What if We Called Screens Play Machines? Digital play with devices making peace with Jonathan Haidt's *The Anxious Generation*

Interaction Devices, Digital Play, Play-based Childhoods, Play Machines, Screen-based Media

Katriina Heljakka
katriina.heljakka [a] utu.fi
Turku School of Economics
University of Turku

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The Anxious Generation by Jonathan Haidt (2024) argues that the decline of traditional play in childhood and the rise of smartphone usage are sources of increased mental distress in Generation Z. However, digital play offers a potential solution to make peace with the anxieties connected to phone-based childhoods and the belief in the disappearance of more traditional forms of play, particularly with innovative devices in mind that we could call Play Machines. As argued in this response to the claims made in Haidt's book, based on the findings of recent doctoral work in digital play culture, these devices transcend traditional gameplay, opening new possibilities for creative and open-ended play, including the use of physical toys and outdoor environments. Digital cameras, smartphones, and social media platforms can all be considered Play Machines, offering new ways to resolve the misconception about traditional play's perceived decline and associated mental distress.

Introduction

According to common thought, play is the "work of childhood" but a luxury in adult life that usually manifests in association with various forms of hobbying (Heljakka 2018). Adults expect play to belong as an essential part of children's lives to the extent that in 1959, the United Nations

Declaration of the Rights of the Child named play a human right: “The child shall have full opportunity for play and recreation, which should be directed to the same purposes as education.” (Child’s Rights International Network 1959). “Children need a great deal of free play to thrive,” says Haidt (2024, 7). However, play is a complex phenomenon that transcends the boundaries of childhood and adulthood, leisure, learning, and work, and the goal-oriented, competitive, and structured forms of play as in games, versus the free-form, unstructured, and therefore more imaginative realm of open-ended or free play.

Play is constantly changing, meaning that the playing of past generations may have dissolved into new play practices due to changes in society, evolving cultural practices, environmental changes, and the development of technology. Contemporary play is inspired by entertainment-driven media culture and digital technology. At the same time, through its documented, spectated, and socially shared nature, play itself entertains, educates, and inspires innovations and offerings of influencers, entrepreneurs, and enterprises operating in creative industries and work life. For the players, the activity may equally represent joyous engagement with the world without predetermined goals.

My reading and research of digital play investigate the positive impact of media technologies on physical, cognitive, and emotional movement experienced in life-wide and life-long play through *Play Machines*—digital devices that enable and enrich today’s play in leisure and learning. Play Machines mediate play in the intersection of physical toys (thingness), offline/online (trans)media, and interactive and connected technologies (technology) (Heljakka 2024b). This perspective incorporates the idea of the necessity of skill development associated with multiliteracies through interactions with technology that extend beyond the playing of digital games into more open-ended and creative play patterns.

A multiliteracy approach refers here to the capability to understand, interpret, and communicate across multiple modes of literacy beyond just reading and writing. Incorporating digital play means that digital, media, technology, visual and multimodal, and social literacies are considered. Digital technologies that connect with media and are conceptualized here as Play Machines operated in current play environments and entail learning skills to navigate, communicate, and interact in the complex digital world.

Contemporary play lives on communication and interaction, often on emerging platforms like social media. Play has been described as a social glue connecting people with like-minded players to form communities where playful interactions occur. Play uses materials, media, and technological innovations, while it also represents a vital life force, invigorating players to enhance their lives by playing in different ways. How play transforms due to new resources interests parents, caretakers, child educators, and play scholars worldwide. The 21st century has been described as the Century of Play. The change in current play is particularly noticeable when looking at technological developments and how rapidly evolving new digital devices and digital platforms are being employed for playful purposes in many areas of human lives—culture, education, and entertainment.

“Devices” are a popular term for “machines” that enable digital communication, usually through screens. As argued here, they provide a rich resource for contemporary play that transcends the boundaries of gameplay, broadening the scope of discussions around digital play. In fact, Western societies are quickly moving into a post-digital play era, where digitality and connectedness have become ubiquitous:

> Play is undergoing a radical expansion in association with the use of technologies. In addition to the increasing role of visuality and entertaining content, contemporary play is intensely colored by using various extensions for play, such as technological tools, such as devices, and media. (Heljakka 2024a, 19)

Even amidst the ongoing changes, “the best thing you can do for your young children is to give them plenty of playtime” (Haidt 2024, 269). I would like to extend this thinking to include adults, seniors, and domestic animals. Play is essential for relaxation, self-expression, and creativity and is a key facet of learning. During the turbulent years of the recent past, burdened by challenges related to global health and ongoing wars, play offers a pathway to temporarily escape and experience joy and hope for better times to come. Simultaneously, play is often in intensive dialogue with the world, drawing its themes from timely societal issues, such as COVID-19 or the raging wars in the world. Therefore, play can also be considered a powerful tool for activist causes and simply a way of ‘playing out’ concerns that weigh heavy in the minds of both children and adults.

While the importance of play is widely recognized by many, if popular media and critiques of contemporary Western society as discussed in this essay are to be believed, the phenomenon of play is in danger. There is a fear often articulated and made visible in news media and literature—the question of the decrease of play time and contemporary children's supposed restricted ability to play, frequently proposed as threats to contemporary childhood. As addressed in the essay at hand, one of the reasons for this is that contemporary play often incorporates digital media, but it is not necessarily understood as play. This produces a paradoxical situation. The complexities are many: according to popular belief, contemporary play is by large about engagement with digital media that mainly emerges from solitary interactivity between a player and a device, most notably a device that has a screen, such as a smartphone.

Recently, American social psychologist Jonathan Haidt published *The Anxious Generation. How the Great Rewiring of Childhood Is Causing an Epidemic of Mental Illness* (Haidt 2024, see Figure 1.), in which one of the key arguments is that a play-based childhood, not a phone-based childhood, promotes healthy development. In Haidt's thinking, contrary to the use of habit-forming products (Haidt 2024, 130), such as the aforementioned smartphones as a branch of digital devices with screens, preferable ways to play are disconnected from technology use and take place outdoors.

In his book, Haidt confesses: "I am a social psychologist, not a clinical psychologist or a media studies scholar" (Haidt 2024, 12). In this essay, laid out as a critical response to *The Anxious Generation*, I address Jonathan Haidt's ideas through the lens of a play scholar interested in the relationships between technology and play. I usually refer to myself as a toy-and-play researcher. My work presents interdisciplinary research grounded in multiple areas of academic inquiry, including toy research, game studies, design research, studies in visual, material, digital, and social cultures of play, and research in arts, HCI, interaction design, and early education.

James Johnson, who has studied play in various forms and contexts, knows the benefits of researching play from diverse perspectives. He writes, "Play studies assumes that one can learn more about play by examining carefully from many different angles rather than just one vantage point" (Johnson 2015, xiii). With the support of my multidisciplinary background, I write my response to Haidt's work.

Jonathan Haidt begins by asking, "How is technology changing us?" (Haidt 2024, 199). One important viewpoint in association with this question is what Mark Pesce, author of *The Playful*

World, How Technology is Transforming Our Imagination (2000), has written about technology. He says, “No technology is important—it’s the use of it that’s important.” My interest in technological evolution is to consider it parallel to human play. We know that play evolves within society and culture. Again, scholarly understandings of play offer clever, concise, and contested ideas about the changing meanings of play and how we value play as human behavior (Heljakka 2024a).

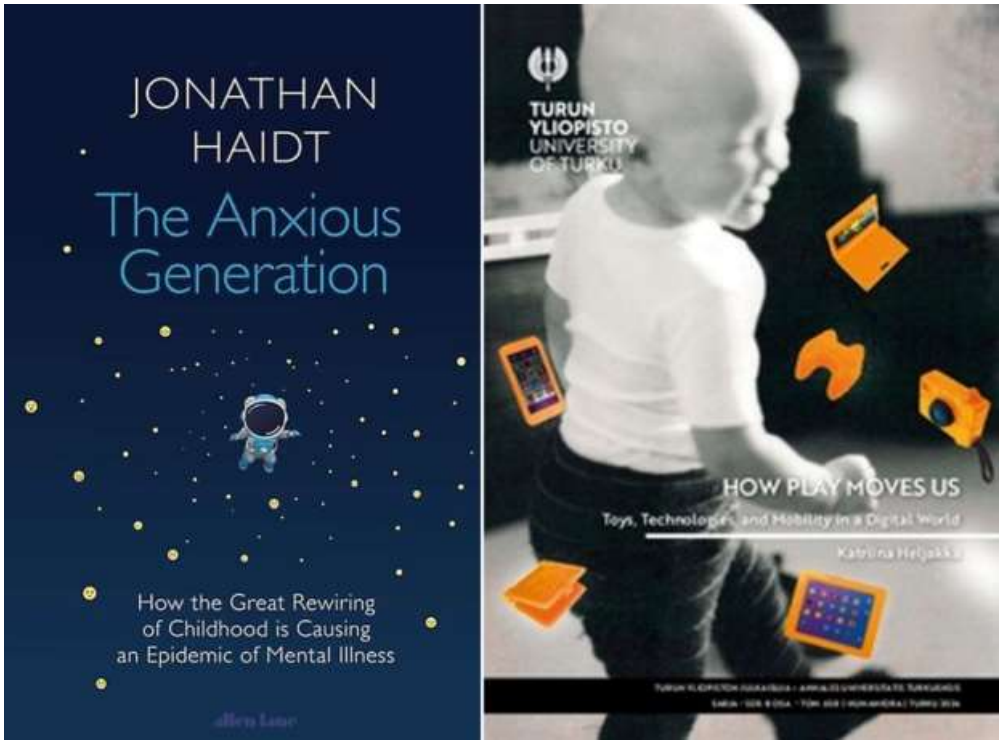
Play scholar Thomas Henricks thinks that “play is a concrete activity in the world” (Henricks 2015, 115). In my idea, it is about high engagement with our inner selves, our communities, and the physical world around us. This perspective on play includes understanding the relevance of various tools used for play, including organic, handmade, and mass-marketed playthings alongside technological devices. A central argument in my own work is that while, according to some, traditional (childhood) play is under siege, there is a need to widen the scope of research to capture aspects of play that may be considered non-traditional, including play that combines the areas of toys, technologies, and mobility. This means an urgency to develop a more nuanced understanding of *digital play* (Heljakka 2024a, 80), including related multiliteracies.

Digital play often involves screen-based interaction. Similarly to the decade under scrutiny in Haidt’s work, my research on play conducted in 2010–2020 allows focusing on a decade, during which the use of screens in play has proliferated. This period also marks a shift in using smartphones for play in terms of their camera technology instead of digital cameras. The evolution of screens is notable, for example, due to that screens of smartphones have undergone significant changes in the *physical dimensions* of the screens. One aim of this answer to Haidt’s claims in *The Anxious Generation* is to shift perspective from being enslaved by the presence of screens (Heljakka 2024a, 38) because devices, such as the Play Machines of interest here, are here to stay.

In her book *The Place of Play: Toys and Digital Cultures* (2009, 8), Maaike Lauwaert states that “technology is at stake in toys, games and playing,” noting “the increasing technologization and digitalization of both toys and play.” This development undeniably involves the presence and perhaps domination of game-play as a form of digital play conducted through screens. “Today, digital play includes playing video games on televisions with video game consoles, computer games, games on phones and tablets, hand-held video games, and augmented reality and virtual reality games found on different platforms” (Flynn et al. 2019, 55). All gaming is play, but at the same time, digital play represents a much broader realm than the design, playing, and theorizing of digital games. In other words, digital play is not only digital gaming. To move beyond the limits

of games, my work has explored the developments of digitalization, mediatization, and robotification—hence, digital, networked, and Internet-connected play outside of "gaming" or the playing of digital games (Heljakka 2024a, 39): As I will clarify in the following, the evolution of technological innovations parallels evolving play patterns, meaning new forms of play innovated in association with digital play (Heljakka 2024a, 20).

On March 2nd, 2024, I defended my doctoral thesis, titled *How Play Moves Us: Toys, Technologies, and Mobility in a Digital World*, conducted for the degree program of digital culture at the University of Turku (see Figure 2.). The purpose of the thesis was to increase the understanding of what the rapid technologization of play, or 'the digital leap of play,' means to mobilize the players physically, cognitively, and emotionally.



Figures 1. and 2. Haidt vs. Heljakka: Covers of The Anxious Generation and the doctoral thesis How Play Moves Us: Toys, Technologies, and Mobility in a Digital World.

Weil and Rosen (1997, 359) have observed that while fast-evolving technology presents many opportunities, most of us feel frustrated and uncertain about it. However, conversations and critical discussions on screen consumption and time associated with device use are often shallow. For this reason, my work aimed to open up new prospects for technology-enriched play by presenting a range of empirical studies interested in the mobilization tendencies of current digital

devices, toys, and connected media cultures that inform and inspire contemporary play and players of different ages as a form of digital culture that unites players and generations (Heljakka 2024a). This thesis aimed at understanding the positive and multidimensional role of digital technology in everyday play (or, the *digital leap of play*), including its mobilizing tendency, and players of preschool age up to adult seniors both in the contexts of leisure and learning (Heljakka 2024a, 25). It all started with a burning question: Why is it hard for many adults to interpret children's engagement with digital technology as play?

Jayemanne and Nansen (2016) have noted the limited views that adults have on technological play and bring up the concept of *prolepsis*, first discussed by McPake and Plowman (2010), drawing from Cole's discussion in *Cultural Psychology* (1996). The notion of prolepsis means that "a critical influence on parents' interactions with their children derives from the projection of their own memories of their idealized past into the children's futures, which is an explanatory force for parents' participation in technological play" (McPake & Plowman 2010, 1). Clearly, more scholarly work was needed to stress the existence of *play* in *digital* play. The case studies included in the doctoral work demonstrate that even screen-based technologies may move the players imaginatively, cognitively, and physically.

To offer a timely view of play, I have suggested the following definition, incorporating various dimensions and contexts of play, defining it as a life-long and life-wide phenomenon: "Contemporary play may take many forms: it can be solitary or social, embedded in the physical, digital, or imaginative, exercised both offline and online as part of leisure, work, and playful learning, extended with play(ful) things, tools, technologies, and media, and engaged in by players of different ages, even between individuals of different generations" (Heljakka 2024a, 77–78).

Leaning on this broad definition of play, the essay at hand seeks to unpack some of the concerns associated with widespread debate on *The Anxious Generation* and the decrease of "real play" in favor of activities partaken with screen-based devices. In the following, I will demonstrate the richness of digital play beyond activities with devices, which to many are single-handedly understood as being used for "gaming" only—an activity that, in popular debates, is often considered solitary and uncreative.

The Challenges of Devices: On non-play, screen time, and withdrawal from the outdoor world

In a commentary about a blog post I wrote on digital play, someone expressed the idea of interaction with devices having nothing to do with play by saying: “I do not conceive of children being with devices as play of any kind. Playing is a more physical and concrete action. Even social interaction is very different from face-to-face than through devices.” Based on this narrow conception of device use, an essential part of digital play, engagement with technologies combined with mediated content is not perceived to carry “physical” or “concrete” qualities. Still, I argue that digital play pivots around using devices in/for/with and “as” play (Heljakka 2024a, 32).

To understand the variety of possibilities digital play carries, one must avoid thinking that play cannot be digital. In *The Anxious Generation*, Haidt addresses the complexity of relationships with technology, believing that a play-based childhood strengthens children while a phone-based childhood weakens them (Haidt 2024, 29). Indeed, many adults prefer children to be engrossed in “free play” instead of watching and interacting with screens (Levin 2015; cf. Erdogan et al. 2019). Animated and dynamic play associated with digital media consumption in parallel to developing playthings has caused concerns, for example, about the rapid increase in screen time among today’s children (Plowman & McPake 2013).

To exemplify, engagement with digital media channeled content, besides its assumed limitations regarding imaginative play, is not considered to have “physical” or “concrete” qualities, as traditional play with, e.g., toys or outdoor play is assumed to have (Heljakka 2024a). As a parent, I agree that the challenges associated with digital play employing devices with screens addressed here as *Play Machines* are indeed many: adult control, governance, and permission to use, to name a few (Livingstone 2007). Moreover, parents of young children associate concerns regarding health, content, and addiction with digital play (Erdogan 2019) and, consequently, the consumption of *screen time*. Instead, many would like to see their children involved in outdoor play. Haidt points out that prior to phone-based childhoods, relationships, and social interactions have been embodied, synchronous, and involved primarily one-to-one or one-to-several communication (Haidt 2024, 9). These aspects are lacking in digital play, which mainly relies on interactions that are, according to Haidt, disembodied, merely including swiping or typing performed with fingers (Haidt 2024, 58).

However, due to *safetyism* (The worship of “safety” above all else is called *safetyism*, Haidt 2024, 88; 94) and the fear of “stranger danger” that has increased since the mid-1990s (Haidt 2024, 87), children are guided away from outdoor play as they are steered indoors. The partial disappearance of street games at the cost of indoor play may result from the perceived stranger danger (see, e.g. Davey 2012) but other reasons like increased urbanization with large flows of traffic and ‘unsafe’ public spaces factor in this development as well. Haidt sees that this might have to do with the domestication of the personal computer (Haidt 2024, 7). Another concern related to overtly used time with digital technologies, also expressed by Haidt, is the supposed adverse effects of screen-based devices in limiting children’s bodily (physical) mobility. For example, many fear that screen time steals opportunities for outdoor play (Heljakka 2024a, 32).

One common misconception about digital play is that it happens mainly indoors, threatening healthy childhood play. Haidt writes that “physical play, outdoors and with other children of mixed ages, is the healthiest, most natural, most beneficial sort of play” (Haidt 2024, 52). Following digital play scholars Giovanna Mascheroni and Donell Holloway (2019, 15), however, it is possible to see that “digital childhoods are messy, multifaceted, multi-modal and ultimately complex”. This also entails that digital play happens outdoors, even during various weather conditions (see Figure 3.).

Figure 3. Screen-based play can take place outdoors and engage players' participation in activities such as a visual art-based scavenger hunt. Here, preschoolers test Sigrid-Secrets (Heljakka & Ihamäki 2016), an 'artified' Geocaching trail set up in the city center of Pori, Finland. Photographed by the author.

Play Machines—*digital cameras, smartphones, tablets, Internet-connected toys, and toy robots* are portable devices that can be played on the go, making them *mobile* Play Machines. When the toy or technology can be moved around or has a movement of its own, the mobilizing tendency of play becomes realized, counteracting the 'withdrawing from the physical world' feared by Haidt (2024, 181–182).

In the following, I will explore more of the challenges linked with screen-based interaction that I interpret as digital play and then discuss why interaction with devices should be considered as current forms of play in parallel to *traditional* (i.e., *non-digital*) forms of play. By illustrating how screen-based play with devices complements traditional play by adding further creative, embodied, and mobile possibilities, I argue for the necessity of resolving some of the negative issues connected with technologically enhanced play. Finally, I propose that by enlarging the understanding of digital devices, such as digital cameras, smartphones, tablets, connected toys, toy robotics, and social media platforms, as Play Machines, their potential to extend, enrich, and empower current forms of traditional play is made more prominent.

The "Frankenstein Paradox", Connected Toys and Other Challenges of Digital Play

As observed, the nature of play in the digital age is changing (Marsh et al. 2016), as "play as a mode of experience is mobilized across hardware and software" (Moore 2011, 373). However, even though technological development offers a context to consider play experiences (Verbeek 2006), the "increasing technologization and digitalization of both toys and play" (Lauwaert 2009, 8) is not sufficiently understood to have consequences that are also positive for players across various ages.

On the contrary, just like the ideas presented in Jonathan Haidt's book demonstrate, the fears and disbelief in using devices as part of play in favor of free (non-technological) play are believed to limit the imaginative and creative capacities of children, as has, for example, been coined in Brian

Sutton-Smith's notion of the *Frankenstein Paradox* (Sutton-Smith 1992, 4): "Children's imaginations, it has been said, are always being threatened by the emergence of new machines—toys, television, video games, and so on."

Jonathan Haidt notes the central role of television entertainment in children's lives since the 1950s. At the same time, he observes how technologies have become more 'portable, personalized, and engaging.' He proposes that we should view the late 1980s as the beginning of a transition from a "play-based childhood" to a "phone-based childhood" (Haidt 2024, 3, 7). For Haidt, the term "phone-based" is used extensively to include *all 'internet-connected devices*' (Haidt 2024, 116): "all of the internet-connected personal electronics that came to fill young people's time, including laptop computers, tablets, internet-connected video game consoles, and, most important, smartphones with millions of apps" (Haidt 2024, 7). However, Haidt ties technological development with the decline of play-based childhood without going into depth into the complexity of play as a phenomenon and the fact that toys, television, and video games have always inspired traditional forms of play—and merged with it.

As a metaphor for all devices with screens, the smartphone leads Haidt to a conversation on video games (which he understands as a form of play) and virtual long-distance friendships (Haidt 2024, 223). Bogost (2016, 134) sees the smartphone as a microcosm for which many uses and behaviors are possible: A smartphone is a source of connection, companionship, information, and leisure, but also a distraction, compulsion, disconnection, and obsession. Cain (2019) goes as far as calling the smartphone "the most compelling toy ever created" (see Figure 4.). A researcher of technologically oriented toys quickly notes how the author misses current developments in the toy market: *The Anxious Generation* does not know of Internet-connected toys or toy robotics, which may or may not employ screens and linkages to connected worlds used to entertain and educate (Heljakka, in press). Sometimes, these toys are played with in conjunction with smartphones and tablets—in other words, in the presence and interaction *with* screens.

Figure 4. The smartphone has been playfully conceptualized as "the most compelling toy ever created." Photograph from the author's collection.

I agree with Gopnik, who says, "Our job is not to tell children how to play; it's to give them the toys…" (Gopnik 2016, 18). Understandably, if the Play Machines discussed in this essay are used in excess and to the point of addiction, this will lead to disagreements about technology (Haidt 2024, 17), not to mention an unhealthy lifestyle: To exemplify Haidt's stance on this, I quote his provocation. He writes: "Everyone really does have a smartphone, everyone disappears into their phones, and the play-based childhood is over" (Haidt 2024, 223). In this commentary, the decline of play-based childhood is associated with culminating with the deprivation of childhood, for which technology is to blame (Haidt 2024, 65).

My doctoral work seeks to unpack some reasons for this misconception about the partial 'disappearance' of play associated with technology use. Renowned scholar of play Brian Sutton-Smith has written about adults being lost in children's play cultures "because they do not speak the language of play" (Sutton-Smith 2017, 135). Based on this thought, it is possible that Jonathan Haidt does not speak the language of play in all its variety. Being lost in interpretations of play also applies to the activities that happen with play*things*: Ellen Seiter notes how children make meaning out of unanticipated toys that are perhaps undecipherable to adults (Seiter 1995, 10). This view resonates with the difficulties of understanding technologically oriented play that involves the use of Play Machines. Consequently, it is possible to perceive a generational rift in

understanding technologically oriented play due to perceptions of what (digital) play means, its ties to media, and how access to devices and media is enabled and governed by those in charge, who are often adults. (Heljakka 2024a, 28). Maybe there is partial truth in MIT professor Sherry Turkle's observation made in 2015 about life with smartphones when she said that with these devices, "We are forever elsewhere" (Turkle 2015, 3). But could it be that this 'elsewhere' means we are deeply immersed in play experiences?

Haidt agrees that "using a smartphone is an experience" (Haidt 2024, 98), but also "the world's longest umbilical cord" that provides 'digital distractions' (Haidt 2024, 250; 286). Quoting Lembke, who says, "The smartphone is the modern-day hypodermic needle, delivering digital dopamine 24/7 for a wired generation" (Lembke 2021; cf. Haidt 2024, 135), Haidt sees the dangers in the flux of an "infinite river of digital experience" (Haidt 2024, 106) with machines "designed to be addictive" (Haidt 2024, 115). To continue, Haidt states that "in a phone-based childhood, children are plunged into a whirlpool of adult content and experiences that arrive in no particular order" (Haidt 2024, 64) to fall into digital pits that add to feelings of loneliness and social isolation. He goes as far as to argue that smartphone use increases rates of antisocial behavior (Haidt 2024, 4).

Given Haidt's broad definition of what 'phone-based' means and how the interaction with these digital devices unfolds in his descriptions in *The Anxious Generation*, I am urged to respond to his ideas by sharing some findings of my research on toys, technology, and mobility in association with digital play. The consecutive idea in my doctoral thesis is that playing with Play Machines as digital devices can move us in multiple ways, cognitive, physical, and emotional (Heljakka 2024a).

Through my research, I have enhanced my understanding of digital play as a practice that mostly employs screen-based technologies with which the interaction can be conceptualized as play. Contrary to the idea of the Frankenstein Paradox, this interaction involves fantasies, self-expression, and creativity and can be categorized as entertaining, educational, or a combination. People of different ages engage with devices I call Play Machines in many ways that benefit the imagination, embodied interaction with the physical world, and social interaction with other players; these findings on new forms of digital play will be elaborated next.

New Forms Of (Digital) Play Making Use of "Play Machines"

Today's children living in the North Western world have been called the "touch-screen generation", for which device engagement happens every day. As per Haidt's thinking, screen-based

experiences overrule non-screen-based forms of experience by reducing interest towards, for example, more recognized forms of playing (Haidt 2024, 99). However, previous research investigating children's interactions with technology has defined *digital play* as using technologies in a play-based way (Marsh et al., 2016).

Digital play pivots around using devices in/for/with and "as" play: It depends on digital devices, often relying on screen-based but also multimodal interaction through vision, touch, and audio content, most commonly associated with digital gaming. In *The Anxious Generation*, Jonathan Haidt references digital games by pointing to them as a disembodied way of interacting with play. Further, he describes a story of a young boy who became addicted to high-intensity gaming, developed severe physical and social challenges because of this, and finally felt like a "hollow operating system" (Haidt 2024, 174).

Going beyond these aspects of device use in play shifts focus to other forms of play. Even though gaming is the most prominent form of play in the 21st century, digital play enabled by devices must include other forms, too. Therefore, I ask: *What are digital play forms of the open-ended and creative kind beyond game-play?* The answer to these questions relies on what Plowman and Stephen have said about digital play: "Depending on the app, device or toy […] problem-solving, self-expression and developing the imagination can all be associated with digital play" (Plowman & Stephen 2014, 20). Therefore, in the following, I will describe some of the new patterns of play I have discovered when researching digital play.

Photoplay and documentation of toy dramas as creative digital play

A key aspect to understanding the use of Play Machines is the content for play mediated through devices. To build the argumentation for addressing devices as Play Machines begins, therefore, by considering the associated photography and videography conducted with them—the visual nature of digital content and related, creative play cultures. Social media platforms rely on user-generated content, and for this reason, social media is "a creative outlet that creates a space for self-expression" (Haidt 2024, 136). Haidt admits that digital platforms offer fun and entertainment and, in this way, resemble "what television did for previous generations" (Haidt 2024, 137).

Playful content is produced and distributed both by the industry and players themselves not only as games but also open-ended and visually oriented platforms for play, and what is of central importance here—the documentation of play culture, which manifests as *photoplay* (see Figure

5.)—playful photography and videography documenting unboxing of toys, narrative toy play, outdoor play, dance challenges, etc. that is shared on social media platforms such as Instagram and Youtube. While interaction is vivid on Instagram commentaries and communities that form around influencer accounts, “YouTube is more widely used as the world’s video library than for its social features” (Haidt 2024, 117). At the same time, it emerges as the world’s largest shop window to toy cultures.

Figure 5. Photoplay, which involves digital cameras or smartphones and toy photography practiced indoors or outdoors, is an example of a digital play pattern with Play Machines. Photograph from the author’s collection.

Photoplay and the documentation of toy and doll dramas are an example of imaginative, creative, and productive digital play, which employs digital cameras, smartphones, and social media platforms together with player-created narrations of the toys’ adventures, illustrating how Play Machines offer useful tools for storytelling and socially shared play. Thanks to social media sharing, toy enthusiasts, for example, build cohesive communities with thriving interactions that live by the creative minds and activities of players of various ages, which could not be shared similarly unless Play Machines offered themselves as tools and playthings that enable this activity.

Playful and mobile learning with IoToys as digital play

Haidt writes that “in August 2023, UNESCO (the United Nations Educational, Scientific, and Cultural Organization) issued a report that addressed the adverse effects that digital technologies, and phones in particular, are having on education around the world.” In the report, it was brought forward that there is surprisingly little evidence that digital technologies enhance learning in the typical classroom (UNESCO 2023 in Haidt 2024, 249). As I have noted in my studies on digital play, some toys, like Internet-connected toys (IoToys), have a clear educational purpose. However, a discussion on ‘intelligent toys’ is neglected in *The Anxious Generation*, and precisely because of this, their potential for educational use, for example, in preschool education, must be introduced. Johnson and Christie (2009) have observed the potential opportunities that technological advances in toy manufacturing bring to early childhood education. “Digital play can incorporate many different kinds of play, and so it seems to have great potential to provide children with the benefits of playful learning” (Gray & Thomsen 2021, 4).

Toys, as the tools and instruments of play, in combination with digital devices, create tangible entry points to networked and Internet-connected play (Heljakka 2024a, 93). Currently, toys have encompassed movement through various player-employed affordances — playthings, such as smart toys that are sometimes referred to as toy robots, are no longer manipulated and moved by either robust mechanics or the hand of the players only but are increasingly controlled and given mobility through devices like smartphone applications and tablets, in other words, Play Machines that come with screens (Heljakka 2024a, 24-25; also see Figures 6. and 7.).

Fernaeus and colleagues (2010, 39) explain the difference between robots and other digital devices: “unlike a piece of software that is installed on a computer or a mobile phone, a robot is an active, tangible artifact that interacts directly with the world around it.” As illustrated in research conducted with IoToys (e.g., Heljakka & Ihamäki 2019; Ihamäki & Heljakka 2021), interaction with these Play Machines can cognitively and physically move players.

Nevertheless, “Some worry that play involving technology is limited in some way, as they fear that it constrains children’s imagination” (Marsh 2017; Levin & Rosenquest 2001). Bird (2020) describes this concern to accentuate how children’s play skills are believed to diminish with the prevalence of technologies, one of them being pretend play. However, based on my research on digital play with IoToys may be conceived as a creative play pattern suitable for educational purposes in

preschool, given that they are used in guided play. Furthermore, as has been discovered in my research with my colleagues, free play with IoToys may invite players to active physical play using affordances of light, sound, and movement to develop new play patterns with the IoToys. This research discovered that free play with IoToys may invite players to active physical play using these affordances to develop new play patterns with the IoToys that mobilize the players cognitively, physically, and emotionally, some related to open-ended and imaginative play, some stressing the competitive, game-based forms of play like maneuvering the device with speed and skill, and making e.g., coding robots like Dash from WonderWorkshop to move spatially to serve the playing.

Figures 6. and 7. Preschoolers play with the Dash coding robot through the screen of a tablet. Dash belongs to IoToys, internet-connected playthings, which can urge players to move in physical space as they partake in cognitively and imaginatively engaging play. Photographs from the author's collection.

Toy tourism (or Toyrism) as mobile digital play performed outdoors

One of the concerns related to digital play is that it encapsulates players indoors (Sutton-Smith 2017). Jonathan Haidt writes that "one of the hallmarks of the Great Rewiring is that children and adolescents now spend far less time outside, and when they are outside, they are often looking at or thinking about their phones" (Haidt 2024, 214), "I want us to get moving," he continues (Haidt 2024, 289). In my doctoral thesis, I will explain "How Play Moves Us" (Heljakka 2024a). Based on my research, I would like to point out that free play with play machines is *not a disembodied practice*. Alongside skills in hand-eye coordination and reaction to what happens on the screens, digital play, too, may mobilize us physically. Examples of outdoor games include popular pastimes

such as Geocaching and playing *PokémonGo*, but in my research, I introduce toy tourism, or *toyrism.*

Toyrism refers to non-human tourism conducted with character toys, such as dolls, soft toys, and action figures. In toyrism, people use Play Machines to photograph toys on their physical journeys and to post photoplays of their adventures online. The phenomenon proves that smartphones are necessary instruments to perform this embodied play practice, which includes the outdoors and even geographical movement of toys, technologies, and players, resulting in socially shared narratives on toy travels.

The teddy challenge as a form of Pandemic Toy Play and digital play

"People don't get depressed when they face threats collectively; they get depressed when they feel isolated, lonely, or useless", writes Haidt (2024, 38). The subtitle for *The Anxious Generation* is *How the Great Rewiring of Childhood Is Causing an Epidemic of Mental Illness.* Haidt sees social media as a *cause*, not just a correlate, of anxiety and depression: "social media is a trap" (Haidt 2024, 170). Based on his appraisal of a play-based childhood, the author sees devices as a core problem for having adverse effects on the health of children. In parallel to social media, Haidt writes that smartphones damage social relationships (Haidt 2024, 251). According to these claims, what I conceptualize as Play Machines, are to blame for the supposed decline of (free) play in current times.

The connections between the health benefits of play have been accentuated, e.g., by play scholar Stuart Brown (2009). It is the lack of play, which will lead to depression. Aligning this thinking, then, is the idea that "where there is play, there is a way." Play as a source of joy and the driving force for collective action became visible in the times of the COVID-19 outbreak, with the emergence of the Teddy Challenge, a form of *pandemic toy play* I have studied extensively in my research to understand the resistance, resourcefulness, and resilience that play promoted during the turbulent time of a sudden health crisis. The idea of the challenge was to place teddies or other plush characters on window screens to send out a message of solidarity and hope. The challenge quickly became a viral online phenomenon in which players of many ages participated.

Another motivation to place the toys in the windows was to let passers-by admire them on their walks outside. However, this physical in- and outdoor play pattern evolved into a hybrid one, including a photoplay of the toy displays, which were then shared on social media. Without the

involvement of the aforementioned technologies, the challenge might not have spread around the globe as it did. The phenomenon was widely captured in international media, proving that it had engaged children and adults, representing an intergenerational play pattern. It also proved to be a universal play pattern, with a low threshold to join in, in the invitation to play. To many, this form of play channeled hope amidst social isolation. Consequently, as a form of *toy activism* (Heljakka, 2023), it showed the power of technology, enabling *playing for the common good*.

Playing with companion robots as a form of evolving digital play

In his book, Haidt briefly touches upon the urgency of pro-social learning, calling out for "a new social-emotional learning curriculum offering formal instruction in "qualities like empathy and trust, and skills like relationship-building and decision-making" (Haidt 2024, 247). He sees the importance of being able to 'turn on an empathy switch' (Haidt 2024, 284), which means the learning of "empathy, learning emotional regulation, learning interpersonal skills" (Haidt 2024, 253). One branch of my research on digital play illustrates how SEL, or social-emotional learning, can be facilitated with the presence of a social companion robot, in this case, a robotic dog. The findings of my research with colleagues (Heljakka, Ihamäki & Lamminen 2020) stressed that the robotic dog, a *JoyForAll* golden retriever pup, worked as a powerful tool in creating an atmosphere in the context of a playful learning situation in preschool, during which the children calmed down and were able to learn about emotions differently than in the company of a live dog. This study shows how a digital toy such as a robot, through its natural interface (without a screen), is an effective instrument in building, for instance, empathy. Discussing such digital resources in this response to *The Anxious Generation* is crucial to point out a possible direction for robots of the near future and address the beneficial (and highly playful!) relations children can have with technology.

Speculative Toy Fiction as a way of envisioning future digital play

Haidt envisions the future by predicting: "As screen-based technologies move out of our pockets and onto our wrists, and into headsets and goggles, our ability to pay full attention to others will likely deteriorate further" (Haidt 2024, 122). This pessimistic approach is a possible scenario of our technological future, but it certainly is not a probable nor a preferable vision of times to come. Throughout this essay, I have looked at human play and relations to the Play Machines through a positive lens. My investigation of *speculative toy fiction* illustrates that I am not the only one. To

capture a possible foresight on future Play Machines, I have explored narratives that feature toy friends of the future. Haidt puts it bluntly: “Humans are embodied: a phone-based life is not. Screens lead us to forget that our physical bodies matter” (Haidt 2024, 206). Yet, engagement with Play Machines proves differently, as do speculative toy fiction cases, which I have investigated in my research.

Accounts of speculative fiction, as per my recent research, mean stories set in the future that envision positive relations to technology. They offer technological solutions to escape the lure of the flat screen by imagining new types of ‘screens,’ freeing us from the customary motions of tapping and swiping while sitting. If these speculations are to be believed, better ways of leveraging content speech, sound, light, and movement—and interaction with relatable others—future toy robots, and even the Artificial Friends are on their way. Generative AI personalities improve and can be implanted into ever-more-lifelike (Fink et al., n.d.. cf. in Haidt 2024, 189) toys and robots as the ‘Artificial Friends’ of the future. These speculated visions of HRI (or, Human-Robot-Interaction) envision how Play Machines as play partners offer a suitable and creative tool for both traditional and new play patterns partaken in indoor and outdoor spaces. This development will probably challenge the ideas presented in *The Anxious Generation* even more.

Conclusions

How do the ideas presented in my response to The Anxious Generation support the understanding of seeing digital devices as Play Machines? My answer to this question is that to make peace with the concerns caused by the *Great Rewiring of Childhood*, and to remedy and counteract the fears and limited views on digital play with devices solely contributing to anxieties, my suggestion is to connect their role to play; to accentuate their role as a positive resource that extends, enriches, and empowers contemporary play by addressing them as Play Machines, that enable play outside of their firsthand functions. The digital camera allows digital photography, the smartphone and tablets enable verbal, textual, auditive, visual, and audiovisual communication, and social media promote connectivity. Still, when used as part of play, they become Play Machines (Heljakka 2024a), representing a dimension of playful technologies that have a purpose, goal, or function (Sicart 2014) outside of play, but the capability of binding together traditional, physical, creative, and open-ended play with various forms of digital play. So far, as seen in this essay, there is disbelief in these ideas:

> Smartphones, tablets, computers, and televisions are unsuitable for young children. Compared with other objects and toys, these devices transmit intense and gripping sensory stimulation. (Haidt 2024, 270)

The quote from Haidt's book rings true. Play Machines are not the babysitters or entertainment providers for the very young. However, being unable to see how they may enrich the play of slightly older children is a mistake. In this essay, I have informed the reader about research on digital play, which, according to multiple studies, manifests in many ways through Play Machines—digital cameras, smartphones, IoToys, companion robots, and social media platforms. "The most important lesson here is to speak up. If you think the phone-based childhood is bad for children and you want to see a return to play-based childhood, say so" (Haidt 2024 292).

Here, I have aimed to provide a toy and play researcher's perspective on contemporary play including digital play as part of a play-based childhood. As I have aimed to demonstrate in this response to Jonathan Haidt's *The Anxious Generation*, 21st-century playgrounds are NOT "technology-free" nor "no-device zones" (Haidt 2024, 287). On the contrary, "Technological developments, products, and services are an inescapable element of children's everyday life" (Ruckenstein 2013, 476). As highlighted earlier, in Henricks's (2006) words, to "play with" an object is to experience the satisfaction of trying to control it. In terms of this thesis, this idea could be extended by replacing the word "object" with "technology." Because we familiarize ourselves with play and domesticate technologies, they become part (and partners) of everyday life (Heljakka 2024a, 170).

This essay shows how an understanding of the nature of toys has expanded during the 2010s, driven by digital technology: Some see mobile devices as new types of toys, with smartphone and tablet screens channeling content and possibilities for digital play and fantasy worlds and edutainment. For example, smart toys, which entered the mass market more widely in the 2010s, are increasingly connected to digital technology and information networks drawing on "material" that invites, inspires, and encourages play of people of various ages. Perhaps more than ever, to advance and overcome current societal and planetary challenges, the world needs the creativity and exuberance of players who, to follow Lauwaert's thinking, move across the core and the periphery of the geography of digital play and who constantly innovate new ways to employ machines and media in their playing supported by devices (Heljakka 2024a, 26). As long as the screens on smartphones, tablets, computers, and toys dominate to form the primary interface for

steering the interaction between the human being and her play machines, and before sensor-based or audio-controlled devices with hidden technologies become the most relevant entities for human-computer interaction, we must rely on an oculocentric, or vision-based, perspective on play at the cost of other modalities and allow more tactile actions to take place than just pushing, tapping, sliding, and so on I am adamant that including the term “Play” in conversations on digital devices as “Machines” and using screen-based media will alleviate some of the stressors linked with the negative aspects of the technology involved in childhood experiences.

It may well be that if children were asked, they would see no challenges nor concerns with the linkage of play and machines. In parallel to the ideas presented in this think piece, to make peace with concerns linked with the play lives of *The Anxious Generation*, we should begin asking children of this generation what play means for them and which resources they find of most value for their play that could transcend the boundaries of gaming. What would they answer to the question concerning digital devices: “What if We Called Screens Play Machines?”

Sherry Turkle reminds us that “we make our technologies, and they, in turn, shape us” (Turkle 2004). Technology use is not synonymous with play, but digital technologies stimulate and enrich play, while play helps technologies evolve. Through accounts of player behavior, we learn more about how the affordances of various systems, devices, and platforms are used by their users and, as a result, gain insights into how digital play emerges.

To the best of my knowledge, my doctoral thesis is the first one examining and combining the variety of playthings and digital technologies, or Play Machines, from several perspectives regarding player age and the context where playing takes place. According to news media, parents, and educators, one of the greatest fears about the impact of extant digital technology on play has been the concern that play mediated by technologies will suppress traditional play, often considered the most genuine form of play and, therefore, the most valuable. However, it is in place to ask when the complete convergence of traditional and non-traditional play happens in terms of normalizing and legitimizing Play Machines as part of a post-digital landscape of play (Heljakka 2024b)?

Understanding technologically driven play requires a variety of literacies, ranging from digital literacy to media literacies: “The use of new technologies is an integral part of becoming multiliterate in the twenty-first century” (Yelland 2011, 10). Mäyrä (2017) approaches this from the

conceptual angle of ludic literacy. Wohlwend (2008) characterizes “play as a literacy of possibilities.” According to Wohlwend’s thought, play is embodied literacy. I suggest that understanding the vast meanings of digital play is a crucial part of contemporary multiliteracy.

Finally, the social component of digital play cannot be undervalued: Playing with others increases togetherness and decreases alienation. For some, the power of play’s agency may surprise them. Digital technologies can help us discover more about the possibilities of play as interaction. Digital play starts with using various technological affordances (interaction with screens/screenless technology that is either leisurely or educational). It involves devices for play (primary role as Play Machines on which playing is enabled through games and apps). Digital play emerges as an *extension* of play (secondary role as play machines on which playing is captured by photographing, videoing, audio-recording, and digitally manipulating personalized playthings or other forms of content — physical or digital). Digital play is often documented and can be solitary, but it also involves using social media platforms that allow content sharing and, therefore, networked and social play. Digital play evolves into connected play once connected (“smart”) devices, such as IoToys, are used. Digital play also uses robotics, and the most recent tools in this area are robotic companion animals with natural interfaces.

Based on the findings of my doctoral research, digital technology acts as an extension of the player and a play *enabler*: It manifests through players’ creativity through affordances of hardware (devices) and software (apps). Digital technology, more than an additional element to play, is an *empowerer* and *enricher* of play: It makes play-related content distribution possible through a connection with digital networks (e.g., IoToys). The connectedness of the playthings means that they provide players with updated content, which can be entertainment, education, or a combination thereof. Digital technology also functions as a *socializer* of play: It allows communication through social media platforms. Playing with a balanced play diet, including a multitude of forms of interaction and engagement with quality toy (and interaction) design, good content, play with toys, and digital technology (and Play Machines), does not isolate us but mobilizes—moves us closer with our inner playing selves — and each other. This is “How Play Moves Us” with toys and technologies in a digital world.

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All links verified 10.12.2024

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