BRING PLAY INTO *PLAY*

A Play Learning Mindset for Design Management

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1.1
MOTIVATION

At a very young age, I became aware that I was different from the other children around me. I had difficulty reading social and emotional cues in speech. A perfectly run-of-the-mill social interaction could leave me mystified for days. For most of my life, I simply assumed that these problems simply a personal failing of mine. It was only at the age of 25 that I was diagnosed with Asperger's Syndrome, a cognitive condition characterized by difficulty with social interactions, amongst many other symptoms.

I quickly discovered that in play, the usual social rules were turned on their head. As long as I understood the rules of a given game, I could make friends or get along with classmates with far less effort than, say, striking up a conversation during class hours. All social interactions, for that matter, seemed far easier when everyone was primed to let loose and have fun. In play, people were far more honest about their true personalities than they usually were. The roles that people gravitated towards when playing house, their play styles in a game of football, their ability to negotiate the rules of reality when playing dolls, all told me more about my peers than any interaction I might have with them in the classroom. Although we were all using play to acquire various skills, I was actively using it as a tool to get along with other people better.

As time passed, play became less ubiquitous in my daily life and social interactions, understandably more complex. Yet, I found that play was still the most valuable tool I had in my belt. In my academic career, I found that incorporating fun and games into my school projects helped me stand out among my peers. I found that the habit of cultivating a sense of playfulness translated

directly into my career as a multi-disciplinary creative. No matter what stage of life I've found myself in, I've found that engaging my peers in games is just as helpful in fostering relationships as it was when I was in kindergarten. Although it is now far more difficult to invite my fellow adults to play, I've observed that the effect of keeping an active sense of play in my life has not diminished in the least. If my initial goals with play were learning to fit in, my new objective is gaining a deeper understanding of the people around me.

My late diagnosis only confirmed what my lifelong journey of play learning has taught me: people tend to resist conventional definitions. Indeed, I'm often told that don't fall into the "common definition" of an autistic person. The coping mechanisms I developed through play? Even less so. However, this in itself is a grave misconception. There is no conventional definition or catch-all checklist of Asperger's symptoms, or for any of the conditions that fall on the autism spectrum, for that matter. Every autistic person's mix of symptoms, situations, and personal challenges are unique as any individual's, neurotypical or otherwise.

The human experience is so varied that it cannot possibly be captured in a single definition of "normal". With the breadth of experiences, cultures, and mindsets that exist in the world, it's impossible to define anything as normal without necessarily excluding a large swathe of real, lived experiences. We must learn how to attune ourselves to the needs and well-being of people who tend to fall out of the extremely narrow definition of normal. As global society becomes more interconnected and

complex, and the problems that people face on the daily, even more so, it's becoming more and more vital to understand that we are all profoundly, wonderfully different. As we become more closely connected with people outside of our immediate experience, we must widen our understanding of what it means to be a human being.

I cannot understate how much play has influenced my current worldview. It's made me keenly self-aware, not just of my unique challenges, but the challenges of those around me. While this view has helped me develop in both my personal and professional life, there's no guarantee that it'll carry similar value for anyone else. There are many considerations when introducing play into the world of work, where adults like myself tend to spend most of their time. Even in my chosen field of design management, concerned with generating business value from creativity and design, there are significant barriers to the idea of simply playing.

I'm undertaking this research to understand the nuances and implications of bringing play into my professional practice more profoundly and fundamentally. It will, by no means, serve as a definitive guide to reaping the benefits of play in design management. After all, just as people tend to resist conventional definitions, so do the myriad contexts in which we might practice design management. I hope that design managers could use this research to inform, not just their understanding of play, but its place in our practice and the larger world we move within.

1.2
PROBLEM STATEMENT & OBJECTIVES

From this motivation, the central problem of the research follows:

In what ways might play theory enhance our understanding of design management practice?

The first step of the research is **to establish a shared understanding of both play theory and design management**. This is to ensure that the insights can provide a direct benefit to professionals managing design, rather than theoretical what-ifs. With this, we will determine the most urgent challenges that design managers face in the current context.

At the same time, the research also aims **to provide a practical, adaptive framework of play learning within design management**. The research will attempt to provide a practical framework of understanding, without falling into prescribing definitive solutions that rely too heavily on current knowledge.

Lastly, this research aims **to build a foundation for further research into play theory and design management in other contexts**. The considerations for applying either practice would not only vary on the larger context, but the specific conditions of the organization, team, and individuals within them. With no way to set universal rules of play in design management, each application has the potential to spark its own research effort, unique to its situation.

1.3
UNDERSTANDING DESIGN MANAGEMENT

A. Design Management practice is context-dependent

There are several ways of understanding design management as a practice. Kathryn Best[1] defines it simply as the management of design projects (Best 2006). While this is the basic function of the practice, it's not the sum of all its actions. Peter Gorb[2] expands this definition further, describing design management as the "effective deployment by line managers of the design resources available to an organization, in the pursuance of its corporate objectives" (Gorb 1990). Managed effectively, design has the potential to add value to products & services, improve financial performance, increase customer satisfaction, but also improve internal processes within an organization (Borja de Mozota 2005)[3].

Within all these definitions, two elements surface immediately: design and the presence of a corporate strategy. These different definitions agree that design management is critical for maximizing the potential of design resources for business advantage (Borja de Mozota 2006). These range of definitions suggest that design management exists primarily as a strategic business tool (Lewis et al. 2009).

Although most definitions point towards a certain idea of design management, it's actual practice differs widely depending on multiple, context-dependent factors. The

1.
Kathryn Best has been writing, teaching, and speaking about Design Management for 20 years. She is the author of several foundational design management books including Design Management: Managing Design Strategy, Process and Implementation, and The Fundamentals of Design Management (www.kathrynbest.com).

2.
Peter Gorb was a former member of the RSA Council and Senior Fellow of Design Management at the London Business School (Gorb 1990).

3.
Brigitte Borja de Mozota is a design management professor at various schools including Paris College of Art and Université Paris Ouest. She's the author of Design Management, a core guide for the field, and a lifelong fellow at the Design Management Institute (Borja de Mozota et al. 2016).

efficacy of design, for example, could depend on the specific client and stakeholder needs, even changing depending on the individual project (Pilditch 1990)[4]. Extending this towards the larger context, different organizations call for different approaches to managing design within them (Lewis et al. 2009). Different industry approaches and attitudes towards design affect how the finance, quality control, and production of design is managed. (Gorb and Dumas 1987).

Misunderstanding the scope of the design process may also lead to this difficulty in defining design management. Angela Dumas[5] and Peter Gorb uncovered the phenomenon of silent design, in which the "strategic importance of design is acknowledged but the roles and contributions of the participants aren't always recognized" (Gorb and Dumas 1987). This was found to result from the misconception that design success was the sole purview of designers alone, rather than the result of the integrated effort across multiple departments. This concept is supported by Dan Hill's[6] writing on the dark matter of the design process, the invisible processes and structures outside of design that influence its delivery (Hill 2012). Hill posits that the key factors to successful design project delivery and integration are non-design activities and constraints such as policies, approvals, and other bureaucratic elements. A review of design management methodologies conducted by the National Centre for Product Design & Development Research (PDR) in Cardiff suggests that this same lack of an agreed definition of the discipline may result in an ill-defined scope for design management research (Lewis et al. 2009). Alan Lewis[7], former Director of the PDR, suggests that a company's approach to design management is more strongly influenced by their strategy, rather than their specific products or the sector and industry they operate within (Lewis et al. 2009).

4.
James Pilditch was an early writer in the field of design's business value. He authored The Silent Salesman (1961) and The Business of Product Design (1966), among other major books (Woodham 2016).

5.
Angela Dumas is a design management specialist and co-author of the study that first coined the term "silent designer". She's published multiple core papers on the field. (Gorb 1990)

6.
Dan Hill is a prominent voice in strategic design and the post-urbanist design movements. He is currently Associate Director at Arup, a design and engineering firm, and a professor at various universities in Sydney and Melbourne (Hill 2019).

7.
Alan Lewis is currently the Dean of Quality, Audit and Review at the University of Wales. The study referenced in this research was conducted by a team within the National Centre for Product Design & Development Research at Cardiff Metropolitan University, where he was formerly the Dean for Research (Alport and Bryant 2019).

This plurality in determining factors implies that there may be no single, universal definition of design management that applies in every practical setting. The specific realization of design management, the policies and processes that result from it, are highly context-specific (Gorb and Dumas 1987; Pilditch 1990; Lewis et al. 2009).

B. Who is responsible for design management?

In the different contexts that design management may be practised, we have to look at design management's place within the entirety of an organization. Various models attempt to codify design management according to its level of implementation, integration, and its recognized value within an organization (Lewis et al. 2009). Across these models, it's acknowledged that design can generate value on different levels. On the most basic level, design can be managed on a project-by-project basis (Cooper and Press, Mike 1995; Borja de Mozota 2002). At this level, design may not necessarily be integrated as a regular process within the company. The next level of design management comes in on a functional level, where the company has set processes on how they manage design (Cooper and Press, Mike 1995; Borja de Mozota 2002). This level of integration recognizes design as a key operation in the company, but does not necessarily treat it as a core skill. The highest level on which design can generate value within a company is on the strategic level (Cooper and Press, Mike 1995; Borja de Mozota 2002). At this level of integration, design may be considered a key strategic activity and can even contribute to the overall vision of the company. Best suggests that these levels of integration directly relate to the roles of designer (projects), design manager (process), and design leaders (vision) (Best 2006). These models

do not, however, mean to imply that certain roles generate more value than the other. These models simply show how the level of implementation and integration of design affect its proximity to strategic decision making (Lewis et al. 2009). A company that implements design on a functional level will more likely have processes to measure design outcomes and artefacts than, say, one that only views design on a project-by-project basis (Cooper and Press, Mike 1995). A company with design leaders integrated within its top-level decision-makers will more likely include design as a major consideration or tool in company-wide policies and strategies.

More useful to this research are the design management models that outline the functions of the practice, rather than the hierarchies within it. Robert Hayes[8] sees design as a "facilitator, differentiator, integrator and communicator" (Hayes 1990). Design can facilitate internal processes (e.g. improve cost, quality, production), differentiate products, integrate different functions, and communicate the values and mission of a company (Lewis et al. 2009). Although they do require design to be integrated at least at an operational level, these functions aren't necessarily linked to any hierarchy of design management roles. Anyone from a designer to a top-level officer could contribute to these functions. Best offers an alternative based on Peter Drucker's[9] change paradigm of change model, which suggests that any organization operates in the past, present, and future (Best 2006). In this paradigm, Best suggests that design can help organizations improve current operations or the traditional business, address new opportunities (transitional business), and move towards a new vision of itself (the transformational business) (Best 2006). With the element of time and the resulting organizational change introduced, it's possible to see how strategy could be the

[8.]
Robert Hayes is a widely published author in the areas of business strategy and management. He was formerly a professor of Business Administration at Harvard Business School (Harvard Business School)

[9.]
Peter Drucker is considered one of the main contributors to the modern philosophy of business management and a pioneer in management education (Encyclopaedia Britannica).
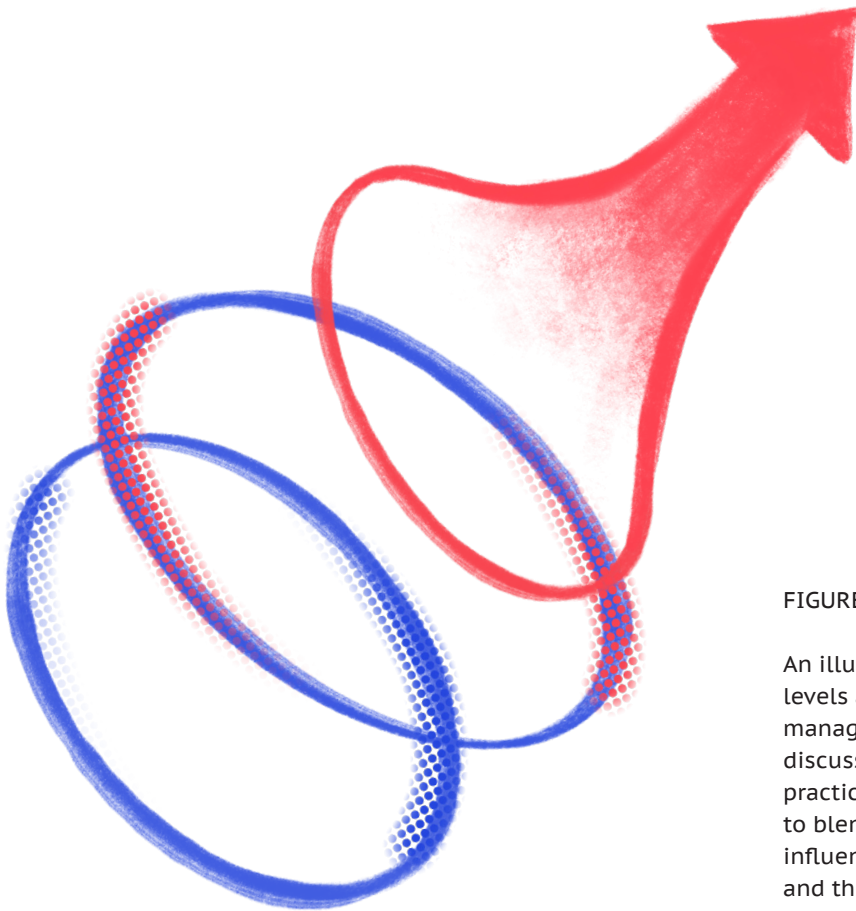
FIGURE 1.

An illustration of different levels and aspects of design management mentioned in this discussion. These elements. In practice, these elements tend to blend together in a flow influenced by context's needs and the organization's goals.

key context that determines the practical application of design management. After all, the operational elements of a business can't stay relevant unless they continuously change (Gorb 1990). Peter Gorb suggests that the ability to change is the most rewarded function of managerial activities.

These last few points suggest that the main concern of design management isn't just how design contributes to a company's business current objectives, but also its ability to continue doing so into the future. This is a concern of all decision-makers in the company, whether they consider themselves design leaders or not. The most vital players in the continuing ability to deliver design on a strategic level might not even consider themselves as part of the design process. Design policy cannot be effective without a larger structure to implement it (Gorb and Dumas 1987). Design, then, can only have a substantial effect on strategic ability with the buy-in of high-level design leaders, even those that don't identify as such.

1.4
UNDERSTANDING PLAY

Although Play Theory is a field in its own right, major authors tend to be rooted in other fields such as psychology, art, education, and so on (Sharp and Thomas 2019). This may be because the experience of play covers a broad range of human experiences (Eberle 2014). It can be free and unrestrained or operate within a set of rules. It can be active or passive, vicarious or engaging, even both ends of these spectrums at the same time (Eberle 2014). In this definition, Scott G. Eberle[10] emphasizes play's ability to welcome opposites. With this openness to contradiction, it makes sense then, that the attempts to study play tend to be based in a variety of fields rather than just one central field. As we move through different definitions and models, we will attempt to form a holistic understanding of play, not limit it to a single definition.

That being said, a lot of research done around play is preoccupied with describing its effects Play and early learning expert, Tina Bruce[11], compiled a list of twelve key elements found in play. This list was originally made to describe free-flow play exhibited by children but it can also apply to adults (Bruce 2005).

- *It is an active process without a product.*
- *It is intrinsically motivated.*
- *It exerts no external pressure to conform to rules, pressures, goals, tasks or definite direction. It gives the player control.*
- *It is about possible, alternative worlds, which lift players to their highest levels of functioning. This*

10.
Scott G. Eberle is the former vice president for play studies at the Strong, National Museum for Play and former editor for the institution's American Journal of Play. He's considered an authority in the area of interaction and play (Psychology Today).

11.
Tina Bruce is a leading academic and advisor in the area of early education, for which she was awarded a CBE in 2008. She served as the coordinator of the Early Years Advisory Group for 10 years (Nursery World Awards 14).

involves being imaginative, creative, original and innovative.

- *It is about participants wallowing in ideas, feelings and relationships. It involves reflecting on and becoming aware of what we know – 'metacognition'.*

- *It actively uses previous first-hand experiences, including struggle, manipulation, exploration, discovery and practice.*

- *It is sustained, and when in full flow, helps us to function in advance of what we can actually do in our real lives.*

- *During free- flow play we use technical prowess, mastery and competence we have previously developed, and so can be in control.*

- *It can be initiated by a child or an adult. [...]*

- *Play can be solitary.*

- *It can be in partnership or groups, with adults and/or children, who will be sensitive to each other.*

- *It is an integrating mechanism, which brings together everything we learn, know, feel and understand.*

Bruce's description pulls from a variety of sources, including Jean Piaget[12], a child psychologist and proponent of play learning in children, and Roger Callois[13], a sociologist whose categories of play forms the basis of the models used in this research (Gauntlett et al. 2011). Although the description covers various important aspects of the free-flow play experience, it does not attempt to discern the characteristics of play that make these aspects possible. In their book Fun, Taste, and Games, contemporary play scholars John Sharp and David Thomas[14] critique this descriptive approach towards understanding play (Sharp and Thomas 2019). Although they don't address Bruce directly, they write that attempting to describe play according to its observable effects greatly limits our understanding of its potential. Instead, they propose a framework for

12.
Jean Piaget was a pioneer in the field of psychology and child development at the turn of the century. His research focuses on learning and education in early childhood (Gauntlett et al. 2011; Bech 2019).

13.
Roger Callois wrote extensively about play, games, and the sacred from various perspectives: sociology, philosophy, and psychology (Académie française).

14.
John Sharp and David Thomas are contemporary game scholars and co-authors and co-editors of an ongoing series of books examining play and games (Sharp and Thomas 2019).

understanding the essential, underlying characteristics of the play experience, rather than its outward effects. To do this, they draw a direct line between the play theory and Immanuel Kant's[15] aesthetic theory, citing their mutual lack of "conventional, material productivity" as the basis for doing so. Sharp and Thomas clam that, while neither play nor art contribute to our daily, physical needs, they have the potential to address emotional, even spiritual needs (Sharp and Thomas 2019). In Kant's aesthetic theory, beauty is the essential quality and the main value derived from an aesthetic experience. In a play experience, Sharp and Thomas propose that the feeling of fun is the parallel, essential quality of play. According to them, fun can be achieved if a play experience meets three essential qualities: set-outsideness, ludic forms, and ambiguity (Kant 2011; Sharp and Thomas 2019).

15.
Immanuel Kant was a philosopher known for his writings on art and beauty. Sharp and Thomas employ his aesthetic theory as a basis for understanding the essential qualities of play. (Sharp and Thomas 2019). His contribution to this research is considered to illustrate the multi-faceted nature of play theory.
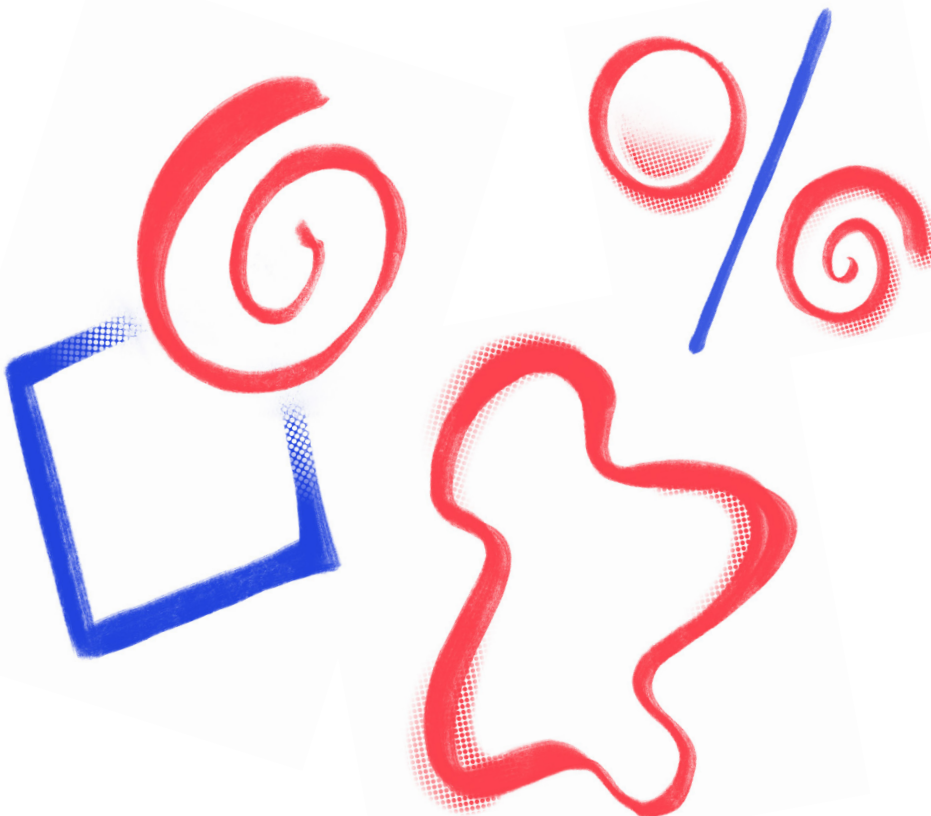

FIGURE 2.

Illustrations of the essential qualities of play (from left to right): set-outsideness, ambiguity, and ludic form.

A. Set-outsideness

As Sharp and Thomas mention, there is no immediate, quantifiable, material output to be had from play. This isn't to say, however, that play has no value. Sharp and Thomas call the play experience "subsistence plus", something that exists beyond the basic physical needs of human life (Sharp and Thomas 2019). Because it doesn't immediately reside among the more obvious needs of everyday life, play experiences are effectively "set outside" of real life. Johan Huizinga[16] put forth the concept of the magic circle of play, a "temporary sphere of activity with a disposition all of its own". In this circle, play is distinct from the everyday environment. Play, Huizinga continues, is never a task but a voluntary and enjoyable activity that we can engage with fully without it being threatening" (Huizinga 1955; Sharp and Thomas 2019). In writing about games, Erving Goffman[17] describes this set-outsideness as being governed by "irrelevance and inattention". Games, he writes, are "structured encounters [...] set outside through irrelevance" (Goffman 1961; Sharp and Thomas 2019).

As we move into more contemporary writing on play, we encounter some critique about the hallowed separateness of play and games. Katie Salen and Eric Zimmerman[18] admit that the magic circle concept is useful for game designers as a context for creating meaning. In the context of a game, relationships may change and "things that do not matter, suddenly do". Games, then, shouldn't be thought of as a mythic space where everything is irrelevant; but as a separate context – parallel with daily life – with the ability to create new and different meaning (Sharp and Thomas 2019).

FIGURE 3.

Set-outsideness

16.
Johan Huizinga was historian and cultural critic who wrote about play's fundamental presence in human development (Sharp and Thomas 2019).

17.
Erving Goffman was a sociologist and psychologist who proposed multiple theories on the social construction of self, institutions, and experiences, that are still widely referred to (Sharp and Thomas 2019).

18.
Katie Salen and Eric Zimmerman are authors of Rules of Play: Game Design Fundamentals, a core reading in game and interaction design education (The MIT Press).

This brings us to an important point: can we claim that play has a function in daily life? Jaak Panksepp and Lucy Biven's[19] study of play tries to look into a biological function of play behaviour, possibly as a means for survival (Bech 2014). While they concluded that there was no substantial database to support this, they did find that the most direct benefit of play was its ability to generate positive emotions. In numerous species, play was also found to be instrumental in honing certain social skills (Bech 2014). Peter K. Smith[20] writes that in a relatively safe but unfamiliar environment, the set-outsideness of play offers us an opportunity for "[practising] newly developed behaviour & strategies" (Smith 2010). Brian Sutton-Smith posits play as a human principle of "adaptive potentiation which allows us to experiment and flourish" (Sutton-Smith 2001; Bech 2014). These perspectives all agree that, while play lends itself towards experimentation and adaptive behaviour, it doesn't directly translate into specific survival skills.

It's possible to draw some links between Bruce's description of play and the essential quality of set-outsideness. In particular, the perspectives on set-outsideness pinpoint play's potential for experimentation with relatively little consequence. This quality may be what enables us to create "possible, alternative worlds" which allow us to be practice at being imaginative, creative, original and innovative. Bruce also mentions the ability of play to use "previous first-hand experiences, including struggle, manipulation, exploration, discovery and practice". In the more nuanced views introduced by contemporary writing, we understand that the set-outsideness has both the potential to re-contextualize previous behaviour as well as allow for the creation of new behaviour.

19.
Jaak Panksepp and Lucy Biven conducted their study, The Archaeology of Mind: Neuroevolutionary Origins of Human Emotions, on multiple species (Bech 2014).

20.
Peter K. Smith is a psychologist specializing in social development in children and bullying. He formerly headed the Unit for School and Family Studies at Goldsmiths University (Goldsmiths University).

B. Ludic Forms

Ludic forms are the structures within which fun and play emerge (Sharp and Thomas 2019). At this point in the discussion, it's important to set a clear distinction between games and play. George Santayana[21] describes play as something done spontaneously, for its own sake. This description of play falls under free-flow or unstructured play (Gauntlett et al. 2011). On the other hand, games are objects designed to generate play with a certain structure, set or measurements, and limited experience (Santayana 1955; Sharp and Thomas 2019). Salon and Zimmerman (quoted in Bech's dissertation Playful Interactions) pose games as a subset of play that do have goals and quantifiable outcomes (Bech 2014). While games are a specific kind of ludic form that can lead to play, not all play follows as game structure.

Even with the difference between games and play, it's just as possible to apply games into the realm of design management as is it play. However, the study of game theory as opposed to play theory poses a risk to the practicality objective of the research. The study of human behaviour within game theory assumes players to be "rational decision-makers in the pursuit of self-interested outcomes" (Sharp and Thomas 2019). This goes against the current understanding of human decision making as a seamless combination of rational, emotional, physical, and social factors (Schon and DeSanctis 1986; Gauntlett et al. 2012; Laloux 2014; Kolb 2014).

Furthermore, bringing games into design management runs too closely into the realm of gamification, the application of game-like elements and rewards systems onto non-play

FIGURE 4.

Ludic forms

21.
George Santayana is a philosopher and essayist whose principal musings centered around aesthetics and speculative philosophy (Encyclopaedia Britannica). His perspective is considered in this research to illustrate the variety of viewpoints surrounding play.

activities (Sharp and Thomas 2019). In terms of structure, gamification is an obvious overlap between play and design management. As games serve as the structures that generate play; so does design management set processes and structures to generate business value. Alexander Manu[22], a product designer and design innovator, posits that there is a game side inherent to business venture: competitive advantage, reward and merit (Manu 2006).

This is by no means a perfect analogy. Viewing design management, or any industry as a game assumes a certain rigidity of rules and clarity of purpose that is rarely found in a real-world setting. While a game perspective may offer improvement to current management structures and processes (Best's traditional business), it may be less effective in a transitional or transformational setting, where rules and measures are in constant flux. The potential of play in the workplace, Manu writes, doesn't lie in superficial symbols of play like colourful office decor or a pingpong table. He claims that embracing play in a more profound level could affect the very way we think about and discover meaning, purpose, and relevance (Manu 2006). Bruce's definition of play reflects this idea. Exploring free-flow play as opposed to structured games offers us the potential to explore the concept of control. Returning to Bruce's description, when free flow play "exerts no external pressure to conform to rules, pressures, goals, tasks or definite direction. It gives the player control." This control allows us to explore "technical prowess, mastery and competence we have previously developed" (Bruce 2005). Of gamification, Bernie De Koven has this to say,

> "[So] many of the truly accomplished readily confess to how much fun they are having doing whatever it is that they do. Gamification? They don't need no stinkin' gamification. They don't need to keep score, to get trophies. What they need is the opportunity to do the work they do best"
> *(Weldon et al. 2013)*

22.
Alexander Manu is a strategic innovation practitioner, international lecturer and author (alexandermanu. com). His contribution to this research are largely informed by his background as a design leader in product design and innovation.

Games, then, don't offer as much potential to enhance design management as the larger realm of play. Nonetheless, it's impossible to talk about play without mentioning games, as they are the most widely studied and immediately recognizable form of play (Manu 2006; Sharp and Thomas 2019). For this research, games will only be discussed as a familiar means through which to access play experiences.

C. Ambiguity

According to Sharp and Thomas, plays ambiguity is the key aspect through which players can make meaning out of play. They propose that "ambiguity with set-outsideness, shaped in ludic form, results in a metacommunicative openness that players resolve into meaning" (Sharp and Thomas 2019). Play experiences are necessarily a metacommunicative form because they require multiple layers of understanding and communication at the same time (Bateson 2000). Play is real and not real, does and doesn't exist, all within the same experience. As Eberle says, "play welcomes opposites" (Eberle 2014).

This ambiguity of the play experience lends to the aforementioned difficulty in describing and defining it. As Brian Sutton-Smith is often quoted, "[We] all know what playing feels like. But when it comes to making theoretical statements about what play it, we fall into silliness" (Sutton-Smith 2001; Bech 2014). This is also compounded by the fact that play means different things to different people and manifests itself differently according to the context, rules, and spaces involved (Bech 2014). As Sharp and Thomas put it, games are "always becoming, never the same thing twice".

FIGURE 5.

Ambiguity

23.
Brian Sutton-Smith was one of the more prominent play scholars of the last century, along with Roger Callois and Johan Huizinga. His book, the Ambiguity of Play, is considered an authoritative source on play theory (Meckley 2015).

D. Play for Adults

It is almost universally accepted by developmental psychologists that children learn and develop primarily through play (Gauntlett et al. 2012). Developmental psychologist Lev Vygostky[24] posits that play specifically helps children develop control and self-regulation of their learning. He also puts forward that children first explore language, symbol systems, and more advanced forms of meaning-making through play (Gauntlett et al. 2012). As Vygotsky put it, "human thought, culture and communication are all founded on the unique human aptitude for using various forms of symbolic representation for culturally defined meanings" (Gauntlett et al. 2012).

Because of the play's presence in childhood development, there's a common misconception that it doesn't hold the same value for adults. However, the research of Gauntlett et al[25] with the LEGO Foundation proposes that this isn't the case. Swiss developmental psychologist, Jean Piaget, identified five main categories of play that children develop as they grow: physical play, play with objects, symbolic play, socio-dramatic play, and games with rules (Manu 1995; Gauntlett et al. 2011; Bech 2014). These same categories, Gauntlett et al propose, translate directly into adulthood. Adults engage in physical play through fitness routines, team sports, martial arts, dancing, and the like. Hobbycraft and toys are common kinds of object play found in specific interest groups. Symbolic and socio-dramatic play in the form of visual arts, music, singing, dancing, and performing arts are ubiquitous in the digital media landscape. Finally, the area of games with rules tends to expand significantly once

24.
Lev Vygostky was a psychologist, known for his theories on social interaction and its effect on child development. He's also considered an early authority on the social dimension of play theory (verywellmind.com)

25.
David Gauntlett is a Professor of Media and Communications at the School of Media, Arts and Design, University of Westminster. The Future of Learning was a research conducted by Gauntlett's team for the LEGO® Foundation

one enters as this particular area of adult playfulness "least concerned with alternatives and imagination and are most concerned with rules and realities" (Gauntlett et al. 2011).

In her dissertation on incorporating play theory into interactive art installations, Tine Bech[26] found that adults tended to resist the invitation to play within the space. Bech links this resistance to the idea that play is seen as a "child's work", the acquisition of skills but in adults, it's seen as leisure (Bech 2014). Bech draws on Richard Schechner[27], who surmises that children are more comfortable with free-flow, explorative play simply because they spend more time playing. Adults, on the other hand, have to organize their busy worlds to make time for play (Schechner 2006; Bech 2014). However, adults don't lose their need for enjoyment and pleasure as they grow up (Eberle 2009). The behaviours surrounding play may change, but the drive to play remains (Gauntlett et al. 2011).

Bech's research in inviting adults to play emphasized the need for adequate spatial and design cues within an interactive experience (Bech 2014). However, this applies only in cases where the physical space surrounding the play experience can be curated and altered. In general cases of play, Gauntlett et al put forward that the success of a play interactions depends on the players' ability to signal each other "whether they are seeking play or not. These unspoken negotiations provide the most striking evidence of the intimate connection between play, expressivity and communication." (Gauntlett et al. 2011). This person-to-person interaction is key to unlocking the wider social stigma surrounding adult play.

26.
Tine Bech is a multidisciplinary artist with a PhD in Play Theory and Interactive Art. Her contributions to this research are from her doctorate dissertation on activating public spaces through playful, interactive art installations (Tine Bech Studio).

27.
Richard Schechner is a performance theorist, theater director, professor emeritus at Tisch University New York, and author of various books in performance studies. His contribution to this research display, yet again, the plurality of sources from which play theory draws (Tisch NYU).
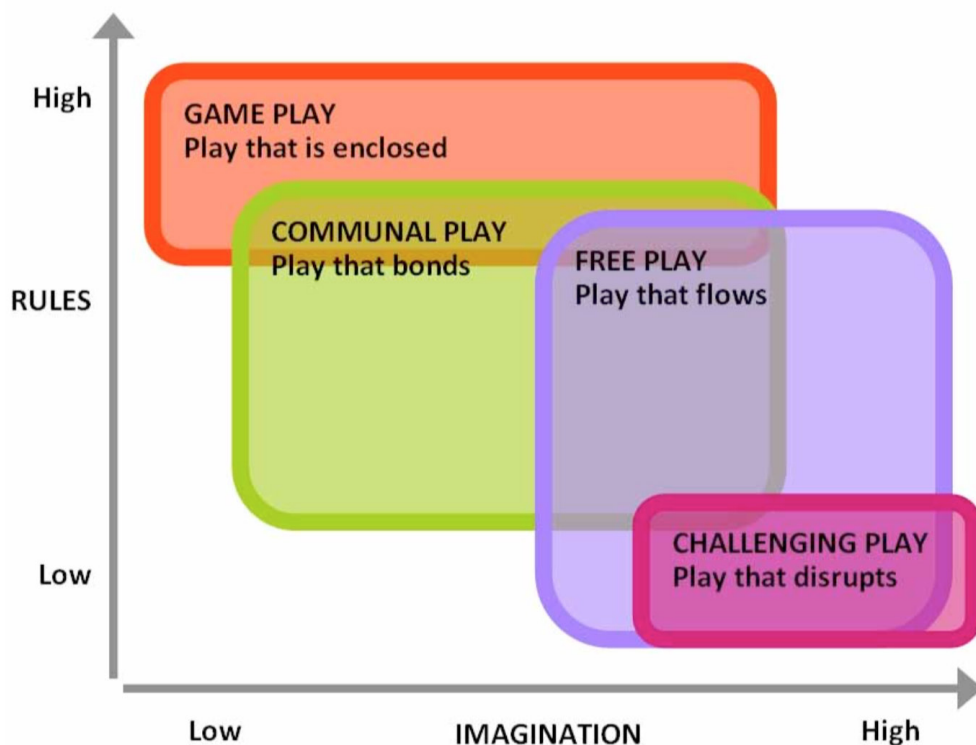
FIGURE 6.

Gauntlett et al's proposed specrtum of play across all ages and types.

To bridge the divide between child and adult play, Gauntlett et al propose a unified framework of play across all ages. The diagram is composed of four elements across an x and y-axis: imagination and rules, respectively. Gameplay – play enclosed by rules and goals – is on the opposite end of the spectrum from free-flow play. The communal play element illustrates play's well known for the ability for bringing people together (Sutton-Smith 2001; Bruce 2005; Eberle 2014). However, play could also be a positive force of disruption, illustrated by the challenging play element. Gauntlett et al note that this framework doesn't imply that these elements and their placements are set in stone. Within the right structure, gameplay can generate as much imagination as free play. The lack of overlap between communal play and challenging play doesn't imply that disruption is necessarily an individual undertaking, only that it tends to happen when players disregard rules and allow their imaginations to run wild (Gauntlett et al. 2011).

With our understanding of play theory and design management, in all their plurality, our discussion being its progress towards building a joint, adaptive framework between the two fields.

1.5
METHODS AND METHODOLOGY

For this research, I employed a predominantly qualitative approach. In particular, I draw from the interactive model of qualitative research put forward by John Maxwell[28] (Maxwell 2012). This model is particularly suited to the objectives of the research and the needs of the two main areas of inquiry: play and design management.

Like most qualitative methods, Maxwell's model emphasizes the importance of stories, process, and relationships between variables in observed phenomena. While this rooted in a description of the variables, people, and behaviours observed, the ultimate goal of this type of research is to derive an underlying meaning from these disparate parts (Maxwell 2012). The main reasons I chose this model is its explicit acknowledgement that data analysis and validity is more dependent on the context than any single research paradigm.

In our established understanding of play and design management, both areas are highly context-specific. Applying either field of knowledge in a practical setting comes down to the situation, the skills, and specific objectives of the individual. While this research strives to produce a practical framework for understanding play within design management, I'm aware of the fact that any insights I uncover cannot be directly applied to every single situation. Anyone who attempts to apply the findings of this research must first assess exactly how to do so, in their specific situation.

28.
John Maxwell is a professor emeritus at the College of Education and Human Development at George Mason University. He has authored multiple papers on qualitative and mixed methods research, program evaluation, sociocultural theory, Native American societies.

In the absence of universal truths, Maxwell's interactive model introduces the concept of flexibility in understanding. In this frame, validity isn't determined by logical consistency or adherence to any fixed principles; rather, it's determined by its compatibility to the context of the inquiry (Maxwell 2012).
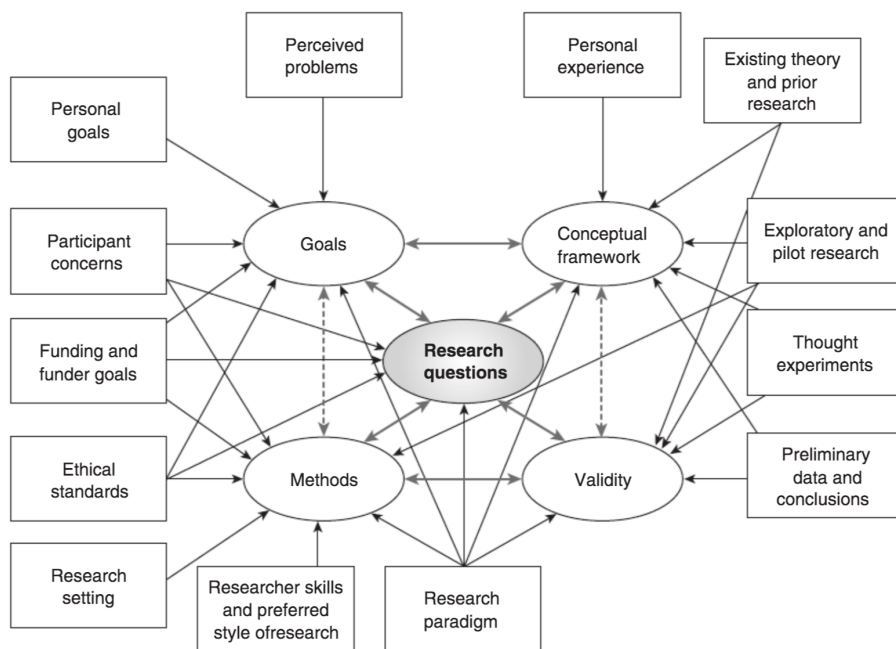
The bulk of my research is supported largely by a literature review that examines the existing relationships between play and design management. From this, I proposed a possible road towards a more profound integration between the two. To ground this theory in practice, I view it against insights from semi-structured interviews with design leaders, David Marchant[29] and Natalia Zuluaga Lopez[30]. My interviewees were selected for the contrast of their personal stories within design management. David Marchant is the current head of Design and Innovation at Pepsico Europe, working across multiple design teams to deliver products and services across multiple brands. His background in leading design strategy is built on 15 years of work with multinational companies like Procter & Gamble. Natalia Zuluaga Lopez is the Director of Content & Brand at Portland Communications, a personal relations company dealing with media and communications. Her perspective of particular interest because before her entry to the company, Portland Communications didn't have a design department. In 6 years, she built a design department within the company from scratch. Marchant also plays a pioneering role for design innovation within Pepsico, although his circumstances offer a different perspective and set of experiences.

FIGURE 7.

An interactive model of qualitative research (Maxwell 2005)

29.
David Marchant is the current Head of Design at Pepsico, Western Europe. His previous experience includes two decades of design work at Procter & Gamble and Wolff Ollins (Marchant 2019).

30.
Over her 6 year career at Portland Communications, Natalia Zuluaga Lopez worked her way up from one of the few in-house designers, to the Design Director of Portland's own design department. She has recently pivoted to a new position as Portland's Director of Content & Brand (Zuluaga Lopez 2019).

2.1

CHALLENGES OF THE FOURTH INDUSTRIAL REVOLUTION

We've covered the essential qualities of play (set-outsideness, ludic forms, and ambiguity) and how these influence play's many forms: structured and free-flow, communal and disruptive. We've also discussed the practice of design management, particularly, it's inherent flexibility in actual practice. Most importantly, we've established that design management's main purpose: leveraging design to generate continuing business value.

Literature in both areas points to one common factor: dependence on context. A range of individual, situational, and environmental factors are what determine which form play might take, or which design management strategy might be applied. However, this commonality is not enough to prove that there is a relationship between play and design management. To create a common foundation on which to discuss them both, we must examine the current context they reside in.

The world has entered an era that some call the Fourth Industrial Revolution, sometimes Industry 4.0 (Schwab 2016; Leopold et al. 2018). The previous industrial revolutions were all radical and large scale innovations marked by groundbreaking advances in technology like agriculture, steam power, and most recently, digital information technology. What separates this most recent revolution,

Schwab[31] claims, is not any single form of technology. Rather, it's the velocity, scope, and degree at which society has integrated with digital technology, and the profound impact this integration has had on social, economic, and political systems (Schwab 2016).

The sheer speed at which these system-wide changes are occurring makes it difficult to discuss them from any single viewpoint. The scale of these shifts adds another layer of complexity that prevents us from discussing, indeed, fully understanding just what is happening in our larger world. Yet discuss it, we must. The scale of social and technological changes propelling our world ensure that they will proceed, with or without our understanding them. Indeed, although these changes are being felt on a global scale, Schwab notes that a good number of public and private institutions are still operating in a mindset more appropriate for a previous era (Schwab 2016). If we are to gain control of our own lives and the well-being of our communities, we must be able to learn how to work within this complexity.

Jeff Conklin[32] suggests that the confusion we feel in this situation is not an effect of the complexity itself, but the forces of fragmentation within it. Fragmentation, he writes, is the result of disunity among potential collaborators, where their "perspectives, understandings, and intentions" are "chaotic and scattered" (Conklin 2006). These forces are technological complexity, wicked problems, and social complexity. The only way that we could tackle an issue as large and tricky as system-wide change, he claims, is through generating a shared understanding of the problem and the fragmenting forces within it (Conklin 2006).

31.
Klaus Schwab is Founder and Executive Chairman of the World Economic Forum, the International Organization for Public-Private Cooperation. Co-founded the Schwab Foundation for Social Entrepreneurship with his wife Hilde and advised numerous other communities "providing global expertise and knowledge for problem-solving" (World Economic Forum).

32.
Jeff Conklin is Director at the CogNexus Institute, a foundation "dedicated to building a shared understanding of Wicked Problems". His contribution to this research is based on writings on his Dialogue Mapping™ facilitation technique, a practical method to tackling wicked problems in the corporate setting (CogNexus Institute).

A. Technological complexity

While Jeff Conklin identifies technological complexity as one of the forces that could prevent the formation of a shared understanding, this isn't to say that technology in itself is a bad thing (Conklin 2006). Many of the boons of this new era are enabled by such technological advances. Because of developments in communication and information networks, it's possible for people to effortlessly share knowledge and hold casual conversations across entire continents (Thackara 2006; Castells 2013). The World Economic Foundation identifies that the widespread presence of high-speed mobile internet, the development of artificial intelligence, widespread adoption of big-data analytics, and cloud technology are set to be the top drivers of positive business growth in the next few years (Leopold et al. 2018)[33]. However, these boons can just as easily be turned against us. The widespread misinformation campaigns that characterized recent elections in multiple national governments wouldn't have been possible without the ubiquitousness of social media (Ressa 2016; Ong and Cabanes 2018)[34]. While technology can drive business growth and job creation, emerging technologies like automation also have the potential to displace entire roles (Leopold et al. 2018).

Technology, in whatever form it may take, is just one of the many tools at our disposal. We could use it to forward our society or we can use it without thinking about the repercussions it might have on other people. Either way, human skills and intent are still at the centre of this technological advancement. The World Economic Foundation identifies "human skills" as the most vital in the 21st century business: analytical thinking, active learning, and learning strategies (Leopold et al. 2018). While proficiency

33.
Till Alexander Leopold is Head of Inclusive Economies Practice at Centre for the New Economy and Society in the World Economic Forum. His contribution to this research is from the Future of Jobs Report published by the WEF in 2018 (World Economic Forum).

34.
In a deep ethnographic research funded by the British Council, Jonathan Corpus Ong and Jason Cabanes mapped out the misinformation networks used to sway democratic process in the Philippines. Maria Ressa is a journalist who conducted multiple exposés on the same topic.

in technology is an obvious necessity, it only forms one part of WEF's proposed skills equation. A much higher emphasis is put on "creativity, originality and initiative, critical thinking, persuasion and negotiation". They also note that attention to detail, resilience, flexibility and complex problem-solving as other essentials for the coming years (Leopold et al. 2018).
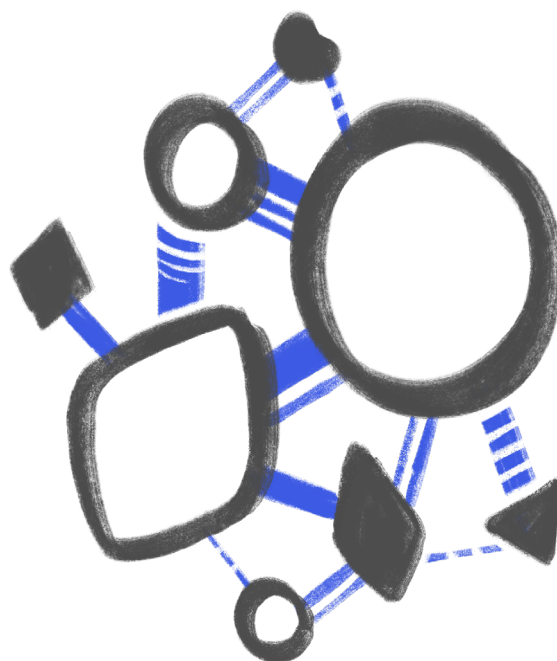
It's important to understand that technological complexity isn't rooted in the technologies themselves, but the way that technology changes human behaviour (Manu 2016). Manu proposes that technology should be viewed as the physical counterpart of a larger behaviour space, or a "platform for manifest behaviour around specific goals & motivations" (Manu 2016). Back in 2007, it was easy to view the iPhone as one gadget out of many. However, in the years that followed, we can now easily recognize the new behaviour space that this single product spawned. With the introduction of developer tools and the App Store, the iPhone simply became a platform to contain a wide array of interactions and behaviours, enabled by different applications. Manu notes that once a new behaviour context is introduced, it makes a "permanent change that begets future change" (Manu 2016). Indeed, once the iPhone and other smartphones were introduced to mass market, we saw a wave of changes across social norms, product design, user experience and user interface design, and many other areas of human life.

Responding to technology and the potential behaviour spaces they imply requires a profound shift in the way we solve problems. On top of the human skills equation proposed by

FIGURE 8.

Technological compexity

33.
Till Alexander Leopold is Head of Inclusive Economies Practice at Centre for the New Economy and Society in the World Economic Forum. His contribution to this research is from the Future of Jobs Report published by the WEF in 2018 (World Economic Forum).

the WEF, Manu claims that designers also have to rethink the way our practice is leveraged. Designers, he writes, must adapt to these changes through and inside-out rather than outside-in approach. Inside-out design is characterized by the ability to act on field intelligence, unlearn legacy processes, reframe & rethink tools and metrics, all in the context of a strategic, systems-thinking approach (Manu 2016). While Manu writes about these undertakings as the realm of designers, it's evident that design managers also have a large role to play in this proposed approach to design.

B. Wicked Problems

The scale and complexity of the problems we're dealing with calls for a systems-thinking perspective: approaching problems as a part of a wider system of problems, rather than a binary, problem-solution area (Chapman 2011). This approach complements Manu's perspective of technology as an enabler of behaviour, a part of a larger system. However, technological complexity is only one force within the problems design managers must face. It's not enough to simply understand systems; we must understand how to take meaningful action within them.

Coined by Horst Rittel in 1973, wicked problems are a "class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications of the whole system are thoroughly confusing" (Buchanan 1992). They have no definitive problem statements or solutions. Without a set statement of the problem, the search for solutions is open to interpretation. The constraints surrounding the project are continuously evolving throughout the problem-solving process. Past experience cannot be directly

35.
Horst Rittel is a design theorist who is best known for coining the term "Wicked Problems" in his paper Dilemmas in a General Theory of Planning (Buchanan 1992).

applied to these problems, as no two wicked problems are alike. All these qualities exist in shifting social context, which includes the stakeholders engaged in problem-solving (Roberts 2000).

It's important to note that these criteria are more of a description than a definition. They help one spot a wicked problem for what it is, but they offer no insight on what exactly contributes to the wickedness of

FIGURE 9.

Wicked problems

a problem (Conklin 2006). However, Conklin notes that recognizing wicked problems is the first step towards solving it. Robert Sternberg[36] agrees, saying that the "difficulty in problem-solving lies not in solving the given problem, but in figuring out what the problem is that needs to be solved" (Gauntlett et al. 2012). Recognizing the wicked nature of a problem is often the first obstacle that organizations fail to hurdle. In their seminal writing on organization learning, Donald Schön and Chris Argrys[37] posit that top-level decision-makers in a rigid, authoritative structure could impose an organization-wide denial of a wicked problem (Schön and Argyris 1996).

Coping with wicked problems is a highly contextual undertaking. These problems are so convoluted that no one problem solver or team could hope to solve them all on their own. Conklin suggests that managers simply have to work within their limited power and resources. Tackling a wicked problem, he claims, is limited by the amount of time, money, and people that an organization is willing to invest (Conklin 2006).

36.
Robert Sternberg is currently Professor of Human Development in the College of Human Ecology at Cornell University. His theories in intelligence, creativity, and leadership center around the improvement of education (Robert J. Sternberg). His major contribution to this paper is drawn from his intelligence theory.

37.
Donald Schön and Chris Argrys' book on organizational learning, of the same name, is considered an authoritative source for managers and educators alike. It is cited in many works on individual and organizational learning processes.

This makes it evident that leadership is a key factor in solving problems in the fourth industrial era. Design leaders, in particular, have to be mindful of the larger systems in which their designers and organizations move. They must have an understanding of the effect that the wider systems of products and services have on their design delivery. In turn, they must also be aware that their design efforts have on the world at large (Papanek[38] 1974; Thackara[39] 2006). Since there's only so much that a single project, team, or even organization can achieve in this sense, making meaningful advances in a wicked problem requires collaboration across different groups of people (Buchanan 1992; Roberts 2000; Conklin 2006)

38.
Victor Papenek's book Design for the Real World is a touchstone for design ethics in the contemporary world. Although written from a product design perspective, the book applies to most every field of design.

39.
John Thackara is a prominent author, whose commentary on the complexities of art, design, and technology are cited across contemporary design management literature.

C. Social Complexity

Social complexity in problem-solving is not unique to the current context. Neither is having to deal with new technology and complex, larger than life problems. These have always been struggles within management and humanity at large (Thackara 2006). Again, it's the unforeseen velocity and scale of impact on human life involved that make dealing with these systemic change more urgent than ever before.

Now more than ever, the nature of today's problems call for collaborative teams with diverse skill sets, mindsets, cultures, and so on. With each player bringing their own "individual experience, personality type, and style of thinking & learning", a team is better able to form a nuanced, actionable understanding of even the largest of problems. However, the more diverse the team, the higher the levels of social complexity that fragment their understanding. Conklin suggests that the priority of
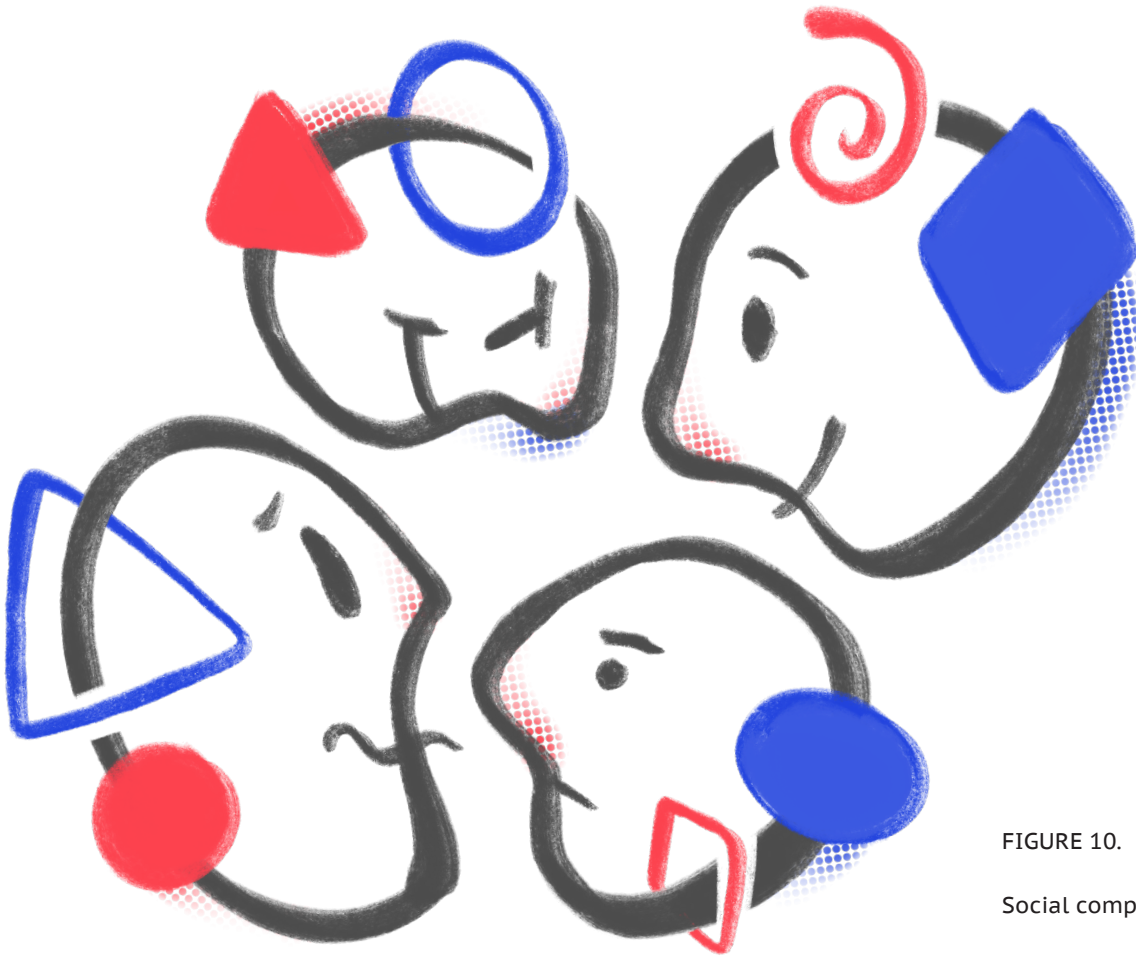
FIGURE 10.

Social compexity

managing diverse teams is to build a shared understanding of both the problem, its place in the larger context, and its place within the different goals present in the team (Conklin 2006).

In his discussion of social complexity, Conklin fails to address another potential vector of diversity: the increased influence of users in design decisions. Digital platforms that encourage networking, autonomy, and collaboration have opened the door for previously passive consumers to become "empowered creators" (Manu 2006). Manu observes that businesses tend to struggle with this new paradigm, not knowing exactly how to best mobilize this new force of active customers. Although not all customers make the choice to engage with brands and corporations, Manu claims that those who do engage, "raise the bar for corporations, and critically align themselves with values and concepts embodied by tech, companies, business" (Manu 2006).

D. Result of complexity: a values shift

In a practical setting, these physics of fragmentation are often obscured by a culture of resignation and denial (Conklin 2006). If an organization constantly finds itself with large-scale, unsolvable problems, it becomes a "chronic organizational pain" that fades into the background noise (Conklin 2006). He posits, however, that these forces are merely the causes of the condition, not the condition itself. The underlying condition that all companies, all industries, all people are facing now: what is exactly our place in all this complexity?

Design professionals across all levels of rank and experience, and the very way we understand design management is confronted with this question of relevance. What is the value that design management has to offer in the context of the fourth industrial revolution?
Is it design management's ability to facilitate strategy creation and guide businesses through transitions and transformations, as suggested by Best, Cooper, Borja De Mozota, and so many other authors in the field? Drilling this further into the question of this research, what is the play's place in all this? Is it the adaptive aspect pointed at by Panksepp and Biven? Perhaps the potential for disruption suggested by Bruce and Gauntlett et al?

Manu suggests that the technology driving the fourth industrial revolution are not just changing the way we work, but the very way we live and learn as entire human beings (Manu 2006). The changes happening in the larger system of human society are being reflected in the system of identity, knowledge, and values that comprise an individual. Changes in the way we create value and exchange knowledge, Manu suggests, are changing hand-in-hand (Manu 2006).

The increasing interconnectedness of society plays a part in directing values change as well. Dan Pink[40] surmises that the awareness of our effect on a larger system of people has changed the way we value business efforts. Social enterprises that maximize purpose over profit are becoming a common part of the landscape (Pink 2011). Open source business models and network intelligence founded on completely voluntary, unpaid contributions have also seen a rise in the last few decades (Gumpenberger et al. 2014).
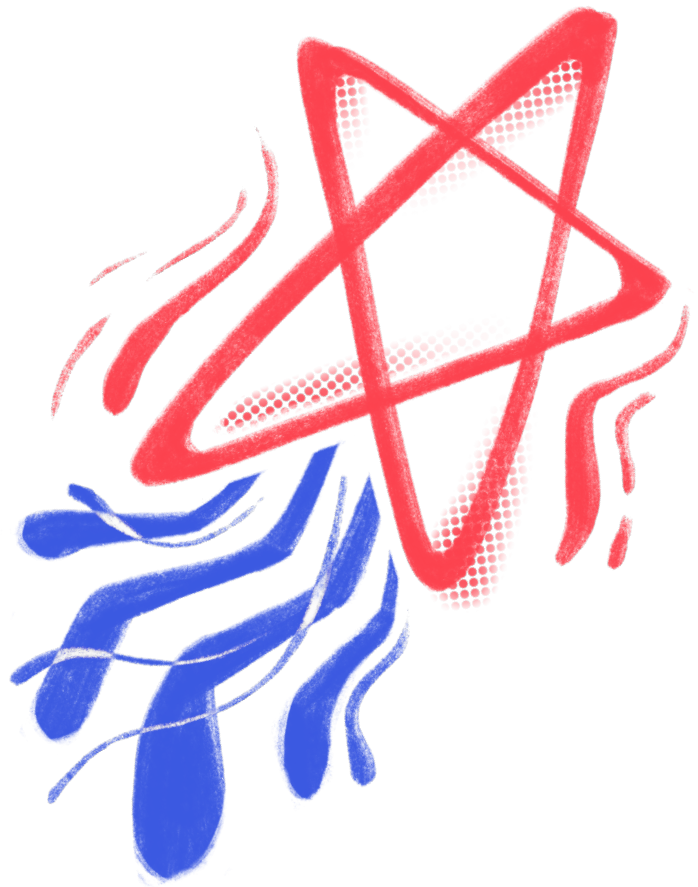
One thing is clear: design managers must have the ability to adapt to these profound changes to continue generating business value through design. As Schwab claims, the momentum of system changes will carry on, with or without you and your company (Schwab 2016). Equipping ourselves with an understanding of the complexity, wicked problems, and values change is the first step. However, this in itself doesn't ensure adaptation. Adaptation isn't merely the acquisition of knowledge, but the ability to put new knowledge into action (Manu 2016). Putting this into management terms, a well thought out strategic intent doesn't necessarily translate into strategic action needed to make the intent a reality (Burgelman and Grove 1996)[41]. In other words, design management practitioners need to know how to direct their organization's actions, through this current uncertainty, and towards a more optimistic view of the fourth industrial revolution.

FIGURE 11.

The value of design management in the fourth industrial revolution: adaptation

40.
Dan Pink is the author of several books on behaviour, management, and self-fulfillment. Though his contribution to the discussion of self-determination is limited, he provides a more contemporary counterpoint for the other sources in the research.

41.
Robert A. Burgelman and Andrew S. Grove co-authored Strategic Dissonance, a paper on the reality of strategic intent and strategic action.

2.2
SELF-DETERMINATION THEORY

The study surrounding self-determination theory (SDT) may offer some insight into how design managers could more proactively navigate these changes. Edward Deci and Richard Ryan[42], two of the main voices of contemporary SDT, claim that this field studies "the adaptive design of the human organism to engage in interesting activities, to exercise capabilities, to preserve connectedness in social groups & to integrate interpersonal experiences to a relative unity" (Ryan and Deci 2000). They suggest that well being can be achieved through a balance of this innate growth instinct with any external motivation to change and adapt. Jean Piaget supports this theory of an internal instinct to grow, as all children are "active learners, searching for the meaning of their experience" (Gauntlett et al. 2012). In this, adults are no different from children. Whether we are aware of it or not, we are all seeking to change and improve ourselves to, in turn, improve our quality of life. Self-determination theory identifies three main needs that, when addressed, could contribute to a self-directed life: autonomy, competence, and relatedness (Ryan and Deci 2000).

Deci and Maarten Vansteenkiste describe autonomy as the universal urge to "be in charge of one's own life & act in harmony with one's integrated self" (Deci

42.
Edward Deci and Richard Ryan are considered the founders of self-determination theory. Deci and Ryan are both experimental psychologists and professors at the University of Rochester (Rochester Review 2002)

and Vansteenkiste 2004). This is not independence from others, they caution, but rather, the personal empowerment to influence one's direction. Hand-in-hand with the need for autonomy is the need for relatedness, a complementary desire to care for, interact with, and be connected to other people (Baumeister and Leary 1995)[43]. Competence, according to Robert W. White[44], is one's efficacy in dealing with the needs of one's own environment (White 1959). In combination, a person with the ability to meet the needs of their environment, the freedom to direct their actions, all in the context of a social group should be in an optimal position to grow and flourish. While no need seems to precede the other in importance, competence requires further discussion. In our discussion of the fourth industrial revolution, we found that the definition of "competence" is in flux (Leopold et al. 2018). The skills required in most jobs are changing as technology becomes more integrated into our daily lives. While competence isn't limited to one's ability within the workplace, there's no denying that this constitutes a large part of contemporary identity (Laloux 2014).

The discussion of competence brings up the concept of flow. In cases where the challenges of one's environment are perfectly matched with one's level of competence, it's possible to enter an "experience of total absorption in [an] activity and non-self-conscious enjoyment of it" (Csikszentmihalyi and Csikszentmihalyi 1975)[45]. If the skills called for by our work environments are changing so rapidly, does this pose a threat to one's ability to meet challenges and, thus, enjoy oneself at work? In his book about the next stages in human organizations, Frederic Laloux[46] writes about the widespread phenomenon of disengagement felt by employees and top-level decision alike (Laloux 2014). Conklin alludes to chronic

43.
Roy F. Baumeister and Mark Richard Leary co-authored the paper The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation. Their research interests intersect at social and personality psychology, with a focus on social motivation .

44.
Robert W. White is a psychologist with research interest in abnormal personalities (Harvard Psychology)

45.
Mihaly Csikszentmihalyi is Claremont Graduate University's Distinguished Professor of Psychology and Management. He is also the founder and co-director of the Quality of Life Research Center (QLRC). He is the first writer to recognize and coin the concept of flow (Claremont Graduate University).

46.
Frederic Laloux is a former Associate Partner with McKinsey & Company and writer of Reinventing Organizations, a possible future for management practice (Laloux 2014).

organizational pain, a culture of resignation and denial that results from an organization's inability to feel progress in solving complex, long-term problems. Both Deci and Csikszentmihalyi's writings on the matter agree: experiencing regular moments flow is important for long-term internal motivation because too much challenge results in "anxiety and disengagement". On the other hand, the lack of challenge in relation to one's skill results in "boredom and alienation" (Gauntlett et al. 2012).

Dan Pink touches on SDT in Drive, a popular book on internal motivation, He posits a slightly different set of needs that must be met to foster growth: autonomy, mastery, and purpose (Pink 2011). His discussion of mastery directly corresponds to Deci and Csikszentmihalyi's understanding of competence. Gauntlett et al, however, point out that Pink's framework doesn't directly address the interplay between autonomous movement and its relation to a larger social group (Gauntlett et al. 2012). By replacing relatedness with purpose, Pink opens the implication that one's higher purpose could exist independently of one's place in society. In doing so, Gauntlett et al claim that this limits the discussion of autonomy compared to SDT's wider understanding of the concept (Gauntlett et al. 2012). While Pink doesn't directly address this change, it may be because his writing is positioned as a guide to individual motivation first. He discusses relatedness, not as an element of internal motivation, but an external factor prompting change (Pink 2011).
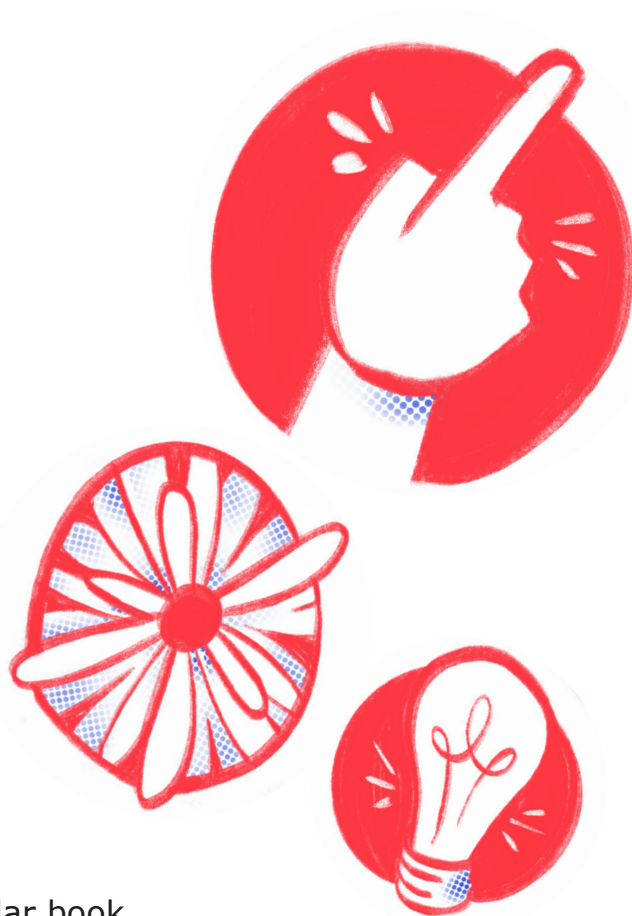

FIGURE 12.

The three human growth needs according to self-determination theory (Top to bottom): ambiguity, relatedness, and competence

Laloux also refers to SDT's proposed growth needs in his characterization of Teal organizations, a new mindset of organizing based on Ken Wilbur's stages of human evolution. He posits organizations geared towards transformation exhibit signs of self-management, acknowledge the wholeness of the human experience, and have evolutionary purpose (Laloux 2014). He doesn't propose these behaviours as a template for all transformational businesses. He merely suggests them as behaviours and attitudes that may help point an organization towards a more profoundly human-centred method of management. In his discussion of the three signs, it's interesting to note that he has a counterpart for SDT's relatedness (in wholeness) and one for Pink's purpose. SDT's autonomy and competence are distributed between his discussions of self-management and wholeness (Laloux 2014). Unlike Pink, Laloux draws a direct line between our relationship with our whole selves (and the people around us) and the need to continuously adjust organizational purpose according to changing needs. To effect meaningful, profound evolution within itself, an organization mustn't merely adapt its strategy according to the changing needs of the environment, but also to the needs of all the human lives it affects (Laloux 2014).

The concept of self-determination, then, is at the centre of our discussion of play and design management. There are slightly different views on how true self-direction in our current context can be attained, but all seem in agreement that it involves developing an internal sense of motivation and a systems-thinking approach to thought and action. This is the value that design managers seek to create for themselves, their organizations, and the human society they move within. With this clarity in mind, it's time to invite play back into the discussion. Does play have a part to play in the self-directed change that design management seeks?

3. INVITING DESIGN MANAGEMENT TO PLAY

3.1

WHY CHOOSE PLAY?

A. Play enhances Metacognitive Thinking

Metacognition is "thinking about thinking" and considered the key to successful learning (Gauntlett et al. 2012). In his triarchic theory of human intelligence, Robert Sternberg suggests that successful intelligence is the "ability to balance the needs to adapt, shape, and select environments in order to attain success, however one defines it, within one's socio-cultural context" (Gauntlett et al. 2012). Among other things, this involves the ability to understand new tasks and situations, and selecting which strengths and skills to apply, selecting a mental representation of the components and strategies involved, and monitoring the problem-solving process during and after. Sternberg separates these higher-order, metacognitive skills from the performance skills used in the actual tasks of problem-solving themselves. However, he claims that both of these elements of applying intelligence to problem-solving are mutually dependent. Metacognition is especially important when dealing with wicked problems, as recognition of a problems nature – wicked, complex, or simple – is the first step in solving it. This recognition is a vital skill for design managers and leaders, who have to decide how much time and resources to direct at a given problem.

As Bateson claims, play's ambiguity makes it a metacommunicative process itself. Gauntlett et al posit that play can have the potential to enable self-determination and learning by serving as a metacommunicative training ground. Play experiences, they claim, can encourage symbolizing, forethought, vicarious learning, self-regulation, and self-reflection. For Albert Bandura, symbolizing our experiences doesn't just enable us to communicate vital information, but also provides us with the means to create structure, meaning, and continuity in our lives (Bandura 1986). Meaning-making, as Manu says, is natural to humans as evidenced by our proclivity towards symbol systems like language (Manu 2006). Design is a practice dedicated to creating such organizing symbol systems.

FIGURE 13.

The performative and metacognitive levels of thinking according to Robert Sternberg (Gauntlett et a. 2012)

In play, symbolizing manifests in the aptly named form of symbolic play, particularly in storytelling. Gauntlett et al write that adults, even with the breadth of symbol systems available to them, still tend to have difficulty solving abstract problems. They have less difficulty, however, with problems symbolized within in a socially meaningful context, like a narrative or a relatable persona (Gauntlett et al. 2011). Forethought and vicarious learning are offshoots of the skill of symbolizing. Forethought is the ability to plan courses of action, anticipate consequences,

and set goals in the future. Vicarious learning is the ability to learn from observing others' experience. Both these skills require one to make leaps of thinking by attaching meaning to real-world symbols and occur in any form of play across the spectrum.

Most important out of these skills are the abilities to self-regulate and self-reflect. In their writings on reflective practice, Schön and DeSanctis stress the importance of one's ability to scrutinize and make sense of one's actions and thinking as part of developing as a professional (Schön and DeSanctis 1986). The concept of reflective practice doesn't stop at an awareness of thoughts, but in how these thoughts can influence one's actions, efficacy, and long-term mastery. Vygotsky posits that socio-dramatic play is particularly helpful in training these skills. Staying in a certain role, he says, requires self-regulation and no small amount of self-control. Play involving construction and other creative activities, he goes on, are useful in training what he calls "private speech", an internal monologue used to support self-regulatory and self-reflective processes (Gauntlett et al. 2011).

In whatever form play might take, all types of play hold potential in helping metacognition because of its essential qualities. As Sharp and Thomas claim "ambiguity with set-outsideness, shaped in ludic form, results in a metacommunicative openness that players resolve into meaning" (Sharp and Thomas 2019). In the context of a safe environment, play gives players the opportunity for "behavioural and cognitive innovation" and a space to practice newly developed behaviour – external and internal (Smith 2010).

B. Play enhances Adaptation

For David Kolb, learning is a "lifelong process and involves the entire individual (thinking, feeling, perceiving, and behaving)" (Kolb 2014). Moreover, it's a process of human adaptation that encompasses all life stages. Kolb writes that this includes limited adaptive concepts such as creativity, problem-solving, decision making, and attitude change. In essence, all the concepts that we've discussed up to this point are central elements of the larger effort of human adaptation. Finally, Kolb separates the ability to respond appropriately to a given situation is just one part of learning. True learning, he claims, results in being able to continuously translate ideas into practice, apply imagination to real problems, and "make a difference in their own lives and others" (Kolb 2014).

Manu claims that imagination, in particular, is in urgent demand. Previous industrial eras required businesses to either mechanize or digitize the way they worked, processes that require creativity, but not much imagination (Manu 2006). Now, however, neither the technological ability nor creativity alone is enough to keep a business afloat. The contemporary business challenge, Manu claims, is the ability to apply imagination to integrate technology and creativity for a strategic purpose. Manu draws a clear line between creativity and imagination. Creativity, he claims, is a development tool applied to a defined or otherwise pre-existing

FIGURE 14.

An illustration of the proposed exchange between imagination and creativity (Manu 2006)
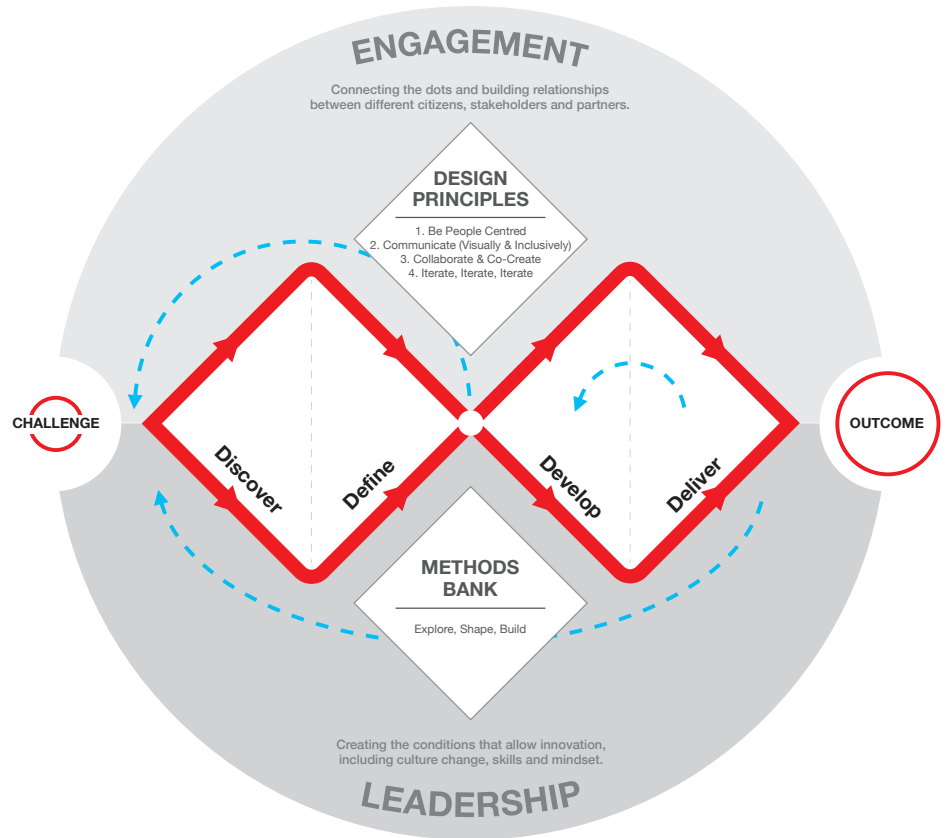
problem area, and tends
to lead to interpretation.
Imagination, on the other
hand, is a playfulness of
thinking that allows us to
explore possibilities beyond
existing tools and problems
(Manu 2006). This distinction bears a similarity to
Sternberg's dichotomy of performance and metacognitive
thinking. The former is geared towards a task at hand, with
concrete and immediate application of skills for a given
situation. The latter looks beyond the current situation,
taking cues from the past and projecting into potential
futures. However, both are required to work together to
lead to the successful application of intelligence (Gauntlett
et al. 2012). Like the different levels of thinking, creativity
and imagination are both required to function in a practical
setting. Imagination might have the potential to pull design
managers and leaders out constraints and assumptions,
but they still need a structure to tether them to some form
of reality. In this convergence, creativity's limitations help
guide leaders towards a feasible, viable, and desirable
course of action (Ideo 2015).

Here we see similarities with existing models of creativity
familiar to designers and design managers. The Double-
Diamond model of creativity uses cycles of divergence and

FIGURE 15.

The modified Double-
Diamond proposed by the
Design Council UK in 2019
(Drew C 2019)

Although the model more
explicilty acknowledges
the non-linear nature of
problem solving, it still
assumes a limited problem-
solution space.

convergence to stretch ideas, then pull them back into the requirements of the given brief and constraints of the project (Drew C 2019). While this approach is useful in defined problem-solution spaces, it doesn't hold up with the amount of fragmenting forces present in a situation like, say, the future of an entire organization (Hill 2012).

In the context of design management, it's clear that play experiences hold the potential to point design managers towards learning and eventually, long-term adaptation. However, our discussion so far has been focused on individual learning and discrete play experiences. While it's important to understand the individual learning process to apply this learning to the larger organization, the latter is far more complex (Wang and Ahmed 2003). For Catherine Wang and Pervaiz Ahmed[48], scaling learning upwards in scale is not just a "collectivity of learning processes" but a complex system of interactions between individuals within and outside of the organization in question. While play experiences in themselves hold a lot of value for participants, they might not necessarily contribute to learning unless they're situated in a larger, long-term context (Gauntlett et al. 2012; Kolb 2014). Both issues point toward a structure for application into a practical, design management context.

48.
Catherine Wang and Pervaiz Ahmed co-author a critical review of various organizational learning approaches.

3.2
BUILDING THE PLAY LEARNING MINDSET

A. Basis: The Playful Mindset

Drawing on the work of Nick Yee and Mizuko et al, Gauntlett et al propose three modes of engagement which "invite participation and creativity", frames of mind in which one might engage with a particular experience. These modes are the immersion orientation (a non-competitive mode of exploration); the social orientation (a relaxed, collaborative attitude_; and the mastery orientation (an intense and committed approach) (Gauntlett et al. 2011). Gauntlett et al place these modes of engagement on a continuous spiral flow and links them with the qualities a playful mind: attention, care, mindfulness, and provocation. While the qualities are strongest at specific points across the model, they can be present throughout the spiral in different degrees. The spiral, Gauntlett et al write, is meant to display how each mode engagement could potentially flow into the other, rather than a set process. In understanding this model, it's easier to imagine them as a progression of expertise in a certain problem area, but not the solving of any one specific problem.
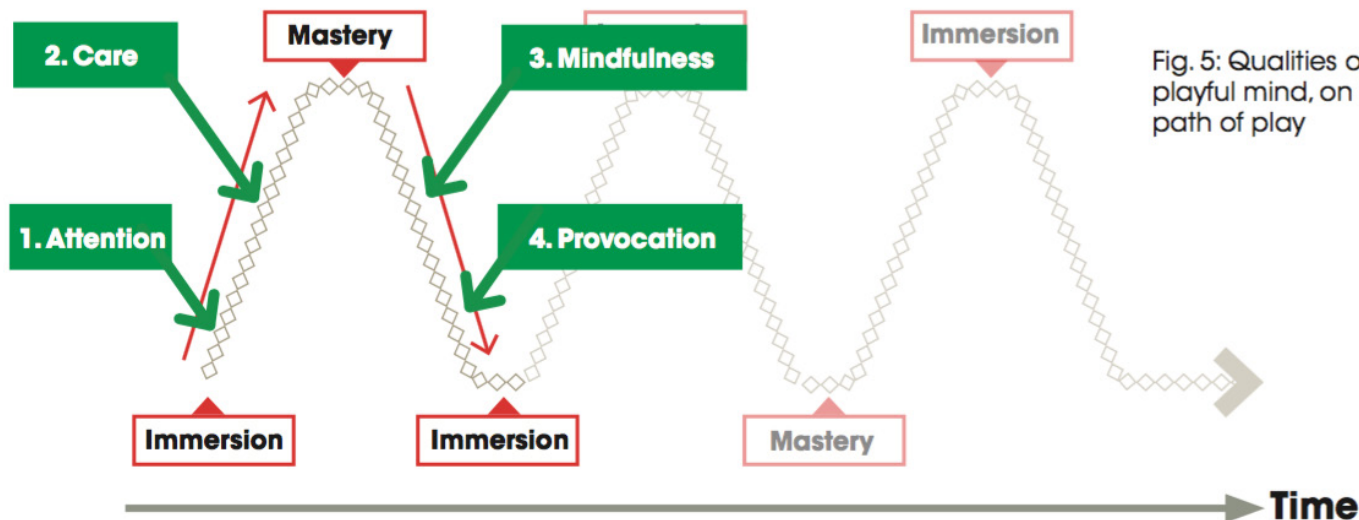
Mastery

2. Care

3. Mindfulness

Immersion

Fig. 5: Qualities of playful mind, on the path of play

1. Attention

4. Provocation

Immersion

Immersion

Mastery

Time

SPIRALLING BETWEEN THE IMMERSION AND MASTERY ORIENTATIONS

FIGURE 16.

Gauntlett et al's proposed path of developing learning and creativity and play, and the qualities of the playful mind.

Returning to the concept of flow presented earlier in the discussion, Csikszentmihalyi posits that flow can be sustained on a long-term scale as well as individual experiences. Flow, he writes, isn't simply the process of doing something enjoyable, but about gaining mastery over the attention given to tasks and thinking processes. This may include the task at hand (performance thinking) and "what could be happening elsewhere, and what might happen in the future" (metacognitive thinking) (Csikszentmihalyi 2009). Furthermore, he claims that the experience of flow is a "reclaiming experience" that gives one "a sense of participation in determining the content of life". In this, Csikszentmihalyi posits that flow doesn't just contribute to mastery, but a feeling of autonomy.

In the discussion of a play mindset rather than a play experience, it's important to make a distinction between the performance and meta elements involved. It's not possible, for example, maintain a literal set-outsideness throughout one's life, as one very much has to be present in their reality. However, it's possible to apply the feeling and way of thinking one feels while in a set-outside, ludic

form to certain situations in "real life". This blending together of experience and mindset, reality and make-believe, performance and meta, are all part and parcel of play's ambiguity. In the case of applying this to design management, it's up to the practitioner discretion to resolve these different levels into whatever meaning works best for their own situation (Gauntlett et al. 2012; Sharp and Thomas 2019). In this sense, generating feelings of autonomy and mastery through attentive flow experiences could lead to the fulfilment of a design professionals growth needs in the long term. All it needs is a structure to sustain it over time.

Attention is most present at the first point of immersion because the person engaging with the experience is not yet familiar with the needs of their situation. They're paying the most attention to their performance processes, and more actively strategizing on how to proceed. At this point, the participant is still striving towards flow, but may not yet experience it. As the participant spend more time immersed in the problem area, they become more aware of the skills and thinking required of them. At this point, they can elevate their tasks into a craft. This care for their work isn't just a function of ability relative to the challenge (flow), an expression for the innate desire for growth and competence (Ryan and Deci 2000; Manu 2016).

Once a level of mastery is reached, it possible to fall into mindlessness, "the human tendency to operate on autopilot, whether by stereotyping, performing

mechanically, working by rote, through expertise, or simply by not paying attention" (Langer 1989). Ellen Langer posits that, paradoxically, the more we know, the more likely we are to act mindlessly. Experts, she claims, are especially prone to mindlessness when they "blindly rely on acquired skills or apply standard routines" (Langer 1989). At this point in the engagement, a playful should display mindfulness and a beginners mindset. Cultivated by regular play experiences, the metacognitive skills of self-reflection and self-regulation, and an attitude of openness can help push the practitioner to seek new knowledge or a new way of thinking.

As a practitioner seeks a new area of learning to explore anew, they take on they a provocative quality that seeks to disrupt the status quo of mastery they've attained. While certain aspects of play lend themselves to cooperation and harmony, it can have a challenging quality to it (Gauntlett et al. 2011). Within the context of play, we are free to stretch the constraints of conventional thought, create alternate worlds which allow us to be imaginative, creative, original and innovative (Bruce 2005). Placing this mindset in a management setting, however, has the potential to cause friction and resistance. However, this is a natural part of change, whether internally or externally motivated (Manu 2016). Practitioners must manage these effects as they enter the new space of learning they've created. At this point, the cycle begins anew with an attentive, immersive learning phase.
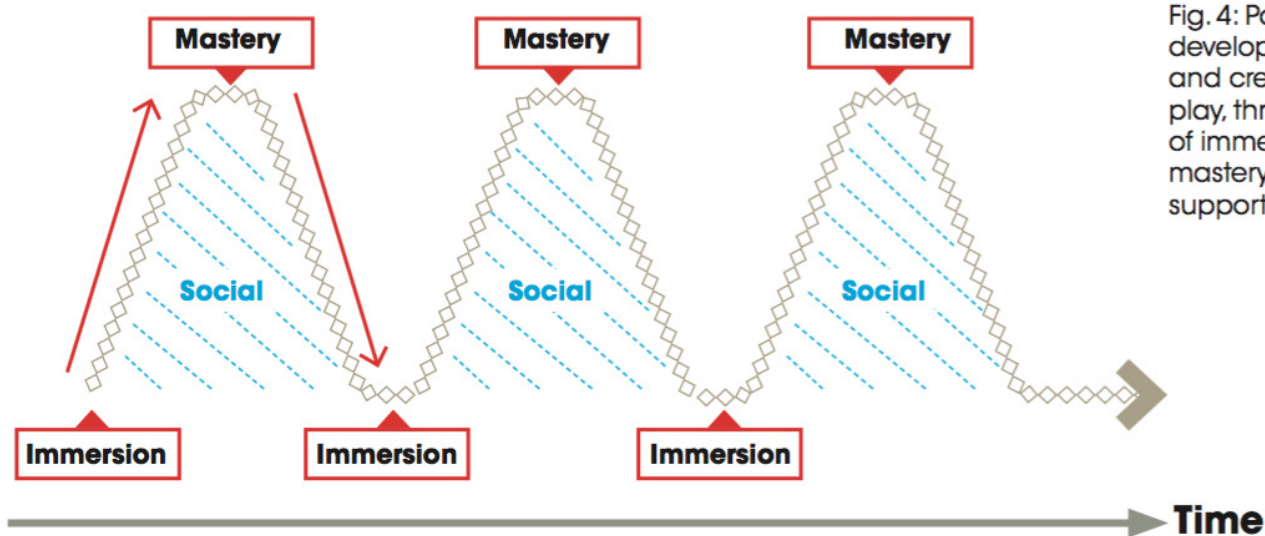
Fig. 4: Pa
develop
and cre
play, thr
of imme
mastery,
supports

INTEGRATING WITH THE SOCIAL ORIENTATION

Gauntlett et al don't explicitly indicate the social orientation because they suggest that it's present throughout the entire cycle. No matter what mode of orientation practitioners may find themselves in, they will be interacting with different people, teams, and other social groups throughout (Gauntlett et al. 2011). However, the effects of these interactions are indicated in the framework presented, only acknowledged. If we're discussing the practical applications of the play mindset in learning, play's potential as a social enabler cannot be discounted. The Spectrum of play proposed by Gauntlett et al explicitly acknowledges that play has the potential to cycle effortlessly between communal and individual types of play (Gauntlett et al. 2011). Bruce expands on this potential in her description of play: it can be solitary but can be in groups of individuals who will be sensitive to each other. Because of this social aspect, play has the potential as an "integrating mechanism, which brings together everything we learn, know, feel and understand" (Bruce 2005).

FIGURE 17.

Gauntlett et al suggest that the social orientation is present throughout the entire path.

B. The Play Learning Mindset for Design Management

While the proposed framework for a Play Learning Mindset within design management is based on Gauntlett et al, it has been modified to accommodate the different factors found throughout this research. The structure of play learning in design management proposed by this research is the sum of our discussion on the play spectrum and the management challenge of self-determination, united with Gauntlett et al's continuous framework of the Playful Mindset. This framework was chosen because these playful qualities are a distillation of our discussion on the essential qualities of play (set-outsideness, ludic form, and ambiguity), the spectrum of play (communal to disruptive, structured to free-flow), over a prolonged period of time, as Kolb suggests is required for successful learning and adaptation. However, it doesn't adequately illustrate how these elements orient a design manager or leader towards imaginative intent and self-directed action, in the context of an organization. Neither does it display the significant social impact of the playful mindset.

This modified framework displays mastery and immersion as interwoven phases that flow into each other, rather than distinct points along the spiral. The four qualities are also displayed as a blended flow of qualities to remove the impression that they exist exclusively in one orientation or the other. In the original diagram, time is the direction

REACTIVE CHANGE ACROSS TIME
(prompted by external factors)

IMAGINATIVE CHANGE ACROSS TIME
(prompted by intenal growth)

in which the spiral flows. The potential of social disruption and integration is indicated by a colour field enveloping the master and immersion orientations. The qualities of the play mindset entering the immersion stage lend themselves to a converging of collaborators, an establishment of a status quo. The qualities entering the mastery stage, on the other hand, lend themselves to a divergence of thought, a challenging of the status quo.

Again, these are all represented as flows rather than individual points, to emphasize that these qualities aren't limited to their associated phase. It's possible to be mindful and open to new learning as one enters a new phase of immersion. It's possible to bring people together even as one is actively disrupting the status quo. None of these flows are set in stone!
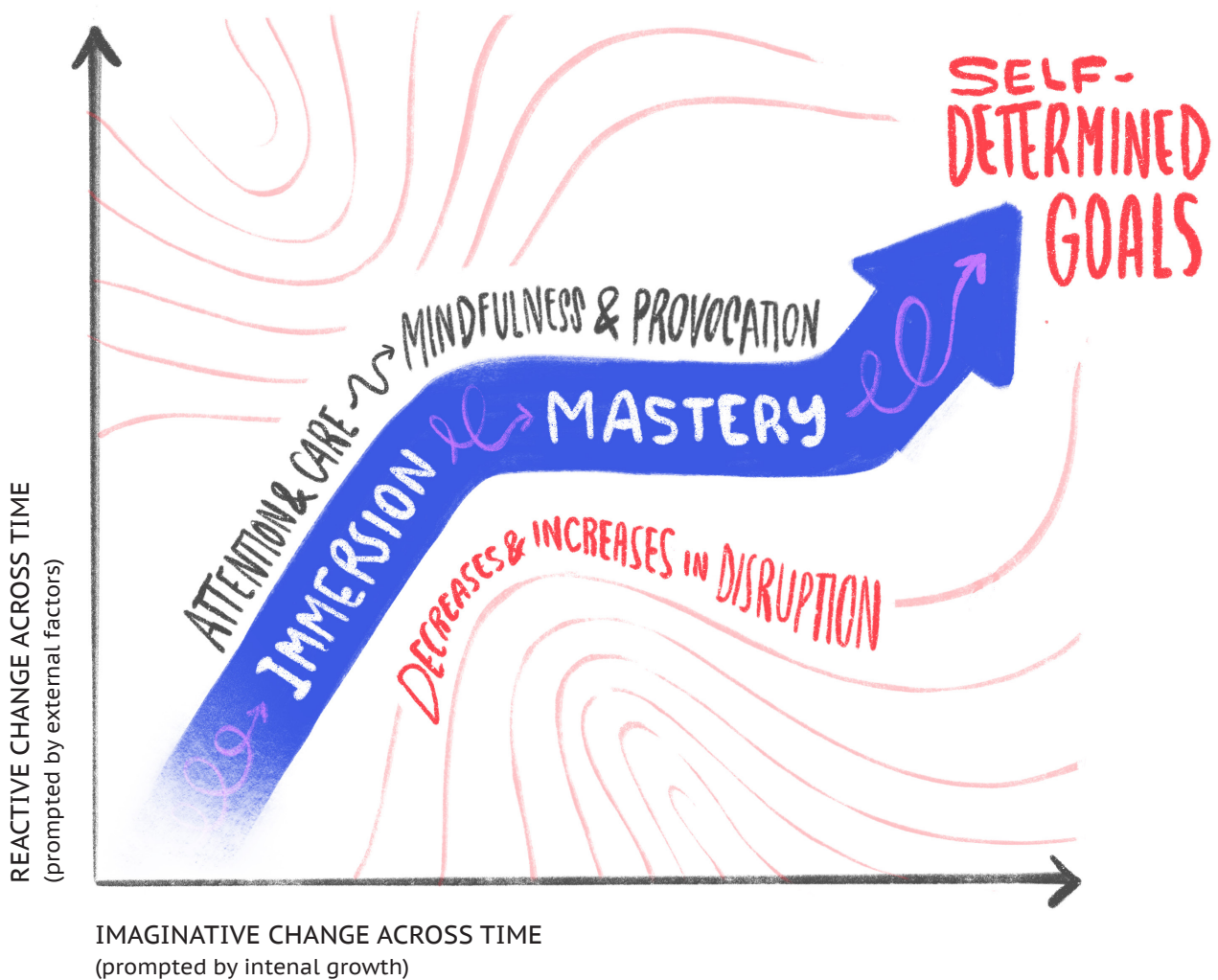
FIGURE 18.

The proposed framework for play learning in design management. With a balance of both internally and externally driven change, the pull of the spiral takes an upward diagonal motion towards the possibility of self-directed adaptation.

The only absolute in this mindset is it's constant, upward orientation towards change. In the base framework, the direction of learning is posited as a function of time. However, the research has shown that design management is looking to direct its practice, rather than allow itself to be brought along by a tide of changes. If this is to present a positive vision of design management geared towards learning and adaptation, simply having time as the determiner of direction isn't enough. The axes of the visualization then, have been modified to indicate change over time. The y-axis represents reactive change, prompted by external changes and the x-axis is the imaginative, driven by the internal motivation to grow beyond the status quo. With a balance of both motivations, the pull of the spiral takes an upward diagonal motion towards the possibility of self-directed adaptation.

This proposal isn't meant to reflect or prescribe a specific image of reality, especially for the myriad of contexts in which design management practitioners might find themselves in. It's merely a suggestion of a set of playful qualities and attitudes that can help design managers direct themselves and their teams through the constantly shifting needs of their environment, towards their intended goal.

C. Supporting a Play Learning Mindset

How the playful qualities of attention, care, mindfulness, and provocation will look like in a practical design setting is ultimately up to the discretion of the practitioner looking to apply them. As discussed in the scope of the research, design management practice varies according to the context it's used in. The literature review and the interviews conducted point to certain leadership activities that may play a significant part in supporting the play learning mindset.

MANAGING EMOTIONAL IMPACT

While introducing a playful mindset may help practitioners gear themselves and their organizations towards adaptation and learning, it in itself will be a major change. This transition must be managed well for it to take hold on any meaningful level. Introducing mindsets, in other words, changing someone's attitude is no small management task (Laloux 2014).
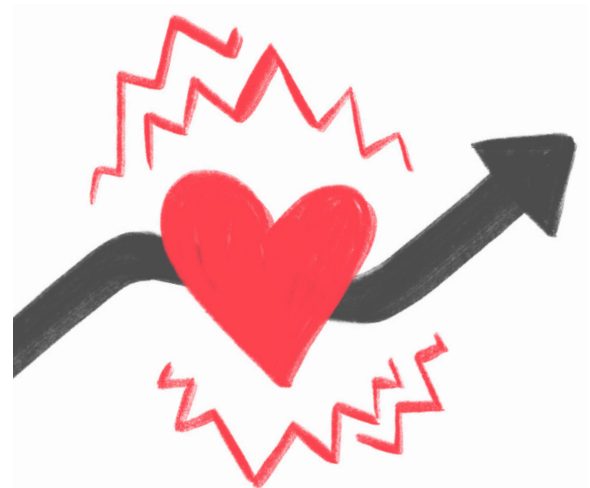
FIGURE 19.

Managing the potential emotional impact of introducing a play learning mindset

Manu speaks of this as a "redesign" of the work experience (Manu 2016). He claims that a company must be "culturally equipped" to imagine possibilities. It must have a culture that nurtures people, passions, and the capacity for transformation. This isn't merely about a company's ability to innovate, but the passion present in the individuals in the company. Individuals, he continues, need the energy to undergo and sustain change (Manu 2016). The play mindset might not require such a culture to be introduced, but it does require it in order to be welcomed and integrated in any meaningful way (Manu 2016).

Leadership plays a key role in the introduction of any change in a business, especially one as profound as a cultural or mindset change (Gumpenberger et al. 2014; Marchant 2019; Zuluaga Lopez 2019). They must take the initiative to make the change but also possess adequate emotional intelligence skills to manage people's emotions resulting from the resulting disruption of the status quo. Both Marchant and Zuluaga Lopez agree that an effective leader should take care of their team members' feelings in times of flux, whether this is motivated by external factors or internal management decisions (Marchant 2019; Zuluaga Lopez 2019).

Manu claims that transformation requires courage and time. The effort is often ruled by fear of the unknown, even a change of one's very identity according to their capabilities (Manu 2016). This fear is not to be underestimated. Tim Brown suggests that fear is the key emotion that causes people to turn to the relative safety of conservative thinking and ultimately, prevents playful behaviour. In the context of a design firm, he says, a design leader should aim to create a place where people have the security to both take risks and play. In Zuluaga Lopez' experience, she finds that leading by example is the most effective way of managing emotions. Rather than coaxing someone to think, feel, or behave in a certain way, she will model the behaviour she wishes to see in her team. While this invites her co-workers to display the behaviours she may model, she warns that this doesn't necessarily mean that they will all adopt the behaviour on the same degree, or even at all (Zuluaga Lopez 2019)

While neither Zuluaga Lopez and Marchant have ever attempted to introduce play behaviours in their workplace, they both have extensive experience an analogous challenge: introducing design thinking and process in companies that aren't centred around design. In their view, introducing a play learning mindset poses a

very similar challenge to introducing a design approach to people who don't identify as designers or creatives. They attribute this to an inherent playfulness already present in design, particularly in the brainstorming or idea generation parts of the process (Brown 2009; Zuluaga Lopez 2019; Marchant 2019)

When Zuluaga Lopez entered Portland Communications as a designer, the company didn't have a design department. She had to build her role as a designer by delivering good work while easing the major stakeholders around the company to adopt design as a major function. In his position as the head of design and innovation, Marchant is the major force of evangelizing design thinking to branches around the world. While this effort usually takes the form of workshops, he says the activities are just a vehicle for the key to bringing non-designers into a design mindset: building relationships. Zuluaga Lopez supports this suggestion, particularly in situations where one doesn't have a high-ranking role in an organization. Building relationships, she claims, is the strongest, most accessible method for introducing new ideas. One doesn't need a high rank to invest in building connections. More importantly, she continues, in engaging people on a personal level, one sets the ideas they share on a stage of care and empathy, making people more receptive and open. Knowledge transfer through personal relationships is a well-known method in leadership and organization learning literature (Manu 2010; Wang and Ahmed 2003; Gumpenberger et al. 2014). Gumpenberger et al claim that it not only facilitates the exchange of new ideas but also strengthens the organization as a whole (Gumpenberger et al. 2014).

BUILDING THE RIGHT STRUCTURE

While play needs the right culture and mindset to thrive, it needs the support of the right process to thrive (Manu 2016). A play learning mindset, in particular, needs to be situated in the right

learning context to facilitate long-term
learning (Gauntlett et al. 2012; Kolb
2014). Gauntlett et al describe learning
contexts as the settings in which learning
happens: physical spaces, technical
platforms, and culturally mediated settings
in both space and time (Gauntlett et
al. 2012). Ann Pairman & Lisa Terreni
introduce the concept of the interactional
environment, which encompasses
social interactions and the "temporal
environment, involving the routines and
changes to the learning context over time"
(Pairman and Terreni 2001).

This is closely tied in first suggested leadership activity of
managing the emotional impact of disruption. A supportive play
learning environment for children, Gauntlett et al suggest, is one
that makes them feel emotionally secure, allowing them to more
freely engage in risk and challenge (Gauntlett et al. 2011). As
Tim Brown mentions earlier, this is no different in fostering play
in adults (Brown 2008). Various activities are suggested to help
leadership sustain this emotional support across a longer time
scale. This isn't to say that the onus of sustaining play learning is
entirely on design leaders or managers. Orienting an organization
towards experimentation, overcoming fear, and the like are
cultural changes that require widespread engagement. However,
in the case of initiative process or workflow change, leaders and
other high-influence roles in an organization simply have more
power to do so (Gumpenberger et al. 2014; Manu 2016). In
cases where the leaders aren't initiating the changes themselves,
they will often have the final say in the decision to push
through with changes or not (Zuluaga Lopez 2019). People in
leadership roles find themselves in the position to create formal
social learning contexts (eg. mentor relationships, workshops,
seminars, etc) as well as informal, more free-flow situations

FIGURE 20.

Introducing a play
learning mindset
requires the
right structure to
support it

(eg. clubs, get-togethers, game nights, trips, etc) (Basten and Haamann 2018). However, it's up to the leader's discretion as to what kinds of learning contexts would be appropriate and effective in the organization and the pre-existing culture within it. Company cultures that find themselves more primed for play will need a vastly different approach from companies that are more resistant to the idea (Manu 2006).

GAUGING THE SITUATION

The most important leadership role in introducing play learning into an organization is assessing how appropriate the mindset will be for the situation. While this research proposes certain benefits of play learning for adaptation and self-direction within design management, it's not appropriate for all organizations at all times (Manu 2006). Manu suggests that certain types of organizations would benefit from situational play experiences in the context of concept development, but attempting to introduce a wider framework of play learning might cause tension in metrics like budget and delivery (Manu 2006). Sharp and Thomas also suggest that play is expressed differently according to individual personalities. While the play behaviours exhibited by certain personalities may suit the constraints of their context, others may exhibit overly disruptive play tendencies that aren't conducive to the functioning of an organization. While attitudes have the potential to change, Sharp and Thomas suggest that base personalities, therefore specific playstyles, do not (Sharp and Thomas 2019). A design leader should be able to gauge the specific mix of play personalities present in their organization and decide on which leadership approach is most appropriate for this highly specific context. Play, like design, is not a panacea for all problems, but a tool. Its efficacy will be determined by how the wielder uses it towards an intended effect (Manu 2016).

FIGURE 21.

It's up to the design manager to determine whether a play learning mindset is appropriate for their circumstances

Design managers are faced with the challenge of navigating the massive shifts characterizing the fourth industrial revolution. They must find a way to more actively direct themselves and their organization towards their goals, in spite of the scale, complexity, and velocity of the changes in question.

Play, as a metacommunicative and exploratory tool, could potentially enhance the process of self-determination in design management practice by orienting a practitioner towards adaptation and learning. This could take the form of play experiences that foster exploration, discovery and practice; or the adoption of a play learning attitude that allow practitioners to cope with unfamiliar problem areas in an imaginative and creative manner.

However, various barriers pose themselves between the introduction and long-term incorporation of play in a management setting. The widespread misconception of play's lack of value for adults has been identified as one such barrier in the literature. However, the individual complexities unique to each practitioner, team, organization, and time-specific context will have their own unique needs and barriers. Leaders and key decision-makers hold the key to both sustaining a play leadership in their organization or, indeed, if it's appropriate for their situation at all.

This context-dependence is a trait inherent to both play and design management and, by extension, the combined framework of the play learning mindset. While the research attempted to ground the framework in practice, the suggested attitudes and relationships presented by the model cannot be directly applicable in every situation. Any attempts to incorporate this framework into one's design management practice must be preceded with research and reflection into one's context, being especially mindful of the potential effects it may have on the people within it.

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