Play, Flow, and Timelessness

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Abstract and Keywords

Over the last 3 decades, work culture has profoundly reconceptualized play as a creativity stimulant and as a core element of workplace social life. During the early wave of this transition in the 1980s, some organizations merely tolerated employees' spontaneous playful behaviors, but more recently, a growing number of organizations have deliberately institutionalized specific forms of play as integral to their culture to enhance work practices and creativity. Organizational research has closely followed these developments with an increasing number of studies focusing on workplace play and two closely related concepts, flow and timelessness. This chapter reviews the latest empirical and conceptual advancements in research about play, flow, and timelessness in organizational settings and how they relate to creativity, innovation, and entrepreneurship.

Keywords: play, playfulness, flow, timelessness, creativity, innovation, entrepreneurship, work culture

Introduction

1. I have an active fantasy life.
2. I have a very active imagination.
3. I try to keep all my thoughts directed along realistic lines and avoid flights of fancy. [reverse scored]
4. I don't like to waste my time daydreaming. [reverse scored]
5. I take too much time fantasizing or daydreaming instead of working.

The five scale items listed above tap a region of the concept of playfulness, albeit with different intentions. The first four items appeared in Costa and MacRae's (1992) fantasy scale (a facet of openness to experience), which has shown positive associations with employee creativity (e.g., George & Zhou, 2001; Taggar, 2002). The fifth item appeared in Bennett and Robinson's (2000) organizational deviance scale along with other items that refer to such negative behaviors as stealing, forging, loafing, littering, and using illegal drugs while at work. The sharp contrast between linking playfulness to creativity and to deviance highlights how divided and perplexed contemporary work culture is about play.

A century ago, when creativity was rarely seen as a desirable work behavior (Davis, 1963; Kilbourne & Woodman, 1999), organizations uniformly perceived play as a feeble and illegitimate behavior that had no place in the world of work (March, 1976; Sandelands, 1988). However, with the advent of the knowledge economy has come a significant re-evaluation of creativity, which is now seen as a desirable work behavior (DeFillippi, Grabher, & Jones, 2007; Shalley & Gilson, 2004). This, in turn, has allowed play to slowly but vividly infiltrate the values and practices of an increasing number of organizations (Mainemelis & Ronson, 2006). As is often the case in studying human behavior during cultural transitions, play researchers have found contrasting perceptions across work organizations, in which play is perceived as creative, deviant, or a mixture of both.

(p. 122) For several decades, research on play in organizations has been limited, fragmented, and dispersed across time and thematic areas. In recent years, many authors have stressed the need for a more methodical and systematic examination of play behaviors in the workplace (e.g., Mainemelis & Altman, 2010; Mainemelis & Ronson, 2006; Sandelands, 2010; Statler, Heracleous, & Jacobs, 2011; Statler, Roos, & Victor, 2009). Mainemelis and Ronson (2006) proposed a theory about play and creativity in organizations by integrating insights from more than 150 multidisciplinary studies published before 2006. In this chapter, we examine conceptual and empirical contributions to the organizational literature on play published between 2005 and 2013.

We first examine research on the global concept of play, and we then focus on two more narrowly defined playful experiences, being in flow and sensing timelessness. Play is a very broad construct that is manifested in multiple ways and at variable levels of analysis and intensity. The constructs of flow and timelessness, on the other hand, are two more narrowly defined play states. Flow and timelessness entail the formal elements of the global play construct, but they also entail additional elements known to be experienced in these two states. In addition, unlike other forms of play that are passive or contemplative, flow and timelessness are active, energetic, and skill-focused play states. Between the two constructs, flow is broader, entails more formal elements, and has more variable levels of intensity, whereas timelessness is more narrowly defined, has fewer formal elements, and is experienced at the more intense levels of the flow state.

Play

Although definitional debates about play persist, the interdisciplinary literature substantially agrees that play is not a set of activities but a way of organizing behavior in relation to an activity. Integrating previous conceptualizations, Mainemelis and Ronson (2006) defined play as a behavioral orientation consisting of five qualities that are superimposed on most human activities:

1. *A threshold experience.* Between-and-betwixt convention and illusion, the inner and the outer, the old and the new, or the true and the false, play is accompanied by a unique threshold awareness that sets it apart from life as usual and triggers the willful suspension of disbelief.
2. *Boundaries in time and space.* Play is circumscribed within physical, social, and psychological limits in time and space. These temporal and spatial boundaries separate play from normal life and legitimize undesirable, unexpected, or repressed social roles and behaviors.
3. *Uncertainty–freedom constraint.* Most forms of play involve some type of uncertainty or unresolved possibility. Play is also relatively free from external constraints, such that participants are allowed a considerable degree of freedom to manipulate processes and assume new identities and roles, while at the same time play imposes its own internal constraints, which are determined or voluntarily accepted by the players themselves.
4. *Loose and flexible association between means and ends*. Regardless of the presence or absence of goals and the degree of rationality that it may or may not have, play is not motivated by the search for efficient means to satisfy a fixed goal in a reliable way. A defining element of play is the flexible manner by which means and ends are handled.
5. *Positive affect*. Play involves positive affect that varies in its degree of intensity and complexity. Play involves positive and negative emotions, and cognitive and emotional elements, but it generally results in some form of positive affect, be it fun, relaxation, ecstatic joy, or emotional relief.

The more each of these elements is present, the more play-like the activity becomes. In its most intense forms, play involves a circular interaction among the five elements. Moreover, this set of five elements is manifested in various forms of play, such as solitary play and social play, free play and structured games, as well as specific activities aimed at inducing play (e.g., simulations, virtualization, gamification, free time, crowdsourcing, blue-sky projects). Mainemelis and Ronson (2006) suggested that play is manifested in organizational behavior in two general forms: as a form of *engagement* with work tasks (playing with one's core work) or as a form of *diversion* (playing with non-work elements in the work context). They argued that both manifestations of play foster creativity, albeit in different ways.

Play as engagement fosters creativity directly by facilitating creativity-related *cognitive processes* (e.g., problem framing, divergent thinking, mental transformations, practice with alternative solutions, evaluative ability); *affective*

processes (e.g., affective pleasure in facing a challenge, openness to affective states, emotional modulation of both positive and (p. 123) negative emotions, access to affect-laden thoughts); and *intrinsic task motivation*. Play as engagement also sharpens and develops *domain-related* and *creativity skills* that foster creativity (Amabile, 1996). Diversionary play, on the other hand, facilitates creativity indirectly by promoting *psychological adjustment* (e.g., restoratory and compensatory functions) and by shaping a *supportive social context* (e.g., psychological safety, social networks, culture). More recent studies (reviewed later in this chapter) have suggested that engagement play and diversionary play may also promote or otherwise be related to innovation and entrepreneurship. Last but not least, Mainemelis and Ronson (2006) proposed that *job complexity, lack of environmental threat,* and *available time and space for play* are key organizational conditions for nurturing play in the work context. Next, we examine recent research on play as engagement and play as diversion.

Play As Engagement

Oliver and Ashley (2012) analyzed 120 interviews with advertising agency directors published in *The Wall Street Journal's* "Creative Leaders" series between 1977 and 2007. They found that ad agency directors believe that a playful work environment is important for stimulating the creative process, preventing burnout, and maintaining an energy-charged social climate. In addition, Oliver and Ashley noted (p. 340):

> One difference over time is that the later interviews suggested more tools and environmental design factors for implementing the fun environment, whereas the earlier interviews alluded to fun and energy that came from people who were passionate about work. The change in the interviews may reflect a shift in culture or it may simply reflect a shift in the social acceptance of actively playing within the work environment.

Oliver and Ashley's (2012) statement corroborates our observation that recent studies in the field have focused less on describing the general tolerance that organizations increasingly show toward play and more on analyzing specific practices that organizations employ in an attempt to institutionalize play. Two recent conceptual contributions to the field stress that an important aspect of playful organizational practices (e.g., virtualization, blue-sky projects, crowdsourcing competitions, serious play interventions, simulations, storytelling) is that they delineate social forms of play, not solitary play activities.

Sandelands (2010) observed that play is not about individuals but about the whole of the human community. He suggested that five mystifying elements of play—attraction, synchrony, merger, selflessness, and unserious seriousness—conjure a transpersonal social whole and a dynamic of creating new social forms and new social arrangements. Statler et al. (2011) also argued that serious play practices and interventions should be seen as collective organizational practices that are induced when the paradox of intentionality arises: "where people engage in playful behaviors deliberately with the intention to achieve work-related objectives" (p. 237).

Andriopoulos and Gotsi (2005) examined the functions of blue-sky projects in a product design and engineering consultancy firm in Northern California. Because such firms operate under constant pressure to perpetually present their clients with novel, distinctive solutions, they must, on the one hand, imagine and define the future instead of merely anticipating it and on the other hand, keep the risks and failures associated with wildly imagining the future internal to the organization, so that they will have no impact on their client's business. The consultancy tackled this dual challenge through so-called moonshine projects: blue-sky projects regularly used to unleash employees' imagination and promote creative freedom—with no design boundaries, no client specifications, no predefined budgets, and no competitive products to consider. Andriopoulos and Gotsi found that this playful work practice enhanced creative thinking, generated new knowledge, broke down stereotypes, enhanced employee morale and satisfaction, and built a visionary reputation for the organization. According to the company's president (p. 320):

> In these Moonshine things we can take risks and do things that our clients might never accept. You do experimental things and you are open to failure. Like, "Oh, well, we thought it would be a cool thing but it's just a failure." We can't do that to a client, they come to us because they need to have a successful product.

Andriopoulos and Gotsi (2005) observed that blue-sky projects foster creativity but also entail a hidden danger, because as employees become passionately involved in them, they may start to regard other, less playful work

tasks as mundane. Andriopoulos and Gotsi suggested that managers can prevent this problem by stressing the strategic fit and functional integration of blue-sky (p. 124) projects in the larger work context. Zhang and Bartol (2010) found that although creative process engagement is positively related to creative performance, the relationship between creative process engagement and overall job performance has an inverted U-shaped pattern. Future research can examine whether the hidden danger found by Andriopoulos and Gotsi contributes to this effect. Given that play is more likely to occur in creative rather than mundane work tasks (Mainemelis & Ronson, 2006), its seductive elements may lead people to focus excessively on creative tasks and even ignore orders to stop working on them (Mainemelis, 2010). For example, Mainemelis and Epitropaki (2013) wrote that during the making of *The Godfather*, Francis Ford Coppola's passion for the most creative aspects of filmmaking resulted in exceptionally high levels of collective creative performance but also in missed deadlines, budget overruns, and social havoc on the film's set.

Free time, a legitimate proportion of employees' work time in which they can playfully pursue ideas of their own choice, has long been adopted by companies such as 3M and Gore (Mainemelis & Ronson, 2006). Iyer and Davenport (2008) noted that in a 6-month period, the 20% discretionary work time at Google resulted in half of all new products and features, including Gmail, AdSense, and Google News. However, they also observed that some Google engineers experienced an inherent pressure to invent something innovative in their discretionary time. This is a second hidden danger in practices that attempt to stimulate play as engagement: They may be insufficiently shielded from the normal managerial pressures for efficiency, accountability, and control, a situation that hinders play and may even trigger cynicism and resentment among employees (Walker, 2011).

A useful reminder here is that play does not reside in the practices organizations institutionalize in order to promote play, but rather in the intersubjective understandings of the individuals who ultimately play or do not play within the time and space delineated by these practices (Hjorth, 2005; Mainemelis & Ronson, 2006; Sandelands, 2010). A fruitful direction for future research is examination of the social and psychological factors that increase or decrease the likelihood that work practices aimed at promoting play as engagement actually fulfill their mission.

In an in-depth case study, Dodgson, Gann, and Phillips (2013) explored the introduction of play through virtualization technologies into a large and historical organization at the turn of the third millennium (pp. 1366–1367):

> IBM couched its use of virtual worlds in terms of encouraging play. This in itself was not uncontroversial. IBM's bureaucratic culture in the early 1990s impeded its ability to explore new fields and adapt . . . and such a culture would not easily embrace playfulness. . . . Virtual worlds were nonetheless recognized in IBM as a technology that facilitates play, including those activities where people experiment, explore, prototype, rehearse, and tinker with new ideas, often in combination with others with different skills. The company developed a virtual world strategy document in 2007 that acknowledged this; it referred to the importance of collaboration, learning, and play. Through its use, the company recognized that virtual worlds provided a space where experimentation is relatively quick and inexpensive and where activities are built upon the copresence of many people from diverse backgrounds. They also conveyed fun and enjoyment and allowed the cocreation and codevelopment of new ideas assisted by their visual representation.

Among other findings, Dodgson et al. captured three critical steps in the introduction of play at IBM, which might generalize to some extent to other large organizations attempting to foster play. The first was a set of influential reports on innovative developments in games which "helped elicit senior management's endorsement for their use" (p. 1367). The second was the growing awareness among IBM employees that virtual worlds enhance collaboration and innovation in novel ways. The third was the interplay among uncertainty, freedom, and constraint in the evolution of virtual worlds over time (pp. 1368–1369):

> [To] overcome some of the risks involved in exploring an unknown technology, several of IBM's researchers created promotional roles, including those of "intraverse evangelists," who were to promote and support the use of virtual worlds within IBM, and "metaverse evangelists," who would promote virtual worlds externally; one researcher adopted the persona of "ePredator," inhabiting Second Life with the goal of establishing good behavior. This concern for appropriate behavior led to the development of a code of conduct and etiquette guidelines for use by all IBM staff working in virtual worlds. As one of the initiators of

> the VUC said, "The rules of play, (p. 125) these are the virtual world guidelines developed by those using the system, and the measures of value are increase in profits, decrease in overload, and improved employee experience."

Crowdsourcing is another practice that has recently been linked to play. Afuah and Tucci (2012) suggested that, under certain conditions, crowdsourcing offers a better alternative to distant search and creative problem solving than the alternatives of do-it-yourself or designated contracting. Gratton (2011) noted that crowdsourcing allows organizations to expand their circle of play, with sources of ideas that extend far beyond their boundaries, and that play builds social connections in highly diverse big ideas crowds. Witt, Scheiner, and Robra-Bissantz (2011) proposed that online idea competitions (a form of crowdsourcing) can be enhanced by incorporating play elements. In an exploratory study, they found that if the gamification of idea competitions is properly planned, it can contribute to participants' task involvement, enjoyment, and flow experiences. Their study participants reported being immersed in the idea competition, felt that time passed quickly, were not easily distracted, and felt content when developing new ideas. A promising direction for future research is the examination of whether, how, and when play elements and playful experiences such as flow and timelessness can improve the experiential and practical outcomes of crowdsourcing.

Heracleous and Jacobs (2008) examined the crafting of physical symbols during strategy team retreats of telecommunications organizations. They operationalized these symbol artifacts as embodied metaphors constructed through the engagement of the body. Unlike cognitive maps, these symbols are tangible entities that extend into three-dimensional space: "They are metaphors in the flesh that are recursively and simultaneously constructed and interpreted, embodying the blending of source and target domains, and engendering meaning both in their construction process and their subsequent interpretations" (p. 313). Analyzing video data, Heracleous and Jacobs found that these embodied metaphors (1) prompted strategy team members to identify general assumptions and critically reflect on them, (2) helped participants capture intangible elements of their collective identity, and (3) triggered creative insights and potential shifts in managerial mindsets. They also noted that, due to their exploratory and highly divergent nature, such forms of playful intervention are more valuable in the early stages of strategy formation or in the strategy review process, where creativity is more important.

Thorsted (2013) reported that the toy maker LEGO (from the Danish *leg godt,* meaning "play well") uses games that create an understanding of internal organizational logistics and also strengthen corporate culture but do not necessarily support creative processes. She argued that play becomes a significant social event only when it transforms communities of practice into communities of players characterized by autonomy, intense personal relatedness, acceptance of ambiguity, and suspension of normal hierarchical roles. Thorsted's study prompts researchers to pay close attention to whether play directly fosters creativity, supports it indirectly, or promotes other outcomes not related to creativity. Two equally important issues that merit more research in the future are the ways in which play influences different stages of creativity and innovation and the levels of analysis at which play achieves its effects.

Schlachtbauer (2013) suggested that play affects the initial development of innovation ideas, the elaboration of these ideas into an innovation concept, and the evaluation and acceptance of an innovation concept. In a study of a German car manufacturer, he observed that the innovation concepts that finally made it to the company's management conference were not those that were generated in brainstorming sessions; rather, they originated from a bootlegging project that was developed between one employee of the company and employees of a university, "at which the idea could evolved and mature" (p. 161). Schlachtbauer suggested that play creates the free space that ideas need in order to grow and become interesting innovation candidates. This implies that play can aid innovation not only in terms of idea generation but also in terms of idea elaboration and possibly idea evaluation and acceptance.

Similarly, in a study of radical design projects in fire engineering, Dodgson, Gann, and Salter (2007) found that simulation technologies fostered innovation by serving as boundary objects that facilitate novel relations in interorganizational projects, by enabling experimentation that would often be physically impossible or prohibitively expensive to undertake in reality, and also by encouraging buying in and ownership of designs in multiple parties.

Cohendet and Simon's (2007) qualitative study of a videogame firm in Montreal sheds light on how play may affect creativity and innovation at (p. 126) different levels of analysis. They observed that the specialists involved in the

development of videogames were gamers making games for gamers: For them, playing was a means for identifying with a community, sharing a common language, establishing a dialogue with the elusive casual gamer, and also enhancing their personal creativity. Product-level creativity was not an additive function of the personal creativity of specialists but relied instead on "a subtle alchemy among communities of scriptwriters, game-designers, graphic artists, sound designers, software programmers and even testers" (p. 591). Cohendet and Simon found that management achieved this integration by establishing a shared context (physical and communicative) that was experienced by employees as a supportive playground for interactions and debates about the game-in-the-making. The importance of play as a more general cultural element present in the firm's work environment was also evident in the tendency of management to encourage even administrative and management employees to regularly play while at work.

Joseph, Tan, and Ang (2011) reported that information technology (IT) professionals engage in updating (staying up-to-date with the latest technologies in the IT field) as either work or play. In a study of 181 IT professionals from 29 organizations in Singapore, they found that perceived threat of professional obsolescence was positively related to updating as work and negatively related to updating as play. Updating as work was positively related to turnover intentions, whereas updating as play was negatively related to turnaway intentions. Lower degrees of perceived threat enabled IT professionals to engage in updating as play, and to enjoy and sustain a means-oriented engagement in updating in the long run, while also making them less likely to consider a career change into a non-IT profession. This finding supports the view that lack of perceived threat in the work context is key to enabling play as engagement and that play as engagement fosters and is fostered by intrinsic motivation (Mainemelis & Ronson, 2006).

Fillis and Rentschler (2010) noted that, when interviewing entrepreneurs about their motivations concerning business development, intrinsic motives stand out as channels of their passions and creative endeavors. They suggested that play is an intrinsically motivated context that channels entrepreneurial passion toward new venture development, unbounded searching for solutions to emerging problems, and new strategy formulation. Mainemelis, Harvey, and Peters (2008) observed that companies such as Disney, Ferrari, and Harley-Davidson and industries such as aerospace engineering and Silicon Valley companies "did not start as sober and detailed business plans. These companies and industries were all born out of the passionate play of their founders" (p. 39). In a rich historical account of the links between play, creativity, innovation, and entrepreneurship in Silicon Valley, Cringley (1996) wrote (pp. 45–47):

> It takes new ideas a long time to catch on—time mainly devoted to evolving the idea into something useful. This fact alone dumps most of the responsibility for early technical innovation to the hands of amateurs, who can afford to take the time. . . . This explains why the personal computer was invented by hobbyists. . . . Since there wasn't a personal computer business as such, they had little expectation that their programming and design efforts would lead to making a lot of money. These folks were pursuing adventure, not business. . . . Breakdowns were frequent, even welcome, since they gave the enthusiast something to brag about to friends. The test of the pioneer was how well he did despite his technology. This explains the disdain with which "real programmers" still often view computers and software that are easy to use. They interpret "ease of use" as "lack of challenge". . . . With few exceptions, early microcomputer software came from the need of some user to have software that did not yet exist. He needed it, so he invented it. And son of a gun, bragging about the program at his local computing club often dragged from the membership others who needed the software, too, wanted to buy it, and an industry was born.

In a study of 112 entrepreneurs, Kauanui, Thomas, Sherman, Waters, and Gilea (2010) found that entrepreneurs who viewed their businesses within a holistic life context tended to create a work environment that promoted play as integral to work. These entrepreneurs' quest for meaning in their lives via their enterprises turned their work into a calling, a reward in and of itself, and it was also associated with expressed playfulness and a less egocentric emphasis in their method of managing goals and resources. Fillis and Rentschler (2010) also suggested that we should pay more attention in the future to how entrepreneurs' values and life orientations are translated into specific attitudes toward play in their workplaces.

The intentional incorporation of specific play practices in an initially small number of (p. 127) organizations has gradually attracted the attention of a growing number of organizations. For instance, Kurt, Kurt, and Medaille (2010)

noted that whereas in the past, creativity and innovation were not seen as important processes for libraries, today they are considered essential for improving the user experience. Kurt et al. stated that companies with playful cultures, such as Google, 37signals, IDEO, and Pixar, inspire libraries to innovate by incorporating play in the workplace. Considering that play is sensitive to the social context in which it is enacted, future studies should carefully identify factors that contribute to the success and failure of the process by which play is introduced into organizations.

In addition, considering that a growing number of organizations are institutionalizing play, future studies can examine how play is related to organizational routines. Although early accounts of organizational routines reflected relatively unchanging, habitual, and mindless behaviors, recent views stress that routines do not simply re-enact the past but entail both ostensive and performative aspects that allow them to adapt to contexts requiring idiosyncratic and ongoing changes (Feldman & Pentland, 2003). Dionysiou and Tsoukas (2013) suggested that the ostensive aspect of routines is created from participants' joint, intersubjective understandings and interactions and develops to incorporate understandings that are, to some extent, congruent or compatible among participants and a set of mutually coherent action dispositions. These understandings and dispositions enable participants to guide and coordinate their actions in future routine performance without completely determining them. We would expect, therefore, that the incorporation of play can promote variation in routines and ensure that each new routine performance will differ somewhat from previous performances. The extant literature suggests that in fact many play activities entail routines or rituals that foster novel behaviors (e.g., Kolb & Kolb, 2010; Mainemelis & Ronson, 2006; Smith & Stewart, 2011), and that many workplace routines support rather than hinder creativity (e.g., Gilson, Mathieu, Shalley, & Ruddy, 2005).

Play As Diversion

A focal point of recent research on diversionary play is whether and how the high-paced rhythms of contemporary social contexts constrain play. Russ and Dillon (2011) investigated changes in pretend play in children during a 23-year period. Analyzing 14 studies of children ages 6 to 10 years, from 1985 to 2008, they found that, over time, imagination and comfort with play increased, negative affect expression in play decreased, and there was no change in the organization of the story and the amount and range of affect expression in play. They noted that one possible explanation for the fact that affective and cognitive processes in play have remained the same or improved over time is that children are resilient and can find ways and time to play despite the decline in their unstructured time. Russ and Dillon's study suggests that children's *desire* to play has not changed over time. This is reminiscent of earlier studies that found that adults working in organizations that were inhospitable to play desired and found ways to play (e.g., Roy, 1959), as well as recent studies showing that today people spend more time at work, have less time available for play in leisure, but also play more at work (e.g., Hunter, Jemielniak, & Postula, 2010).

In an ethnographic study of play behaviors in five high-tech companies in Europe and the United States, Hunter et al. (2010) found that software engineers who worked long hours treated their work as play both in work and in leisure; 45% reported that they occasionally but regularly wrote pieces of software in leisure. In other words, during their leisure time, they replicated core work behaviors for pleasure and for no apparent commercial use. Some engineers mentioned that while trying to create an excellent software program in work time, they often spent time on coding functions not specified by the client because they found it fun and also because it would result in more beautiful code. Software engineers felt that long working hours had a leisurely feel, owing to the playful environment, the exchange of stories and jokes among colleagues, and the fact that they took 2 hours or more to surf the Net, play computer games, or otherwise engage in play. They even stayed at work after hours to play group network games. The companies provided play attractions, such as a table tennis room, snooker and football tables, and even dance classes, but rarely institutionalized play activities. Yet, employees were aware that turning work into play ultimately led them to spend more hours at work than required. This study offers several vivid cues for the further study of play as a core component of occupational cultures, as a space of creative freedom away from hierarchical control, but also as a form of subtle normative control.

Thorsted (2008) found that one form of play, storytelling, promoted fun work diversions; strengthened collective engagement; helped to (p. 128) create a shared, positive attitude toward play; and functioned as a medium that enabled participants (i.e., business college employees) to connect with their personal creative sides. In a similar

study in a Danish medical company, Thorsted (2008) found that play enabled the participants to experience flow and helped create new social networks and channels for sharing information. An important finding was that when the medical company tried to recreate the success of the playful intervention, it had little success. Thorsted cautioned companies that play is unpredictable and cannot easily be recreated by a specific formula. Mainemelis and Ronson (2006) also stressed that play can seriously backfire if organizations try to manipulate it. A recent study by Andersen (2011) of a state-run public health campaign in Denmark found that although play was deliberately chosen as a medium, the inclusion of various forms of scripted, one-way communication in the campaign's content ended up either corrupting play or triggering play that had little to do with the campaign's goals. Andersen concluded (p. 407) that "the concept of play as form is so forceful that it refuses to be a mere medium for a state-run campaign." Future research could focus more sharply on the conditions that influence the way that employees respond (individually and collectively) to design work climate factors aimed at promoting playfulness in the work context.

Some recent studies have focused on the role of humor in social play. Korczynski (2011) suggested that by studying humor in the context of diversionary social play, we can understand peoples' implicit lived sense of their current workplace and their implicit vision of more ideal alternative workplaces. Reflecting on Roy's (1959) classic study, Korczynski noted that the deeply engrained satire, teasing, and clowning in the machine shop studied by Roy served, in effect, as transgressive expressions of voice targeting hierarchical control relationships. In a window blinds factory in England, Korczynski found that humor involves a creative play with and against repetitive work structures and expresses a sense of resistance to the perceived forced labor process while simultaneously lubricating it. A promising direction for similar studies is the comparative analysis of social play within creative companies such as Google and social play in Taylorized industrial organizations.

In interviews with 87 employees in a health systems company, Lilius, Worline, Dutton, Kanov, and Maitlis (2011) identified a practice they called bounded playing. In bounded playing, employees engaged in enjoyable diversionary activities but with an explicit awareness of their need to focus on work. In other words, unit members had developed mutually understood play boundaries that enabled them to engage in routine diversionary play. An unique finding of this study was that the display of boundaries is playful in itself: "For example, during water gun breaks, those who are not available open up an umbrella as a signal" (p. 884). Lilius et al. noted that bounded playing and workplace celebrations establish members' information ties, foster authentic knowledge of another, and strengthen relationships. Social play may also enable employees to grasp the reality of the social context in which they attempt to make a creative contribution, to internalize the domain's basic criteria for evaluating creative work, and to build and sustain networks of information exchange, feedback, and support (cf. Adler & Chen, 2011; Perry-Smith, 2006).

Other researchers have focused on diversionary play in the context of engagement with the Internet. In an early study, Webster and Martocchio (1993) found that playfulness in computer interactions was positively associated with employee involvement, positive mood, satisfaction, and learning. More recently, Mauri, Cipresso, Balgera, Villamira, and Riva (2011) recorded somatic activity (skin conductance, blood volume pulse, respiratory activity, electroencephalography, electromyography, and pupil dilation) in 30 participants during a 3-minute exposure to a slide show of natural panoramas (a relaxation condition), a stroop and mathematical task (stress condition), and the subject's Facebook account. They found that the Facebook experience was different from both stress and relaxation on many linear and spectral indices of somatic activity. They suggest that Facebook use can evoke a positive valence/high arousal state, "leading to a core flow state that might represent a key factor able to explain why social networks are spreading so successfully" (p. 730).

Cocker (2011) noted that many companies fire or punish employees for engaging in workplace Internet leisure browsing, although it is unclear whether, how, and when Internet browsing influences work performance. He suggested that moderate surfing serves as a work break that can help restore employees' depleted cognitive and affective resources, offer them access to various sources of information, and strengthen their sense of autonomy. In a study of 268 employees, Cocker found that those who surfed the Internet during work (p. 129) hours were significantly more productive than those who did not. Self-reported productivity was higher for those who surfed for shorter periods and more frequently. Cocker found the "point of inflection" to be 12% of the employees' work time; above this threshold, surfing the Internet began to negatively affect productivity. Future studies should try to replicate this finding and assess performance with non–self-report measures as well.

In addition, Trougakos, Beal, Green, and Weiss (2008) suggested that work breaks can take the form of chores (requiring increased behavior regulation) or respites (requiring less behavioral regulation). In an Experience Sampling Method (ESM) study with 64 cheerleading instructors, Trougakos et al. found that engaging in respite activities during work breaks was positively related to higher levels of positive emotions and lower levels of negative emotions during these breaks, whereas engaging in chore activities during breaks was positively related to negative emotional experiences. People who engaged in respite activities during the breaks also displayed higher levels of positive affective display after the breaks. Although respites are not necessarily synonymous with diversionary play, this study's findings corroborate previous findings that diversionary play, as a cognitive and emotional break from core work tasks, benefits workers' psychological adjustment at work (Elsbach & Hargadon, 2006; Mainemelis & Ronson, 2006).

Altman and Baruch (2010) stressed that, across cultures, meals are predominantly relational events that create, shape, transmit, and display culture. Analyzing survey data of lunch practices in 73 organizations in the United Kingdom, they proposed a group/grid model of four organizational lunch patterns (isolates, hierarchical, individuals, teams). Future studies can build on this model to examine social and solitary forms of diversionary play during lunch breaks across more and less playful organizational contexts.

Although some studies have shown that diversionary play blurs the boundaries between work and non-work (e.g., Hunter et al., 2010), some have shown that diversionary play has clear boundaries that separate it from work (e.g., Cocker, 2011; Lilius et al., 2011), and others have indicated that the effects of diversionary play on psychological adjustment are significantly influenced by whether such boundaries exist (e.g., Trougakos et al., 2008). A fruitful direction for future research is detailed examination of the personal and contextual characteristics that influence the boundaries of diversionary play, as well as the personal and contextual characteristics that likely moderate the effects of diversionary play on psychological adjustment processes, such emotional rejuvenation and cognitive rest.

Another set of recent studies has focused on how play outside work hours affects the identity and learning processes of professional workers. Kolb and Kolb (2010) studied the emergence of a ludic learning space in a pick-up softball league: "Regardless of the role you played in real life, a therapist, a forest ranger, a nurse, unemployed, or a college professor, this was time to play ball" (p. 38). The main themes in their case study were the voluntary and enjoyable character of social play, its autopoietic boundaries and evolving internal structure, the celebration of foolishness, the role of play signals, the cardinal importance of a play community as a core motive to play, and the inherent tension between wholehearted fun and the desire to win. Stressing the dialectical nature of both social play and experiential learning, Kolb and Kolb found that three elements of a ludic space—self-directed engagement, a dual focus on process and outcome, and novelty—are key social context principles that facilitate deep learning. They concluded that deep learning can be fostered within organizations insofar as the work context allows participants to express themselves in authentic ways, to self-organize, and to create boundaries for recursive, timeless play.

Future research can further illuminate how involvement in ludic leisure-time communities is associated with employees' well-being and identification with their work and organization. Another interesting variable to consider is whether one's ludic community involves coworkers and whether, when, and how the diversity of ludic communities helps create and maintain social networks that offer professionally relevant information and ideas. Furthermore, Kolb and Kolb's (2010) observations about the tension between wholehearted fun and winning during play prompts additional research about how this tension influences the evolution of ludic communities and the optimal or threshold levels to ensure that the tension will not negatively affect the unfolding of play communities over time.

Ibarra and Petriglieri (2010) observed that people work at being certain things but play at becoming others. They introduced the concept of identity play as the engagement in provisional but active trials of possible future selves. They noted that identity work and identity play differ in terms of purpose (behavioral goals and locus of (p. 130) evaluation), place (activity boundaries and identity tense), and process (type of exploration and type of commitment). Identity play generates deliberate variation (rather than consistency) and is aimed at creating and rehearsing future possibilities (rather than maintaining or repairing existing identities and integrating them with external role demands). The authors noted that many settings outside work (e.g., educational programs, sabbaticals, leisure activities) offer safe havens that are particularly conducive to triggering the transitional

psychological context for identity play. They also argued that role transitions are a particularly useful context for exploring identity play dynamics and moderators.

Driver (2003, p. 86) suggested that some forms of play allow us to "alienate ourselves from alienated experience to rediscover a more subjective and in many ways unspoiled way of experiencing" reality. Several diversionary play forms offer reflective spaces where individuals can momentarily step out of their normal role expectations and consciously reflect on choices they did not make in the process. Art, for example, often serves as a deep language of personal and organizational identity (Essex & Mainemelis, 2002; Hjorth, 2005). Fraiberg (2010) suggested that imaginary poetry spaces allow writers to address, express, and relieve workplace emotions. She identified themes of anger, rage, and despair in office-life poetry and suggested that through the evoked knowledge of those poems we can create shared understandings about such workplace emotions and their evolution over time.

Driver (2008) noted that because the performative nature of creativity is contested and contestable, creativity can be understood as an imaginary construction of the self that requires social interactions for validation. The imaginary creative self tries but often fails to produce something novel that is validated as useful. If a playful psychological space is available for engagement with the failure, individuals can reflect on such failures not as disturbances to be corrected, but as powerful identity markers. According to Driver, people play out their struggles with imaginary creative selves in the contradictory space of knowing yourself as a creative person versus producing or being produced by social interactions that validate and legitimize such creative self-images. Considering that creative professionals routinely encounter rejection and resistance to their ideas (Mainemelis, 2010), we need more research on how they actively relate to their contested and contestable creative identities.

Kark (2011) proposed that play spaces facilitate the development of creative leadership. She noted that the between-and-betwixt reality of play, in conjunction with its boundaries in time and space, allow professionals to experiment with, rehearse, and develop new leadership identities as well as conceptual and cognitive creativity-related skills. Furthermore, the communal and social nature of group play can facilitate the development of relational, collective, and shared leadership identities. Kark suggested that psychological safety moderates the relationship between play and creative leadership development. To advance this stream of research, she called for studies that identify specific types of play that enable identity play and facilitate the development of creative leadership identities.

De Vries (2012) described a leadership development program built on the principles of organizational play therapy. He observed that, in comparison to childhood play, adult play combines both purposeful and playful characteristics and is a much less overt and transparent process. He suggested that executive development programs can function as adult play spaces insofar as they give leaders the opportunity to fulfill four basic play needs: for personal time and creative freedom, for make-believe and daydreaming, for mastery, and for meaning. De Vries stressed that the creation of a safe, transitional play space is essential for triggering and sustaining play in leadership development programs.

A common theme in the works of Kark (2011), De Vries (2012), and Ibarra and Petriglieri (2010) is that professional education contexts can offer a safe haven where individuals can play or experiment with their creative identities. Such contexts are viable research spaces for further examining the nature and processes of identity play. Furthermore, considering that many authors called for research on creative forms of leadership (e.g., Kark, 2011; Mainemelis & Epitropaki, 2013; Mueller, Goncalo, & Kamdar, 2011), future research could examine how various forms or instances of play may facilitate the development of creative leadership identities, attitudes, and behaviors.

Flow

In a 1975 article entitled "Play and Intrinsic Rewards," Csikszentmihalyi used the term "flow" to describe a playful state of total involvement with the activity (p. 43):

> "Flow" denotes the wholistic sensation present when we act with total involvement. It is the kind of (p. 131) feeling after which one nostalgically says: "that was fun," or "that was enjoyable." It is the state in which action follows upon action according to an internal logic which seems to need no conscious intervention on our part. We experience it as a unified flowing from one moment to the next, in which we

> feel in control of our actions, and in which there is little distinction between self and environment; between stimulus and response; and between past, present, and future."

Employing structural phenomenology, Csikszentmihalyi (1990) developed a theory focused on individuals' subjective experiences of flow states. Engeser and Schiepe-Tiska (2012) noted that Csikszentmihalyi's introduction of the concept of flow in his 1975 book, *Beyond Boredom and Anxiety*, might be contrasted with Skinner's 1971 book, *Beyond Freedom and Dignity*. All in all, flow theory may be seen as a par excellence eudaemonic view on human flourishing and probably the most influential basis of the more recent field of positive psychology.

Operationalization of Flow

Marotto, Bart, and Victor (2007) noted that all peak performances, like flow, are peak experiences, but the inverse is not true. Some peak experiences (e.g., religious and mystical experiences) may be passive and contemplative, whereas peak performances (e.g., flow, timelessness, virtuosity) are action-driven. Keller and Bless (2008) also stressed that flow experiences are active, energetic, and skill-focused. Furthermore, flow has varied levels of intensity and ranges from microflow experiences (e.g., daily incidents of flow such as while driving or walking) to "extremely intense and complex flow experiences [that] probably occur at best only a few times in a lifetime" (Csikszentmihalyi & LeFevre, 1989, p. 818).

Based on the analysis of data from several interview studies, Csikszentmihalyi (1990, 1997) suggested that individuals describe the flow state with the following nine elements: working with a clear goal in an activity, a balance between challenges and skills, receiving immediate feedback from the activity, the merging of action and awareness, intense concentration on a task, a sense of heightened control, forgetting one's self, forgetting time, and an activity that becomes autotelic or an end in and of itself.

The operationalization of these nine elements in empirical studies has resulted in some conceptual ambiguity. Engeser and Schiepe-Tiska (2012) noted that some of the nine elements may be conditions rather than core components of flow. Rodriguez-Sanchez, Schaufeli, Salanova, and Cifre (2011) observed that it is difficult to discriminate between the proximal antecedents of flow and the flow experience itself. Csikszentmihalyi and LeFevre (1989), for example, treated the perceived balance between challenges and skills both as an antecedent of flow and as the flow experience itself. Moneta and Csikszentmihalyi (1996) used the perceived balance between skill and challenge as a predictor of four dimensions of optimal subjective experience: concentration, involvement, happiness, and wish to do the activity. Ceja and Navarro (2012) likewise noted that the perceived balance between challenges and skills is a predictor of flow, whereas the other eight elements are its dimensions. Similarly, Baumann and Scheffer (2010) described balance between challenges and skills, immediate unambiguous feedback, and clear goals as conditions of flow.

Rodriguez-Sanchez et al. (2011) argued that the perceived balance between challenges and skills and intrinsic motivation do not constitute elements of flow but are important proximal antecedents of or prerequisites of flow, whereas absorption and enjoyment are the two core elements of flow. Csikszentmihalyi (1997) whimsically observed that, while in flow, we are not happy, because if, for instance, a rock climber takes time out to feel happy while attempting a risky move, he or she may fall off the mountain. Mainemelis (2001) proposed that enjoyment is a proximal outcome of flow, something that individuals experience after they emerge from the activity, whereas total immersion (absorption) in the activity is experienced only in the flow state itself. Delle Fave and Massimini (2005) also commented that the core and most stable element of flow is its cognitive component, absorption. However, Rodriguez-Sanchez et al. (2011) stated that because flow is intensely positive in itself, even as an a posteriori affective evaluation, the positive affective component must be included in its definition. Similarly, Engeser and Sciepe-Tiska (2012) observed that although immersion and the merging of action and awareness likely represent the more central aspects of flow, flow is a holistic sensation and thus comprises all the other elements.

The operationalization of flow has important implications for interpreting the findings of organizational creativity studies. Mainemelis (2001) and Demerouti (2006) observed that among the (p. 132) nine elements of flow, several are identical or similar to the core job-motivating characteristics of Hackman and Oldham's (1980) job design model (i.e., intrinsic task interest, skill variety, task identity, task significance, feedback, and autonomy). Several studies have found that these six factors are positively associated with employee creativity (e.g., Oldham & Cummings, 1996; see also Shalley, Zhou, & Oldham, 2004). Therefore, if these six elements are included in the

operationalization of flow, we should expect that flow will generally be positively associated with employee creativity. This further implies that flow research is more likely to make distinct and novel contributions to our understanding of individual creativity in the workplace by operationalizing flow in terms of other elements that have rarely attracted the attention of organizational creativity research to date (e.g., absorption, merging of action and awareness, transformation of time).

Patterns of Flow

In a pivotal study of flow, Csikszentmihalyi and LeFevre (1989) followed 78 adults (managers, clerical workers, and blue-collar workers) for 1 week using the ESM. They measured flow as the balance between challenges and skills. They found that flow occurred more than three times as often in work as in leisure (54% of the time at work, 17% in leisure). Managers spent more time in flow at work (but not at leisure) compared with the other two groups. Managers and blue-collar workers reported the lowest levels of creativity during leisure nonflow. Although motivation levels were higher in flow than in nonflow periods, leisure responses were always higher for motivation than work responses. Csikszentmihalyi and LeFevre (p. 821) suggested that this is a paradox, one of "people having many more positive feelings at work than in leisure, yet saying that they 'wish to be doing something else' when they are at work, not when they are in leisure." This finding has triggered investigations of defining and measuring flow and of examining the affective experiences of flow.

Rodriguez-Sanchez et al. (2011) examined daily flow patterns related to work and non-work tasks among 40 healthy and 60 unhealthy (i.e., burned-out) individuals who were asked to keep a daily diary. They operationalized and measured flow as absorption and enjoyment using the ESM. They found that levels of flow were higher for healthy than non-healthy individuals, although the daily pattern of flow did not differ between healthy and non-healthy individuals. Absorption was related to work tasks, whereas enjoyment was related to non-work tasks. In addition, lower levels of flow were more frequent during working hours; levels of flow tended to increase at the end of the day; and levels of flow, particularly enjoyment, were higher during weekends. An interesting finding of this study was that absorption and enjoyment shared only 36% of their variance. The authors argued that because absorption and enjoyment are relatively independent at least on the momentary level, they may be related to, respectively, eudemonic and hedonic perspectives of well-being. Work, in this sense, provides challenging activities that require concentration and promote personal growth and eudemonic well-being. Fullagar and Kelloway (2009) also suggested that flow is a momentary form of eudemonic well-being.

Moneta and Csikszentmihalyi (1996) noted that a unique feature of flow theory is that it does not impose a maximum or equilibrium point onto the function of flow experience. Flow experiences are inherently unstable and fleeting and may grow in complexity over time. Ceja and Navarro (2011) used the ESM to capture patterns of flow experiences in a sample of 60 employees. They found that flow experiences present a high-degree of within-individual variability. Low levels of flow were related to a random pattern, medium levels to a linear pattern, and high levels to a chaotic pattern. Employees who showed a chaotic pattern in their flow experiences had the highest levels of flow in their jobs and also spent more time in the flow state. In a closely related study, Ceja and Navarro (2012, p. 1117) found that perceived challenge and skill are "powerful predictors of work-related flow" and that at different levels of challenge and skill the dimensions of enjoyment, interest, and absorption may present both linear and nonlinear changes. They found that high levels of flow (characterized by the sudden merging of action and awareness) are marked by discontinuous and abrupt changes and are best modeled by nonlinear (catastrophe) models rather than traditional linear models.

Contextual Conditions of Flow

Csikszentmihalyi and LeFevre (1989) found that challenging as opposed to routine activities contribute to flow. In an ESM study in the field of architectural work, Fullagar and Kelloway (2009) operationalized and measured flow as a nine-factor construct and found that it has both state and trait components. In their study, 74% of (p. 133) the variable in flow was due to situational characteristics as opposed to dispositional factors. They found that skill variety and autonomy were significant predictors of flow, whereas feedback, task significance, and task identity were not. They also found that lagged flow was a predictor of positive mood, whereas lagged mood was not related to subsequent flow.

Bakker (2005) found that autonomy, performance feedback, social support, and supervisory coaching positively

related to students' flow experience through their teachers' experience of flow. Demerouti (2006) found that the Motivational Potential Score (Job Diagnostic Survey's combined index of autonomy, skill variety, task significance, and task identity; Hackman & Oldham, 1980) has a strong positive association with flow at work. Makikangas, Bakker, Aunola, and Demerouti (2010) found a cyclical positive association between the levels of and changes in flow and five job resources—autonomy, performance feedback, social support, opportunities for personal development, and coaching by supervisors. Overall, the job design characteristics of Hackman and Oldham's (1980) model appear to foster both creativity (Oldham & Cummings, 1996) and flow. Some studies reviewed later in this chapter have suggested that flow is a mediator in the relationship between these contextual characteristics and creativity (e.g., Mainemelis, 2001; Sosik, Kahai, & Avolio, 1999).

In an ESM study involving 58 line managers in an elder care center and an accounting organization in Denmark, Nielsen and Cleal (2010) found that participants' perceptions of the more stable characteristics of their jobs (e.g., cognitive demands, influence, role clarity) did not predict flow, whereas engagement in three types of activities—planning, problem solving, and evaluation—did predict flow. Engagement in brainstorming, on the other hand, did not predict flow. Nielsen and Cleal suggested that the lack of association between flow and brainstorming may be due to the fact that flow entails the elements of clear goals and control over the activity, whereas brainstorming is often a situation in which the individual does not feel clear on what he or she is doing, nor in control of the situation. This explanation, however, seems to confound the concept of clear goals and control over an activity with that of predictable, routine, and/or non-challenging activities. Litchfield, Fan, and Brown (2011) found that creativity and novelty are higher in brainstorming sessions when individuals show high goal commitment to a difficult novelty goal (see also Shalley, 1991). Also, considering that other studies found that individuals experience flow when tackling tough, ill-defined problems (e.g., Baumann & Scheffer, 2010, 2011; Csikszentmihalyi, 1997) and that task cues influence whether individuals will engage playfully in the task (e.g., Sandelands, 1988), future research can focus in greater detail on how various structural and social aspects of brainstorming influence the likelihood of experiencing flow.

Nielsen and Cleal (2010) also found that elder care managers experienced more flow states than their accounting counterparts. They suggested that the difference may be related to the fact that the accounting managers worked in a less structured environment and had a wider range of responsibilities. Future research can investigate specific types of activities as they relate to flow in various organizational contexts.

Dispositional Influences on Flow

Eisenberger, Jones, Stinglhamber, Shanock, and Randall (2005) observed that in Csikszentmihalyi and LeFevre's (1989) study, about half of the employees expressed greater motivation in the high- challenge/high-skill condition, whereas the other half expressed greater motivation under the low-skill/low-challenge condition. Eisenberger et al. hypothesized that these differences are due to dispositional differences in employees' need for achievement. In two field studies, they found that workers' need for achievement moderated the relationship between perceived challenge and skill and three dimensions of optimal subjective experience. Employees with a high need for achievement showed greater positive mood, greater intrinsic task interest, and greater organizational spontaneity (extra-role performance) when experiencing the high-challenge/high-skill condition compared with other challenge–skill combinations. In contrast, among employees with a low need for achievement, the high-challenge/high-skill condition was not associated with increases in positive mood, task interest, and organizational spontaneity.

In an attempt to operationalize autotelic personality, Baumann and Scheffer (2010, 2011) introduced the achievement flow motive as the intrinsic element of the achievement motive. They suggested that that the achievement flow motive consists of two functional components: see(k)ing and mastering difficulty. In a mix of field and laboratory studies, they found that the achievement flow (p. 134) motive was stable for 2 years and was related to self-determination and efficiency at work. Individuals with higher achievement flow motives were more likely to become immersed in their work tasks and to experience flow across different tasks and situations. The direct relationship between achievement flow motive and flow experience was mediated by the combination of seeking difficult behaviors (planning, analytical problem solving, and task focus) and mastering difficulty behaviors (commitment, optimism, and staying power). Baumann and Scheffer suggested that because confrontation with difficulty is associated with reductions in positive affect and mastering difficulty helps restore positive affect, jointly

activating or alternating between difficulty and mastery may promote flow through affective change. Affective change, therefore, may be more essential to flow than positive affect per se (Baumann & Scheffer, 2010).

Freitas and Higgins (2002) found that high regulatory fit increased participants' enjoyment of, perceived success at, and willingness to repeat a novel laboratory task. These effects were independent of participants' actual success at the task. Other studies have found that individuals with low self-regulatory skills or weak internal locus of control are less likely to experience flow even if task demands are dynamically adjusted to their skill level (Baumann & Scheffer, 2011; Keller & Bless, 2008; Keller & Blomann, 2008).

Keller and Bless (2008) tested the moderating role of the volatility–persistence component of action-orientation in the relationship between challenge/skills balance and intrinsic interest and enjoyment. In two experimental studies, they manipulated the fit between challenges and skills by creating three distinct play modes in the Tetris video game. In the boredom condition (skills > challenges), the Tetris objects fell at a very slow rate; in the overload mode (challenges > skills), the objects fell at a very fast and increasingly faster rate; and in the adaptive mode (challenges = skills), the fall rate was progressively adapted to the player's actual performance. In comparison to individuals in the boredom or overload conditions, participants in the adaptive condition achieved higher game scores, indicated that they spent less time (than the actual time spent) playing the game, and reported higher levels of intrinsic interest and enjoyment. Participants in the boredom condition reported the highest level of perceived control over the activity, participants in the overload condition reported the lowest level, and participants in the adaptive model reported a level between those two. Keller and Bless also found that the *perceived* fit between challenges and skills was higher in the adaptive mode and that this partially mediated the effect of the condition on intrinsic interest and enjoyment. Actual performance did not mediate this relationship. Finally, they found that action orientation moderated the relationship; in other words, individuals who scored high on action orientation experienced higher levels of intrinsic interest and enjoyment in the adaptive condition.

In a study with 113 employees in the Netherlands, Demerouti (2006) modeled personality not as an antecedent of flow but as a moderator in the relationship between flow and job performance. She found that flow (i.e., absorption, enjoyment, and intrinsic motivation) was positively associated with peer ratings of both in-role and extra-role performance, but only for employees who scored high on conscientiousness. Employees who scored low on conscientiousness enjoyed flow states as well, but their flow experiences did not translate to tangible performance outcomes. While many studies on flow have assessed job performance through self-reports, Demerouti's study is rare in that it assessed job performance through ratings by principal informants. We clearly need more studies on flow that assess specifically creative performance through supervisor ratings, peer ratings, number of patents, and other measures beyond self-reports.

Kauanui et al. (2010) found that flow is related to individuals' general orientation toward life. In a study of 112 entrepreneurs, they found that those who experienced flow more frequently were more spiritually connected to their business. Most importantly, they found that the flow elements of autotelic experience, loss of ego, focus concentration, and balance between challenges and skills were particularly lacking for entrepreneurs with a nonspiritual connection to their work. This finding suggests that different elements of flow may reflect individuals' differential associations with a wide range of personal and contextual factors. Kauanui et al. also found that entrepreneurs who were spiritually connected to their work and experienced flow were more open to cultivating an organizational culture that nurtures well-being.

Outcomes of Flow

Csikszentmihalyi and LeFevre (1989) found that self-reported measures of affect, potency, concentration, satisfaction, and motivation were higher in flow than in non-flow in both work and (p. 135) leisure and that people were more happy in leisure flow and least happy in non-work flow. All three occupational groups in their study reported higher-than-average levels of creativity, potency, and concentration during work flow.

Makikangas et al. (2010) found that employees' level of exhaustion was negatively associated to both job resources and flow. Employees with a low level of initial exhaustion were more likely to follow a trajectory in which both job resources and flow were high and remained high over time, whereas employees with high levels of initial exhaustion were more likely to follow a trajectory of low or decreasing job resources and flow.

Lovelace, Manz, and Alves (2007) proposed that flow can help alleviate the negative effects of high-strain jobs and also can promote increased engagement. Demerouti, Bakker, Sonnentag, and Fullagar (2012) assessed flow as absorption, enjoyment, and intrinsic motivation in a diary study of 83 employees in Europe. They found that absorption was positively associated with vigor at work, whereas intrinsic motivation was positively associated with vigor at home. Enjoyment was positively associated with vigor and negatively associated with exhaustion at the end of the work day when employees had low recovery after breaks at work, but not when they had high recovery after breaks. Employees scoring high on enjoyment during work experienced lower exhaustion at bedtime when they detached from work while at home, compared with people scoring low on detachment.

The findings of Demerouti et al. (2012) show that in high-paced work environments, flow helps rejuvenate depleted energy resources and has significant spillover effects to the non-work domain. In addition, Mainemelis and Ronson (2006) noted that finding affective pleasure in challenge is the hallmark of play, and of the flow state in particular, and Kark (2011) suggested that in play people experience heightened vigor and vitality. In a study of 128 employees, Kark and Carmeli (2009) found that vitality was positively related to creative involvement. A promising direction for future research is the investigation of the possibility that high-arousal positive feelings, such as vigor and vitality, as induced in flow, make subsequent and sustainable positive contributions to employee creativity in high-demand jobs.

Csikszentmihalyi and LeFevre (1989) found that self-reported creativity was higher in flow than in non-flow in both work and leisure, and that all three occupational groups in their study reported above-average levels of creativity during work flow. Sosik et al. (1999) measured flow as a higher-order construct with lower-order dimensions of intrinsic motivation, feedback, and concentration in a laboratory setting. They found that in the condition of anonymity, flow mediated the positive effects of transformational leadership on creativity. Furthermore, flow mediated the effects of transactional contingent–reward leadership on creativity irrespective of the level of anonymity. Sosik et al. noted that anonymity likely encourages participants who are moving into a flow state to become engrossed in the activity and to overcome their inhibitions to offer creative input.

Gevers and Demerouti (2013) examined the association between task absorption and creativity over 4 weeks in a diary study of 32 IT employees in the Netherlands. Controlling for general levels of absorption, they found that weekly absorption was positively related to self-reported individual creativity across the 4 weeks.

In a rare participant observation study in a conservatoire orchestra, Marotto et al. (2007) investigated how individual virtuosity experiences become collective virtuosity experiences. They found that collective virtuosity consists of engaged interaction and deep experience at the cognitive, affective, and social levels. The state of collective virtuosity was actively catalyzed by the interaction of leader characteristics (e.g., charisma), task characteristics (e.g., ennobling task), and group characteristics (e.g., empowerment). Furthermore, although musicians' love for the musical tasks remained constant during the 3-week rehearsal period, "the rare and fleeting moments of group level peak performance did not occur consistently throughout the three weeks" (p. 400). Stressing the fleeting and fragile nature of collective virtuosity, Marotto et al. suggested that collective virtuosity is lost when the members' aesthetic experience of collective performance is distracted.

Flow appears to foster creativity and high-quality performance. That said, we need much more empirical work on the relationship between flow and creativity. In addition, future studies on flow should assess creative performance with both self-report measures and with non–self-report measures of employee creativity (cf. Ng & Feldman, 2012).

Keller and Bless (2008) and Engeser and Schiepe-Tiska (2012) noted that flow does not necessarily relate to positive ethical or prosocial behavior, in part because it can become addictive (e.g., excessive playing of video games, gambling, flow (p. 136) in combat) and in part because it can be experienced when individuals engage in antisocial activities. This applies to other forms of play as well. For example, playing violent video games may increase both short- and long-term aggression, especially among men with aggressive personality traits (Anderson & Dill, 2000). Future studies, therefore, should also investigate the potential addictive, subversive, and antisocial aspects of playful behaviors.

Timelessness

Drawing on perspectives on flow (Csikszentmihalyi, 1997), ecstasy (May, 1994), and subjective inner duration

(Bergson, 1960), Mainemelis (2001, 2002) described timelessness as a complex experience associated with an intense state of consciousness in which total involvement in the task at hand results in loss of self-consciousness and loss of the sense of time. He conceptualized timelessness as a higher-order factor manifested in four dimensions: immersion in the task, time distortion, a sense of mastery, and a sense of transcendence. Mainemelis noted that timelessness is experienced in the more complex levels of flow, which occur less often than micro-flow experiences. He also suggested that other elements of flow (e.g., balanced between skills and challenges, intrinsic task motivation, feedback) are proximal contextual conditions of timelessness. He proposed that timelessness is a high-quality state of intense engagement with creative work that facilitates personal creativity.

In three studies involving business students, industrial designers, and R&D employees, Mainemelis (2005) found support for the higher-order representation of timelessness, as well as positive associations between timelessness and self-reported creativity. In a nomological study in an R&D organization sample, he found that timelessness was positively associated with supervisor ratings of employee creativity. Furthermore, timelessness was positively associated with intrinsic task motivation and autonomy.

In a study of 40 young professionals working in an architectural practice, a structural engineering firm, and a construction company, Sturges (2013) found that those who experienced work as a resented obligation did not experience timelessness. In contrast, those who associated their work with enjoyment and intrinsic rewards spent more time at work, experienced more timelessness (immersion and time distortion), and felt that work time was closely linked to indulging in a passion. Sturges found that the experience of timelessness was linked to creative engagement and creative problem solving more among the architects and less among the other professionals. A promising direction for future research, therefore, is investigation of the occupational and environmental conditions that foster timelessness specifically in the context of creative engagement versus other forms of work engagement.

Unlike other conceptualizations of flow, the concept of timelessness draws attention to the temporal dynamics that foster or hinder states of deep immersion in creative tasks. In this vein, Bakker, Boros, Kenis, and Oerlemans (2013) experimentally manipulated time frames in a study of 267 managers working in creative project teams. Teams working in shorter time frames had a time orientation that was more focused toward the present, were less immersed in the task, and employed a more heuristic (versus a systematic) mode of information processing. Bakker et al. noted that a short time frame may lead individuals to focus on task completion (getting the work done) rather than the process that supports it.

Focusing on the demands of the immediate present is not synonymous with becoming immersed in the activity. In fact, some studies have shown that confidence in planning over long time frames is positively associated with creativity (e.g., Zampetakis, Bouranta, & Moustakis, 2010). The positive association between long time frames and task immersion in Bakker et al.'s (2013) study corroborates theoretical descriptions of timelessness (Mainemelis, 2001) and flow (Csikszentmihalyi, 1997). Mainemelis (2001) suggested that immersion requires a person's attention resources to become fully invested in the task at hand. Short time frames, especially tight deadlines, arouse feelings of concern, stress, or anxiety, which consume scarce attention resources and thus function as cognitive distractions that hinder total involvement with the activity. To further investigate this issue, future studies can explore how affective reactions moderate or mediate the effects of time frame on task immersion.

Gevers and Demerouti (2013) noted that individuals have varied styles for pacing their work. Some prefer to concentrate efforts later in task execution (deadline-action pacing style), some prefer to spread out work effort evenly (steady-action pacing style), and others prefer to combine both early and later effort distribution (U-shaped pacing style). In a diary study with 32 IT employees in (p. 137) the Netherlands, Gevers and Demerouti found that supervisors' temporal reminders related positively to task absorption for individuals with a strong preference for the deadline-action pacing style but negatively for individuals with a strong preference for the steady-action or the U-shaped action style. Controlling for general levels of absorption, Gevers and Demerouti found that weekly absorption was consistently positively related to individual creativity across 4 weeks.

Antes and Mumford (2009) and Byrne, Shipman, and Mumford (2010) found that time orientation, time pressure, and forecasting have complex interactive effects on creative processes. Therefore, future studies on timelessness, flow, and other playful states of intense involvement with work tasks should carefully consider the interactions between the wide range of temporal constructs (cf. Halbesleben, Novicevic, Harvey, & Buckley, 2003), the various types of tasks, and the various stages and processes involved in creative work.

Conclusions

While in the past research on play in organizations was limited, fragmented, and dispersed, in the last decade we have witnessed the development of integrative conceptual frameworks as well as the formation of research substreams, especially those focusing on serious play and flow. Recent empirical studies have employed a wide range of methods, including survey, laboratory, ESM, interview, ethnographic, case study, participant observation, and action research designs. Equally encouraging is the proliferation of critical perspectives stressing the need for balanced analyses of the institutionalization of play in organizations. Considering that play is polymorphous, complex, and elusive, methodological and theoretical pluralism is important for advancing our understanding of play at work.

Taken together, the studies reviewed in this chapter suggest that play, flow, and timelessness tend to be positively associated with creative engagement, creative performance, innovation, well-being, and social connection in the workplace. That said, the field of play research and its extant body of empirical findings are still nascent. We need more studies, and more focused studies, on a wide range of issues pertaining to the personal and contextual conditions of play, flow, and timelessness; their associations with creativity, innovation, and entrepreneurship; and their interactions with other moderating and mediating factors in the work environment. We also need more research that focuses on the differences among various conceptualizations of play, flow, and timelessness and the various ways in which these three constructs influence creativity, innovation, and entrepreneurship. As the field evolves, its conceptual arguments and empirical designs are likely to grow in accuracy and precision, leading to more elaborate portrayals of the intricate and complex manifestations of play in organizational life.

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