attributed to the intervention (the playfulness state) rather than extraneous factors.

Thus, this design allows for a robust evaluation of the playful activity's impact on both stress induction and recovery, enhancing the validity of the findings. Baseline stress levels can be measured using standardized questionnaires and physiological indicators such as cortisol levels and heart rate variability. Interpersonal movement and physiological synchronizations can also be measured as predictors of reduced stress (Richer et al. 2024; Zilcha-Mano 2024).

Based on the model, the playful activity will be designed to include various components of our suggested PCS model. This

includes creating a world within a world; exploring different feelings, roles (both "me" and "not me"), and power dynamics; being present in the moment (i.e., improvisation), and fostering flow and joy. Data analysis will involve both within- and between-subject analyses, as well as qualitative interviews to understand participants' subjective experiences and to further explore the perceived active ingredients in their playful experience.

In terms of individual differences, personality traits such as openness to experience and neuroticism can be measured, with the former examining an individual's willingness to engage in new and varied experiences and their propensity for creativity and curiosity, and the latter assessing emotional stability, tendencies toward anxiety, and vulnerability to stress. These traits, as measured by the Big-5 inventory (Soto and John 2017), as well as one's intolerance of ambiguity (Carleton et al. 2007) and creative adaptability (Orkibi 2021, 2023; Orkibi et al. 2024), can significantly influence how individuals respond to and benefit from playfulness as a coping strategy. Baseline mental health conditions and previous experiences with play should be considered to determine who benefits most from playfulness interventions by means of moderation analysis (Kazdin 2009).

Although the presented case illustrations suggest play to be a cross-cultural phenomenon, the role of culture in the study of playfulness remains largely unexplored (Proyer and Brauer, 2023). Playfulness has been studied in multiple countries, including the US (e.g., Clifford et al. 2022), Germany (e.g., Proyer 2017), China (e.g., Shen et al. 2021), and Australia (e.g., Farley et al. 2021). Yet, cross-cultural comparisons remain rare (Barnett 2007; Pang and Proyer 2018). Consequently, there is little evidence on how conceptualisations and expressions of playfulness differ across cultures. Pang and Proyer (2018), for instance, describe "being playful" as having more negative connotations in a Chinese compared to a Western context. Yet, in the same study, they note only few differences in scores on three different measures of playfulness between Chinese and German students (Pang and Proyer 2018). Further work is needed to establish how cultural norms impact the experience and expression of playfulness as well as the use of playfulness as a resource in times of adversity.

In addition, the level of adversity, whether chronic or acute, mild or severe, also may affects the utility of playfulness, and studies should stratify participants accordingly. Qualitative in-depth interviews can also provide contextual insights into the experiences of individuals from various cultural backgrounds and with different levels of adversity. Ethical considerations are crucial, particularly with vulnerable populations. Safeguards should include informed consent, cultural sensitivity, confidentiality, ethical review, and ongoing monitoring of participants' responses to the playfulness intervention. These measures ensure the PCS model's effectiveness is evaluated robustly and interventions remain both effective and ethically sound.

In summary, the use of playfulness in extreme adverse conditions presents a paradox where it is employed in contexts contrary to its usual essence of joy and lightheartedness. However, these instances underscore its potential to promote adjustment, adaptability, and overall well-being, serving as a psychological resource that could be cultivated in future intervention studies.

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The first and third authors contributed equally to the conception of this work, including conceptualization, research synthesis, and writing of the manuscript. The second author contributed to the literature synthesis and writing. All authors reviewed and approved the final version of this manuscript.

Competing interests

The authors declare no competing interests.

Ethical statement

Ethical approval was not required as the study did not involve any empirical data or human participants.

Informed consent

No informed concent was needed since there are no human participants in this study.

Additional information

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