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Play and games: Means to support emotional development

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9

Abstract

10 The present chapter examines the mechanisms through which play may contribute
11 to emotional development. First, we discuss different types of play that can be identified
12 across developmental stages. Second, we focus on the emotional benefits of play and its
13 potential role as a protective factor against the manifestation of psychopathologies. Next,
14 we specifically refer to the experience of positive emotions and to emotion regulation,
15 which are triggered in play, as key elements for adaptive emotional functioning.
16 Furthermore, we characterize board games as a particular type of play that holds powerful
17 learning value through their design and mechanics. Finally, we briefly summarize the first
18 study to date to examine theory-driven board games that were explicitly designed to
19 support emotional competences in school-age children.

20

21 *Keywords:* play, board games, emotional competences, positive emotions, emotion regulation

This chapter focuses on the idea that play is essential for emotional development. We highlight the benefits of play for emotional development and discuss the potential of board games as tools to train emotional competences and support children's adaptive functioning.

Play: definition and types

Play has been described as being considerably supportive of human development in various ways and in different domains (e.g., social, intellectual, emotional) at all ages (Eberle, 2014). Over the years, numerous conceptualizations of play have been formulated, highlighting its complex nature and the different perspectives from which it can be studied and understood (Eberle, 2014; Glenn, Knight, Holt, & Spence, 2013; Graham & Burghardt, 2010; Miller, 2017; Nicolopoulou, 1993; Van Vleet & Feeney, 2015). Play can be examined on at least two levels: an *intra-individual level*, focusing on individual psychological processes, and an *inter-individual level*, focusing on play as a social activity (Nicolopoulou, 1993). Despite the multiple theories, classifications, and different characteristics regarding its structure and function, one can notice that the term *play* is a dynamic concept, which changes with societal evolution (e.g., apparition of digital games; Etzel, 2010) and across development, from infancy to adulthood (Zosh et al., 2017). Moreover, multiple theories have consistently highlighted a set of characteristics inherent to play: positive emotions, intrinsic motivation, engagement and immersion, and a relaxed and safe environment (Burghardt, 2005; Hirsh-Pasek & Golinkoff, 2008; Krasnor & Pepler, 1980; Miller, 2017; Perry, Hogan, & Marlin, 2000; Zosh et al., 2017).

In Piaget's view (Nicolopoulou, 1993; Nijhof et al., 2018; Piaget, 1978), play evolves with the child's cognitive level from sensorimotor or practice play (up to around 18 months) to symbolic play (e.g., pretend or socio-dramatic play; emerging around 18 months), and, then, towards rule-based play (i.e., play with explicitly stated rules; emerging around 7 years old). From 2 to 6 years

of age, different types of play can be identified (Pellegrini & Smith, 1998; Whitebread et al., 2017): physical (locomotor; e.g., chase, rough-and-tumble play), object (e.g., puzzles, building blocks), language (e.g., repetitions, humorous rhymes), and pretend (i.e., role-playing in narrative sequences). Obviously, these types of play do not exclude each other: they can merge and be alternated depending on the individual's age, mood, preferences, and interests (Nijhof et al., 2018; Piaget, 1978). For instance, while playing with dolls (play with object), children may assign roles and create a narrative (pretend play). Given this overlap, neatly distinguishing different types of play and attributing them to a particular developmental stage is a difficult task for experts in the field.

One possible way of conceptualizing play is on a continuum from free play to rule-based play (e.g., card games, board games; Evaldsson & Corsaro, 1998; Piaget, 1978). In free play, rules might exist, but they are rather spontaneous, transient, implicit, and child-guided, whereas in games with rules, often designed by adults, they are explicit, unchangeable, and imposed (Hsu, 2006; Zosh et al., 2017). Most research concentrates on free play in children, especially on physical and pretend play. However, play behavior can be identified throughout adolescence and adulthood. These older ages are often neglected in research (Nicolopoulou, 1993; Van Vleet & Feeney, 2015), with the exception of digital games, which provide a rich and complex research area (e.g., in relation to addiction, violent or prosocial games; Connolly, Boyle, MacArthur, Hainey, & Boyle, 2012; Festl, Scharkow, & Quandt, 2013; Greitemeyer & Mügge, 2014; Maynard, Monk, & Booker, 2011).

Despite the non-exhaustive definition of play and the approach biased towards childhood, various lines of research have contributed to build a research field on play within the developmental framework. Play can still be easily recognized when one sees it, as it is universally

present and widely spread in humans' lives, holding important roles as a knowledge and skill transfer tool, bridging developmental stages and binding generations.

Benefits of Play

Play is not simply a fun activity that fills children's free time. In fact, play holds a crucial role during development and affords multiple benefits at all ages (Elkind, 2008; Ginsburg, 2007; Gray, 2011a; Hromek & Roffey, 2009; Piaget, 1951; Smith & Pellegrini, 2013; Vygotsky, 1966; Whitebread et al., 2017). It fuels development and accelerates various learning processes (Elkind, 2008; Perry et al., 2000). It has been argued that the competences required in play need to lie in the zone corresponding to a child's development (Perry et al., 2000). If the difficulty is too high, children will not engage in play or their play might take maladaptive forms with negative outcomes (e.g., violence, bullying; Brown, 2012; Cohen & Mendez, 2009; Smith & Pellegrini, 2013; Veiga, De Leng, et al., 2016). As such, play creates a zone of proximal development (ZPD; i.e., a zone slightly ahead of the development of psychological functions – originally referring to children's learning processes – that may stimulate the maturing of these functions), extending and shaping skills (Nicolopoulou, 1993; Veiga, Ketelaar, et al., 2016; Vygotsky, 1966).

Interestingly, play is considered as a primordial right (United Nations, 1989), constituting a buffer against the manifestation of physical and mental health pathologies (Gray, 2011a, 2013): For instance, it has been suggested that play can alleviate anxiety symptoms, or facilitate behavioral inhibition in attention deficit hyperactivity disorders (Li, Chung, Ho, & Kwok, 2016; Panksepp, 2007; Takis, 2018). It is therefore important to promote and use it to foster development.

Play deprivation, in particular deprivation of physical and outdoor play, can negatively impact physical (e.g., brain and muscle fiber development, weight gain), cognitive (e.g., problem-

solving), social (e.g., conflict resolution, social communication), and emotional (e.g., emotion regulation) development (Brown, 2012; Gray, 2011b; Lauer, 2011; Pellegrini & Smith, 1998).

As children grow, play is often cut back, devalued, and gradually replaced by work and other activities (Hirsh-Pasek & Golinkoff, 2008; Whitebread et al., 2017; Wohlwend & Peppler, 2015). The time children spend playing could be viewed as a function of age. For instance, researchers have found a decrease of almost 50% of the weekly number of hours engaged in play behaviour from pre-school age (3-5 years old children play approximately 17 hours per week) to school age (9-12 years old children play approximately 9 hours per week) (Hofferth, 2009; Hofferth & Sandberg, 2001). Moreover, it is thought that the general decline of play in society over recent decades may be linked to the increase in psychopathologies, including emotion-related disorders such as anxiety or depression (Bodrova, 2008; Gray, 2011a). Thus, play deprivation is a matter of high concern for authorities in charge of children's protection (e.g., medical staff, childcare and social workers), because it may hinder child development and adult functioning (Eberle, 2014; Lauer, 2011).

One particular domain to which play contributes significantly is emotional development. Play elicits a variety of emotions, both negative and positive (Gleave & Cole-Hamilton, 2012; Gray, 2013). Although the emotional benefits of play have been previously acknowledged (Howard, Miles, Rees-Davies, & Bertenshaw, 2017; Nicolopoulou, 1993), the mechanisms through which these benefits occur remain elusive, as well as which specific emotional competences may be acquired. Here, we aim to shed light on two key benefits that play may provide to the development of emotional competences. One obvious immediate benefit is the experience of positive emotions, which may have favorable and protective long-term effects on development (Krasnor & Pepler, 1980; Miller, 2017; Perry et al., 2000; Van Vleet & Feeney, 2015;

Zosh et al., 2017). A second important component may be exercising and fine-tuning several emotional competences during play, especially the regulation of both positive (e.g., amusement, interest, pride, satisfaction) and negative emotions (e.g., sadness, anger, frustration; LaFreniere, 2013; Van Vleet & Feeney, 2015).

Positive emotions at the heart of play

The experience of positive emotions is central in play and constitutes an intrinsic motivation for players to engage in this activity (Gray, 2011a, 2013; Sweetser & Wyeth, 2005). Positive emotions represent not only a reason for engaging in play, but also an objective. For example, interest is at the heart of play, and fun, joy, and amusement act as a reward reinforcing subsequent play behavior and exploration (Weber, 2003). Therefore, play is beneficial in the short term by reducing momentary stress and increasing individuals' well-being. Play may also have long-term benefits through repetition and practice supported by rewarding emotions. According to the broaden-and-build model (Fredrickson, 1998, 2001; Tugade, Fredrickson, & Feldman Barrett, 2004), positive emotions contribute to a broader mindset, creativity, and exploration. Consequently, these behaviors facilitate resource-building and promote resilience. Specifically, positive emotions may even be elicited while adhering to the rules and goal of a game (Gobet, de Voogt, & Retschitzki, 2004; Gray, 2013; Vygotsky, 1966). For instance, the main goal of many board games is often to compete against others or against the game to eventually win while having fun and experiencing pleasure. In this regard, play elicits positive achievement emotions that are both *activity-related* (e.g., enjoyment, pleasure) and *outcome-related* (e.g., joy, hope, pride, gratitude, relief), as it can be extrapolated from the Control-Value theory of achievement emotions (see chapter PEKRUN, this volume; Pekrun, 2006). Players are motivated, not only to have fun

and enjoy pleasant moments with their peers, but also to perform at their best in order to improve their skills and ultimately to win, acquire mastery, and self-confidence (Perry et al., 2000).

I play, therefore I regulate emotions

Emotion regulation is presumed to be a primary function of play, transcending all forms of play (Dillon, 2009; LaFreniere, 2013; Schaefer & Drewes, 2014). Emotion regulation can generally be described as the processes through which people monitor, evaluate, and influence the emotions they experience, and how they express them (Gross, 1998; Thompson, 1994). Both positive and negative emotions occurring during play need to be regulated in some fashion (i.e., downregulated, maintained, or upregulated) to carry on the activity. Although the role of positive emotions in play is well documented in the literature, the role of negative emotions (e.g., frustration, anger, boredom, fear of being laughed at or fear of losing) remains under-researched. In the field of video games, researchers have highlighted the importance of experiencing and regulating negative emotions (Lobel, 2016), which may also be relevant in other forms of play.

Next, we further develop how play can be considered as a safe context providing opportunities to use and practice emotion regulation skills, or as a form of emotion regulation.

First, play may offer opportunities to learn how to regulate: moderate amounts of negative emotion are induced and need to be regulated in order to sustain the activity and teach individuals to adapt to unexpected and unpleasant events (Flanders et al., 2010; Gray, 2013) and to handle social interaction characteristics such as teasing and sportsmanship (Burghardt, 2005; Hromek & Roffey, 2009; Schaefer & Drewes, 2014). Play provides a dynamic setting in which players continuously exchange information and adjust their emotions depending on the course of play. A player could use emotion regulation to show appropriate reactions to winning or losing so that the relationship with other players is preserved, or to modify other players' behaviors to maintain

suspense or cover up their next move. Furthermore, play provides an opportunity to learn from others by observing how they express and regulate emotions.

In free play, young mammals and children engaging in rough-and-tumble or chase deliberately put themselves into moderately risky and stressful situations (see chapter VEIGA, this volume). By doing so, they actively practice regulating their fear at an intensity which is challenging, but still manageable. Children engaging in pretend or rule-based play learn to act contrary to their will and immediate impulses in order to follow the rules (Vygotsky, 1966). One might also need to deal with their own emotions while respecting or defying the game rules and its flow: turn-taking, cheating or bluffing, increased difficulty level, or time pressure. In this safe environment of play, individuals challenge themselves by creating situations of high arousal and vulnerability, experience thrill (as a combination of fear and joy), and are allowed to withdraw at any moment if the emotional or physical challenge is too high (Gray, 2013; LaFreniere, 2013). We could therefore argue that the fictional worlds and objects generated in play prepare the individual to face future life events while eliciting “real” emotions, very similar to the ones experienced in non-playful contexts of daily life, which certain experts refer to as *quasi emotions* (e.g., emotions generated by fiction, such as movies and books; Cova & Friend, n.d.; Saatela, 1994). Although some studies show that pretend play is positively associated to emotion regulation skills in children, more research is required to better understand how play and emotion regulation are specifically intertwined (see Lillard et al., 2013; Whitebread et al., 2017).

Second, play may help to regulate negative emotions that have previously been experienced in “real” life and substitute them with positive ones. In line with these assumptions, it is stipulated that play holds a cathartic function (Freud, 1961; Menninger, 1942; Saracho & Spodek, 1995). For example, during pretend play, it has been suggested that children repeatedly re-enact stressful and

unpleasant experiences while in a safe space, gaining a sense of control over the situation and their emotions (Verenikina, Harris, & Lysaght, 2003). Such practice may help children improve the use of reappraisal (i.e., reinterpretation of the emotion-eliciting situation to alter its emotional impact; Gross, 1998) by considering the distressing event from a playful point of view and by imagining positive consequences.

Finally, play itself can be seen as a form of emotion regulation, tapping into different categories of emotion regulation strategies (see Gross, 1998): situation selection (e.g., selecting or approaching play to up-regulate positive emotions or to avoid unpleasant activities), attentional deployment (i.e., diverting attention away from negative stimuli or stressful situations), or response modulation (e.g., venting anger). On one hand, play has the potential to increase positive emotions while indirectly reducing negative emotions. For example, pretend play or role-playing digital, board or app-assisted games (e.g., World of Warcraft, Dungeons and Dragons, Mansions of Madness) can offer alternative realities in which one can “escape” and temporarily forget about worries (Granic, Lobel, & Engels, 2014; Gray, 2013). On the other hand, play has also the potential to increase negative emotions. The paradox of negative emotions and sensation-seeking may explain the engagement in forms of play eliciting negative emotions, although in “real” life we tend to avoid them (see Cova & Friend, n.d.). For instance, video game players are drawn to and strive to up-regulate negative emotions, such as disgust or shock, as these can then switch to positive emotions, such as amusement and excitement (Cova & Friend, n.d.; Lazzaro, 2004).

However, some forms of play have also the potential to lead to detrimental outcomes. For example, certain types of solitary play in children can be linked to socio-emotional difficulties (Veiga, Ketelaar, et al., 2016). Excessive gaming can lead to behavioral addictions such as for video gaming (Grüsser, Thalemann, & Griffiths, 2007) or for gambling. Individuals with gambling

disorders use gambling to up-regulate positive rewarding emotions such as thrill and excitement, to escape from anxiety and stress, or to modify boredom (Rogier & Velotti, 2018). It is therefore important to consider the turning point of play from adaptive to maladaptive emotion regulation (Granic et al., 2014).

In addition, it has been suggested that play can be also used as a form of interpersonal emotion regulation during social interactions (Zaki, 2020). For example, parent-child dyads and romantic couples (Keltner, Capps, Kring, Young, & Heerey, 2001; Miyazaki, 2004; Zaki, 2020) may engage in play using teasing (e.g., tickling, peek-a-boo, use of repetitive and humorous phrases or nicknames) in order to increase fun or amusement, or to distract the other from an unpleasant or stressful event. Once again, this particular form of play might sometimes slip into maladaptive behavior if becomes one-sided and transforms into bullying or harassment, with the intention to increase negative emotions in others (Burghardt, 2005; Zaki, 2020).

A particular type of play: Board Games

Board games involve a particular type of play eliciting emotions and requiring emotion regulation skills. There is little consensus about how to define board games, in spite of several attempts. In this chapter, we define board games as a socially interactive rule-based form of play, with an incorporated theme, including one or more physical component (e.g., boards, cards, dice), in which actions are limited by rules and influenced by a certain amount of unpredictability, and in which the end is determined by the achievement of a goal¹ (Chircop, 2017; Dillon, 2009; Gobet et al., 2004; Hays, 2005). It has been argued that board games can be used as tools to foster behavioral changes and to facilitate learning in an enjoyable manner and in various settings, such

¹Based on this view, board games refer here to social non-digital games, whether they include a board or not, but which use a tabletop setting with two or more players. As such, card games, dice games, and any games using tokens that do not require a physical board are also considered as board games.

as in school contexts, in social and emotional learning (SEL) programs (see chapter MAXWELL, this volume), and in therapy (Hromek & Roffey, 2009; Matorin & McNamara, 1996). They have also the potential to accelerate skill development and help improve regulative and social skills (Hawkinson, 2013; Salmina & Tihanova, 2011; Treher, 2011). Although more research is required to confirm this, it has been shown that educational games lead to positive behavioral changes in a variety of areas, especially those related to health (e.g., tobacco use, sexual health, nutrition) and social behavior (e.g., bullying) (for review, see: Gauthier et al., 2019a; Nakao, 2019; Noda, Shiotsuki, & Nakao, 2019).

Such promising effects of board game-based interventions may be due to certain characteristics of board games. Board games can be appealing, stimulate communication, and relieve tension (Breen & Daigneault, 1998; Clary, 1991). Group discussions emerging during gameplay can help individuals gain insight into their difficulties and facilitate discussions around sensitive topics using a positive and fun frame, and can provide opportunities to approach emotion-related topics that may be difficult to access using traditional methods (Bruneau & Protivnak, 2012; Matorin & McNamara, 1996; van der Stege, van Staa, Hilberink, & Visser, 2010; Wiener, Battles, Mamalian, & Zadeh, 2011). Moreover, games tend to be inclusive, relatively inexpensive tools, easy to implement and adapt to the target public and to different settings, such as school, family, or therapy (Lennon & Coombs, 2007; Matorin & McNamara, 1996).

However, several experts (e.g., Catalano, Luccini, & Mortara, 2014; Gobet et al., 2004; Hromek & Roffey, 2009; Lennon & Coombs, 2007; Nakao, 2019) have highlighted that methodologically sound research designed to test the impact of board games on emotional competences is scarce. In our view, board games could be optimal tools to teach and train adaptive behavior, including emotional competences, in children, adolescents, and adults. To achieve these

goals, games should incorporate different difficulty levels, which should be carefully calibrated to correspond to the player's ZPD. Theoretically, playing games on a difficulty level slightly above the individual's level of emotional competences should stimulate players' emotional development, building upon already existing competences and training new ones. This idea aligns with the game flow model (Sweetser & Wyeth, 2005), which refers to the fact that games should challenge the players at an appropriate level matched to their skills, while maintaining players' positive emotions of interest and enjoyment. Importantly, since the game experience will help to reach the learning goals (e.g., acquire knowledge about a certain topic, train a specific skill), it is important to find the right balance between the player-based dynamics (e.g., skills, knowledge) and game-based dynamics (e.g., mechanics; Hawkinson, 2013).

The mechanics underlying a board game (e.g., turn-taking, point-scoring) contribute to its interactivity and each player's game experience (Hawkinson, 2013). Many educational games designed for behavioral change use particular types of game mechanics such as question-and-answer or trivia (Gauthier et al., 2019b). This might be useful to convey knowledge, but not necessarily to maintain interest and to train competences. To do this, researchers advise to integrate adaptive behavioral patterns into the game design in an action-consequence learning style (Gauthier et al., 2019b). Players should then be able to actively apply the competences in order to make progress in gameplay and experience immediate reward when the target behavior emerges. Not only should game designers and educators collaborate, but also initiators of such projects should rely on sound psychological theories and integrate learning-based processes within game mechanics such as trial-and-error and immediate feedback (e.g., win or lose points) (Catalano et al., 2014; Mega, Ronconi, & De Beni, 2014; Wohlwend & Peppler, 2015).

Some guidelines for conducting research on games exist, but they are mostly emerging from the video game literature (Catalano et al., 2014; Granic et al., 2014; Kemple, 2014). However, based on previous work on video and board games (Azmi et al., 2016; Gauthier et al., 2019b; Hays, 2005), we have identified certain research guidelines that could be applicable to designing and testing board games:

(A) Test the quality criteria for game mechanics and feasibility. Possible measures include intrinsic motivation, positive emotions, immersion, and flow (see Dell'Angela et al., 2020).

(B) Compare specific effects of games to conventional interventions (not involving games) using a randomized control trial. Game specific effects on outcome measures (e.g., emotional competences) should be assessed with sufficiently large samples and adequate control groups. For example, a control group playing traditional games without embedded emotional competence training can help disentangle general effects of play from effects of the specifically designed games on outcome measures. In addition, a control group receiving conventional teaching/intervention about the competences can clarify the benefits of games.

(C) Assess long-term effects in interventional designs using follow-up measures to examine the stability of the effects and of the stipulated benefits. The trained competences should be assessed in order to measure the differences between pre-test (baseline), post-test and follow-up measures.

(D) Verify the generalizability of learned skills to various real-life situations or settings: home, school, peer interactions. Direct measures, such as diaries, ecological momentary assessments (Moskowitz & Young, 2006; Stone et al., 2019) and indirect measures, such as teachers' observations (e.g., classroom climate, absenteeism) are recommended and would help maximize the ecological validity of the findings.

(E) Test the use of the game in different settings (educational, therapeutic; stand-alone, or part of a program). Instructions on how to use the game in different settings should be specified, along with the trained competences, the developmental stage, and the degree of adult scaffolding required.

Board Games Focused on Emotional Competences

Although we have identified several studies using board games to train different competences, the research in this field is still nascent, especially concerning the links to emotion. To our knowledge, no study to date has examined board games specifically focusing on the improvement of emotional competences. Although certain commercially available games might implicitly tap into emotional competences, their goal remains tangential to learning (Hassinger-Das et al., 2017). We therefore suggest a type of board game holding a targeted learning goal, marrying the educational content to the game design (Hassinger-Das et al., 2017). Such board games could answer the needs emphasized by educational policy makers: teaching emotional competences to students in a playful way. Only recently were emotional competences officially recognized as an important educational outcome, but the work necessary to perform this requires valid material and rigorous preparation (Rawolle, 2013). In this regard, Dell'Angela and colleagues (2020) have designed board games focusing on emotional competences (i.e., emotion recognition, differentiation, and regulation) and tested their feasibility with school children (aged from 8 to 12 years old). While the results did not reveal any significant difference between the board games focused on emotional competences and the commercially available games in terms of game experience (e.g., all games seemed to have similar patterns in terms of inducing high positive emotions and high immersion), the new board games triggered the intended emotional competences. Most importantly, and in line with the ZPD and game flow theories, the children's

emotional competences predicted the perceived game experience (e.g., children who showed higher performance in an emotion recognition task rated the emotion recognition game less difficult and invested less effort during gameplay). This suggests that such board games could challenge individuals who have more difficulties with a specific emotion competence to implement their skills. Future research is required to test the potential of these board games focused on emotional competences as tools to promote emotional competences using interventional and follow-up study designs.

Conclusion

In this chapter we have emphasized the different mechanisms through which play may facilitate valuable opportunities to support emotional development. Play may represent an experiment mirroring real-life events (e.g., negotiation, problem-solving, dealing with rejection and loss, competition, cooperation), which players of all ages can approach and explore in a safe way. Positive emotions experienced in play pave the way for well-being, broaden the individual's behavioral repertoires and build new resources (Fredrickson, 2004; Garland et al., 2010; Tugade & Fredrickson, 2007). Conversely, negative emotions elicited during play can provide opportunities to implement and practice emotion regulation skills. Traditionally, the conceptualization of play functions has centered on the alleviation of negative emotions and the elicitation of positive ones. Nevertheless, play activates various emotional states that can be maintained, upregulated, or downregulated, independently of their valence. In addition, we have highlighted the bi-directional link between play and emotion regulation: on one hand, play may implicitly lead to the enhancement of the emotion regulation skills and, on the other, the engagement in the emotion regulation process may lead to the use of play as a strategy to regulate one's own emotions. Furthermore, we have drawn attention to the potential of board games to

338 promote emotional competences. Although research in this area continues to develop, promising
339 evidence exists supporting the idea that board games could constitute learning tools that may be
340 used to implicitly teach and train adaptive functioning. Our own research on this topic suggests
341 that trait emotional competences are linked to game experience in board games focused on using
342 specific emotional competences. We suggest that such board games can provide opportunities to
343 shape players' socio-emotional skills. Although merging content to game structure may be
344 challenging for both designers and educators, the promise represented by such games presents a
345 fascinating opportunity to encourage transmission of knowledge and the training of targeted
346 competences in an interactive and appealing way.

347

348 **Biography**

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359 **Linda Dell'Angela** obtained her master in clinical and affective psychology, during which she
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361 **David Sander** is full professor at the University of Geneva where he directs the Laboratory for
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364 mechanisms modulate attention, memory, and decision-making.

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