
This is an electronic reprint of the original article.
This reprint may differ from the original in pagination and typographic detail.

Väkevä, Jaakko; Mekler, Elisa; Lindqvist, Janne

From Disorientation to Harmony: Autoethnographic Insights into Transformative Videogame Experiences

Published in:
CHI '24: Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems

DOI:
[10.1145/3613904.3642543](https://doi.org/10.1145/3613904.3642543)

Published: 11/05/2024

Document Version
Publisher's PDF, also known as Version of record

Published under the following license:
CC BY

Please cite the original version:
Väkevä, J., Mekler, E., & Lindqvist, J. (2024). From Disorientation to Harmony: Autoethnographic Insights into Transformative Videogame Experiences. In F. F. Mueller, P. Kyburz, J. R. Williamson, C. Sas, M. L. Wilson, P. Toups Dugas, & I. Shklovski (Eds.), *CHI '24: Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems* (pp. 1-20). Article 808 ACM. <https://doi.org/10.1145/3613904.3642543>



From Disorientation to Harmony: Autoethnographic Insights into Transformative Videogame Experiences

Jaakko Väkevää
jaakko.vakeva@aalto.fi
Aalto University
Finland

Elisa D. Mekler
elme@itu.dk
IT University of Copenhagen
Denmark

Janne Lindqvist
janne.lindqvist@aalto.fi
Aalto University
Finland

ABSTRACT

Videogames can transform the perspectives and attitudes of players. Prior discussion on this transformative potential has typically been limited to non-entertainment videogames with explicit transformational goals. However, recreational gaming appears to hold considerable potential for igniting deeply personal experiences of profound transformation in players. Towards understanding this phenomenon, we conducted an explorative autoethnographic study. For this, the first author played five narrative-driven videogames while collecting self-observational and self-reflective data of his experience during and outside gameplay. Our findings offer intimate insights into the trajectory and emotional qualities of personally meaningful and transformative videogame experiences. For example, we found that gameplay experiences that were initially perceived as bewildering or disorienting could evolve into more harmonious experiences laden with personal meaning. This shift in experience developed through different forms of subsequent re-engagement with initially discrepant game encounters.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**; • **Applied computing** → **Arts and humanities**.

KEYWORDS

player experience, aesthetic experience, transformative experience, transformation, reflection, autoethnography, video games

ACM Reference Format:

Jaakko Väkevää, Elisa D. Mekler, and Janne Lindqvist. 2024. From Disorientation to Harmony: Autoethnographic Insights into Transformative Videogame Experiences. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24)*, May 11–16, 2024, Honolulu, HI, USA. ACM, New York, NY, USA, 20 pages. <https://doi.org/10.1145/3613904.3642543>

1 INTRODUCTION

Playing videogames can change who we are as people, by expanding our perspectives on ourselves, others, or life in general. Such perspective transformation has been understood to develop through

the act of reflection [47]. Concurrently, videogames have been characterized as *reflection machines* and consequently as a medium capable of serving as an agent of change [65]. Prior discussion on transformation and reflection in videogames, however, has traditionally been limited to so-called *serious games* [101], or non-entertainment games aiming to produce specific and measurable changes in players [27], for example, in the context of education [3, 15, 59] or well-being and healthcare [17, 97].

However, focusing on pre-defined and measurable transformative goals seems to only cover a single, surface-level facet of transformation [92]. Phelps and Rusch [92, 103] called attention to existential and emotionally resonant aspects of player transformations in games that “seek to be *felt* rather than *read*” [92, p.3]. These profound and individualistic, albeit elusive transformations have been overlooked; thus, a significant part of the transformative potential of videogames remains unrealized [92, 104]. Thus, in present study, we approach the idea of transformative play from the perspective of a player’s *aesthetic* experience [85]. In contrast to more conventional and rational learning processes, the aesthetic experience has been viewed as a more ineffable but *feelingful* means of gaining new understanding and changing our ways of thinking [16, 69].

A nascent body of research implies that recreational gaming has significant potential for evoking such aesthetic forms of transformation in players [14, 23, 98, 100, 103, 120]. This potential seems to relate to a range of *eudaimonic* [29], or reflective, emotionally challenging, and meaningful aesthetic responses that do not fit into the traditional scope of what constitutes positive player experience (PX) [14, 23, 77, 120]. Prior research surrounding reflective or transformative player experiences has typically relied on retroactive third-person approaches where participants are asked, for example, by interview or survey, to recount gaming experiences of their past [14, 22, 23, 77, 120]. However, relying solely on such retrospective accounts may result in a limited range of reported experiences [see, 52, 54, 63].

Much remains unclear about how players of entertainment videogames generally encounter aesthetic experiences of transformation extending beyond the gameplay context [77, 120]; the emotional and perceptual qualities of transformative player experiences, during and after gameplay [14, 120]; and how transformative player experiences should be viewed in current PX conceptualizations, such as immersion [1, 65]. A better understanding of this phenomenon could (1) allow us to recognize, characterize, and study certain eudaimonic human-technology interactions, (2) inform the design of more effective and enjoyable interactive technologies for various recreational and prosocial applications, and (3) help videogames mature as an aesthetic medium conveying intricate and nuanced themes and expressions.



This work is licensed under a Creative Commons Attribution International 4.0 License.

CHI '24, May 11–16, 2024, Honolulu, HI, USA
© 2024 Copyright held by the owner/author(s).
ACM ISBN 979-8-4007-0330-0/24/05
<https://doi.org/10.1145/3613904.3642543>

We conducted an autoethnographic study to explore the capacity of entertainment videogames to produce personal and profound forms of transformation in players and to track how such player experiences may evolve over time. We adopted autoethnography as a method because it allows access to intimate and nuanced descriptions of lived experience that are less constrained by one's memory and more rooted in the immediacy of experience [19, 42], and it lends itself well to examining how impressions change over time [19, 68]. Furthermore, players' subjectivity and cultural background are an inseparable aspect of their videogame experience [111]; in turn, autoethnography is a method that acknowledges and accommodates the researcher's subjectivity as an intrinsic element of research [2, 31, 42] and aims to elucidate what constitutes one's own experience [40].

For this, the first author played five narrative-driven videogames while recording self-observational and self-reflective data of his experiences, both throughout and beyond gameplay. Two of the games fostered emotionally powerful, personally meaningful, and reflective experiences that the autoethnographer deemed transformative. Related to these transformative videogame experiences, four overarching themes were developed: (1) *investment*, (2) *personal relevance*, (3) *self-reflexivity*, and (4) *re-engagement*. The contributions of the work are twofold:

- (1) Our study provides insights into videogame experiences that are profound, personally meaningful, and transformative. As such, it helps unpack the broad concept of eudaimonic gameplay. In particular, we highlight post-play re-engagement as a potentially pivotal component in the trajectory of transformative videogame experiences.
- (2) Our findings characterize a form of self-reflexive player engagement that may support transformative reflection. Moreover, through the four overarching themes, we discuss ways in which the transformative potential of videogames could further be fostered.

2 RELATED WORK

This section first clarifies what exactly we mean by transformative videogame experiences in present context. Then, this section reviews various related concepts and their interconnections. Finally, we state the purpose of the present study.

2.1 Transformative Aesthetic Experience and Empirical Aesthetics

In this work, we approach the phenomenon of transformative experiences from the perspective of players' *aesthetic* experience, i.e., a range of experiences from sensory pleasures to complex patterns of feelings, emotions, and meaning-making processes [85]. As such, the aesthetic player experience accommodates the immediate experience of gameplay and the ways players make sense of their experience outside of gameplay [85]. More specifically, we investigate the powerful aesthetic experiences that can be considered as *transformative* in the sense that they result in a reconstruction of an individual's worldview, producing a change in their perspective or identity [90]. These types of transformative aesthetic experiences have received little theoretical consideration in videogames.

Bopp et al. [14] suggested that the field of empirical aesthetics could provide Human-Computer Interaction (HCI) games research a useful conceptual basis for exploring aesthetic player experiences, including those that may be regarded as transformative. Empirical aesthetics has a long history of investigating the psychological and neural processes underlying art experiences [see, 91, for an overview], and it has posited that *transformative aesthetic experiences* are among the most powerful responses we can have to art [90]. Whereas a comprehensive account of empirical aesthetics remains outside the scope of this study, we briefly summarize how transformative aesthetic experiences have been understood to be produced and what kind of emotional responses have been related to them.

According to theories of empirical aesthetics, transformative aesthetic experiences can be triggered by a *discrepancy* between the viewer's perception of an artwork and their sense of self [90, 91]. Moreover, the artwork must be assessed as of high personal importance [90, 91]. Thus, the viewer perceives the artwork as potentially threatening their self-image, as it conflicts with their schema and expectations [90, 91]. In the transformative aesthetic outcome then, as described by Pelowski et al. [91], the viewer is expected to confront their feelings of discrepancy and to acknowledge the insufficiency of their prior schema. To resolve this incongruence, the viewer is then expected to adjust their schema or processing approach — and change some core aspect of their self-image — and thus to “grown and learn from interaction” [91, p.95]

Such transformative outcomes have been associated with powerful and profound emotional responses, which are characterized by a progression from initially negative feelings towards ultimately positive ones [90, 91]. Prior to undergoing the change in the self, an individual is expected to report feelings such as confusion, anxiety, and a desire to disengage from the experience [91]. After undergoing the change in perspective, one is expected to report feelings such as catharsis, happiness, or insight [90], epiphany [91], or *personal wholeness* and *human connectedness* [26]. Moreover, transformative outcomes are closely linked to notions of self-awareness and metacognitive reflection [91].

2.2 Reflection, Transformation, Learning, and Aesthetics

Reflection has been much researched in HCI [9, 47], but there is some fuzziness in the use of this term [6, 9, 47]. In present work, we follow the framing of Baumer et al. [6, p.94] — which is influenced by the ideas of Dewey [37], Schön [109], and Moon [83] — and we view reflection as “reviewing a series of previous experiences, events, stories, etc., and putting them together in such a way as to come to a better understanding or to gain some sort of insight”.

We view reflection in this somewhat broad sense, since we are mainly interested in one of its possible outcomes: i.e., transformation. Fleck and Fitzpatrick [47, p.218] characterized such reflection as *transformative reflection*, in which “the reflector's original point of view is somehow altered or transformed to take into account the new perspectives s/he has just explored”. Thus, it is perhaps unsurprising that education is a domain in which (transformative) reflection has gained notable attention within HCI [see, 6].

Indeed, the concepts of reflection and transformation have historically been closely connected to education and learning. Already over a century ago, Dewey [36, p.59] defined the educational process as “one of continual reorganizing, reconstructing, transforming”. A major work on transformation within education is Mezirow’s *transformative learning theory* [79–81] — influenced by the theories of Dewey [56] — which emphasizes the central role of critical reflection in learning. Mezirow’s [78, 79, 81] transformative learning has been proposed as being triggered by a *disorienting dilemma* that reveals the insufficiency of one’s frames of reference through which one understands their experiences [70]; thus, the transformative learning experience is about undergoing a process of self-development through which these frames are widened [70].

In addition, learning seems closely intertwined with the idea of transformative aesthetic experiences. Again, for Dewey, an essential goal of education was to “enrich and expand everyday experience” [95, p.1]. Later, Dewey [see, 38] became increasingly involved in arts, as he believed that art holds a unique capacity to foster enriching experiences [96]. Thus, for Dewey [38, p.30], the aesthetic experience held reflective and transformative qualities, and he associated it with a “satisfaction of the imagination”.

Hence, the aesthetic experience seems to be often viewed as another means of learning and understanding: one that contrasts “any strict demand of unemotional evidence for rational interpretation” [38, p.30]. Or, as Kokkos [69, p.158] described: “Aesthetic experience provides the means through which meanings that are ineffable, but feelingful, can be expressed and understood”. Similarly, Girod et al. [51] argued that separating such aesthetic ways of knowing from cognitive, rational knowing hinders the development of a more holistic understanding. Thus, the aesthetic experience is closely related to transformative reflection and learning [69]. However, it is perhaps these notions such as ineffability and feelingfulness that seem to distinguish it from more conventional, rational processes of learning.

2.3 Interactive Technologies and Ineffable Transformative Experiences

These more ineffable transformative experiences have gained increasing attention in HCI, given the growing need for technology that fosters our well-being [66]. For example, Kitson et al. [66] called attention to the phenomenological nature of transformative experiences and to how interactive technologies could support the development of such experiences that can foster personal growth and meaning in life. Transformative experiences have often been viewed as being preceded by *self-transcendent* experiences, referring to a feeling of connectedness with something larger than one’s self [66, 124]. Self-transcendence has been seen to encompass a range of more general and milder experiences, including mindfulness, flow, compassion, elevation, awe, peak experiences, and mystical experiences [66, 124]. In their recent exploration of using technology for fostering transformative experiences, Miller et al. [82] designed an immersive virtual reality (VR) experience that aimed to elicit self-transcendent emotions in users.

However, as noted by Kitson et al. [66], due to their oftentimes ineffable nature, transformative experiences are challenging to design; moreover, one is not able to design the experiences themselves,

but rather the conditions that can invite them [66]. Miller et al. [82] argued that designers can ultimately only provide the affordances for these personally meaningful and transformative experiences, which will each be unique to the individual who undergoes it [82]. However, Miller et al. [82] suggested that for a positive transformative change to emerge from a perceptual experience, such a change must be accommodated by the perceiving individual, which requires that the individual has the capacity to reflect on and process the new information. Thus, they argued that in addition to directly prompting for reflection, designers should consider approaches that can support this reflective processing within an experience [82].

2.4 Transformation and Eudaimonic Videogame Experiences

In the context of videogames, prior discussion on transformation has often revolved around games that are outside the scope of entertainment and aim to produce some specific and measurable changes in players [e.g., 27, 59]. However, these approaches, as Rusch [103, p.5] described, “do not cover the kind of profound transformation that can ignite subtle, elusive, uniquely personal, internal shifts that are based on what resonated with players”. Such descriptions seem to relate to the more aesthetic and ineffable facets of transformation.

In recent years, much work has emerged in HCI games research around emotionally complex, mixed-affect, meaningful, reflective, and thought-provoking videogame experiences that seem to relate to the aesthetic facets of transformation [12, 14, 22, 25, 29, 30, 77, 120]. These experiences are typically bundled under the broad moniker of *eudaimonia* [23, 29]. However, this bundling hinders elaborating and distinguishing the nuances and motivations underlying the diversity of experiences afforded by games, including transformative reflection. Indeed, reflection and transformation have been associated with eudaimonic entertainment experiences [5], and videogames have been regarded as a highly effective medium for eliciting reflection [65, 73].

However, until recently, little research has focused on experiences of reflection and transformation in recreational gaming. In their study on reflective player experiences, Mekler et al. [77] found that games can often prompt players to reflect on various topics, which they found an enjoyable activity in itself. However, instances of higher-level transformative and critical reflection [47] seemed rare in players’ day-to-day gaming experiences [77]. In a subsequent study on perspective-challenging moments in games, Whitby et al. [120] found that players frequently reported experiences of *endo-transformation*: i.e., transformation limited within the in-game context. In contrast, experiences of *exo-transformations* that influenced players’ beliefs and behaviour outside the gameplay context were rare [120].

However, Bopp et al. [14, p.11], in their study on aesthetic, or *art* experiences in videogames, found that some players could describe experiences that had somehow changed them and “contributed to their becoming a ‘better’ or more authentic version of themselves”. Such experiences were described to have resulted in an elevated self-understanding or expanded self-image [14]. However, it remained unclear how these transformative encounters arise during gameplay and how the emotionality of player experience relates to them.

Regarding their videogame art experiences more generally, the emotions that players most frequently reported were *prototypical aesthetic emotions* [see, 108] (e.g., feeling of beauty, and fascination) and *epistemic emotions* [see, 108] (e.g., interest, and intellectual challenge) [14]. Bopp et al. [14] stated being surprised that negative emotions did not figure more prominently in the surveyed videogame art experiences.

However, feelings of discomfort [53] and emotional challenge [13, 21, 23] do seem to relate to a spectrum of emotionally rich and reflective, eudaimonic gameplay experiences [29]. Recently, Cole and Gillies [23] found that some players purposefully seek out reflective gameplay experiences that challenge their self-identity and prior perspectives as a pathway to psychological growth and self-expansion. They also introduced the concept of *emotional exploration* to help explain why players would seek out such emotionally challenging experiences, and proposed that one major motivating component of these endeavours is to satisfy one's psychological need of *relatedness* [see, 32, 106]. Furthermore, they argue that compared to other media, such as film or literature, videogames afford opportunities for *interactive vulnerability*, allowing deeper and more personal emotional engagement [23].

2.5 Resonating, Lingerin, and Meaningful Experiences

Another recurring pattern in reflective or transformative player experiences appears to be notions of *resonance* and *lingering*. Marsh and Costello [73, p.116] proposed that game experiences need to “resonate or linger with the user/player after an encounter to encourage reflection, affect attitudes and change behaviors in order to fulfill a persuasive purpose”. Similarly, Bopp et al. [14, p.12] found that feelings afforded by reflective videogame experiences that players deem as art “seem to resonate and linger with players – sometimes long after playing”. Likewise, when examining player narratives on meaningful encounters with videogames, Rautalahti [100, p.11] described how players’ personal life events “resonated with the game experience”. In fact, Rusch [103, p.14] proposed “designing for psychological resonance as a means to prompt intrinsically motivated and personalized transformation”.

Indeed, Mekler and Hornbæk [76] identified resonance as one of the components of meaning-making. They referred to resonance as an intuitive experience of something making sense, “without the need to reflect on why or how it does so, or being able to explain it” [76, p.6]. They described another closely related component of meaning as that of *coherence*, which results from thinking about one's experiences and “understanding them in relation to life as a whole” [76, p.5]. They argued that resonance, in this more intangible sense, has gained far less research attention than more conscious and deliberate reflective processes [76]. Moreover, whereas Mekler and Hornbæk [76, p.10] provided outlines of different components of meaningful interaction, they recognized that there is a need for “examples and narratives of sources of meaning and concrete meaning-making processes”.

2.6 Immersion versus Reflection

Whereas *immersion* is a term that is often used as a synonym for player engagement, it has been argued that one may be engaged in

a game without being immersed [1]. In its more precise meaning, immersion is often understood as “a lack of awareness of time, a loss of awareness of the real world, involvement and a sense of being in the task environment” [61, p.657]. In contrast, Aeschbach et al. [1] proposed the conceptual model of *alienated play* to describe a form of play in which the player is playing while simultaneously observing themselves play. They hypothesised that such alienated play could facilitate a critical distance that enables players to critically reflect on the game content [1].

As such, it has been argued that immersion may be antagonistic to reflection [1, 65]. In the context of persuasive or serious games, distancing players from the game — e.g., by supporting players in role-playing as someone other than themselves [e.g., 59] — has been considered as a useful paradigm for fostering behavioral changes in players [64]. However, it remains unclear how such strategies apply to cases in which players purposefully seek out self-expansive aesthetic experiences that challenge their prior perspectives, say, in the context of eudaimonic entertainment [e.g., 23].

Outside videogame context, immersion has been associated with technology-mediated transformative experiences [67, 82]. However, also within this broader HCI context, the term is often used in various different meanings [67]. For example, related to their VR experience aiming to evoke self-transcendent emotions in users, Miller et al. [82, p.196] described how they “hoped to create a convincing and immersive experience that was realistic while acknowledging its virtuality”. The VR experience included a minimalistic fireside chat scene that aimed to trigger self-reflection and introspection in users, and the authors reported it as “profoundly immersive for some” but boring for others [82, p.207].

2.7 Summary of Related Work and Research Aim

In summary, transformative experiences have been seen as a possible outcome of reflection [47, 91]. In this study, we approach transformation from the perspective of players’ aesthetic experience [85]. The aesthetic experience has been viewed as an ineffable but feelingful way of expanding and transforming our understanding [69]. Empirical aesthetics has posed transformative aesthetic experiences as being triggered by a discrepancy that challenges the individual’s understanding and self-image [90, 91]. Thus, negative emotional responses are expected, but ultimately one is expected to arrive at profoundly positive emotional responses [91]. HCI has recently begun investigating the ability of interactive technologies to elicit similar profoundly meaningful transformative experiences [66, 82]. However, due to their ineffable nature, transformative experiences are challenging to design [66]; Miller et al. [82] argued that designers must consider how interactive technologies could support the process of transformative reflection within an experience. A nascent body of literature implies that recreational videogames may provide a powerful vehicle for igniting individualistic and profoundly meaningful transformative experiences in players [e.g., 14, 100, 103]. However, it still remains unclear to what extent players generally encounter such transformations [120], and how these transformative encounters unfold and are perceived throughout and beyond gameplay [14].

The present study aims to investigate the capacity of narrative-driven entertainment videogames to evoke aesthetic players experiences that may be deemed profound, reflective, meaningful, and transformative. Furthermore, we examine the phenomenological nature of transformative videogame experiences. Hence, we emphasize the subjective perspective of the player, and seek to describe the perceptual and emotional qualities of such videogame experiences and track how they may evolve over time. As such, our approach aims to provide nuanced and longitudinal characterizations of transformative aesthetic experiences in videogames.

3 METHOD

For this study, we conducted an autoethnography. The following section discusses autoethnography and its relation to HCI, and then describes the rationale for its selection for the present study. We then provide some information about the autoethnographer's background. Finally, we describe the study procedure.

3.1 Autoethnography in HCI

Autoethnography is an approach to qualitative research that aims to describe and analyze (*graphy*) personal experience (*auto*) in order to understand cultural (*ethno*) experience and phenomena [42]. Thus, an autoethnographer both writes about their personal experiences caused by or made possible by their particular cultural identity, and analyzes them using methodological tools and existing research literature, attempting to connect their individual experiences to a wider cultural context [19, 42].

Autoethnographic data can originate from the researcher's present as well as past, and it usually consists of artefacts such as field notes and journals [19]. Although self-awareness of the research purpose may affect the data collection, *raw* data from the autoethnographer's present is useful, as it allows to "preserve vivid details and fresh perspectives" [19, p.89]. Later, through "an extensive and skillful practice of writing" and analysis, the researcher reflects on the broader meanings derived from this data [35, p.5]. Autoethnographers may use storytelling devices, such as narrative voice and character development, to engage readers in the emotions, thoughts, and actions of the author [2, 19, 42, 72].

So-called *first-person* research, such as autoethnography, is rooted in sociology and anthropology — but its value is increasingly recognized in HCI, as it "allows researchers to investigate the lived experience from within, generating deep, evocative, and rich insights ... with an insider's perspective [that] is rarely available through other research methods" [34, p.754]. First-person research methods differ from third-person methods due to their emphasis on subjectivity and the individual's perspective [35]; as such, autoethnography is not concerned with traditional ideas of generalizability or replicability, but rather it aims to produce rich, lifelike, and evocative descriptions that resonate with its readers [41, 42]. In recent years, the use of autoethnography has become increasingly prominent in HCI [e.g., 8, 18, 44, 57, 58, 60, 71, 87, 93, 110, 113, 118, 122].

However, in the context of games research in HCI, first-person research methods have not yet gained much traction, with the exception of Hammad et al. [55] who recently presented an autobiographical design journey (a method drawing inspiration from autoethnography) on the experience of returning to long-term single

player games. In the study, the first author — the "Player-Designer" — revisited four narrative-driven single-player games for a course of 15 hours of play, while recording thoughts and feelings during gameplay, and post-play reflections [55].

3.2 Rationale for First-Person Approach

We adopted autoethnography as a method because it allows access to intimate and intricate confessions of player experience that are less constrained by players' ability to recall their past videogame experiences but are more rooted in the player experience in its present. Prior studies on personally meaningful, reflective, or transformative player experiences have been limited to third-person research methods, such as interviews or surveys where players are asked retrospectively to recall and describe their past gaming experiences [14, 22, 23, 77, 120]. Time and interaction play a key role in the experience of narrative-driven videogames, which typically have complex and dynamic structure [7]; thus, relying solely on somewhat surface level retroactive questioning arguably cannot do justice to the videogame experience in its entirety.

Thus, autoethnography allows recording some of the more immediate and fluctuating aspects of player experience, which might be lost in purely retrospective accounts. Solely on retrospective accounts may lead to a limited range of reported player experience, for example, due to the fallacy of memory [52, 63]. Whereas emotional memories are typically vivid and lingering, the involvement of emotions may leave people vulnerable to misremembering events [63]. Another memory bias which may affect shaping of retrospective accounts is the *recency effect*, which refers to the phenomenon in which "recently encoded information is remembered better than less recently encoded information" [52, p.231].

Moreover, autoethnography allows accommodating the player's cultural background and subjectivity as an inseparable part of their videogame experience. As described by Sicart [111, p.63], "[t]he player is a reflective subjectivity who comes into the game with her own cultural history as player, together with her cultural and embodied presence . . . bringing to the game a presence of culture and values that also affect the experience". Therefore, we adopted a method that acknowledges and accommodates the researcher's subjectivity as an intrinsic aspect of research [2, 31, 42] and attempts to elucidate and make apparent what constitutes one's own experience and perceptions [40].

Autoethnographers typically write about *epiphanies*, referring to lived experiences perceived to have significantly impacted one's life [42]. These epiphanies are "self-acclaimed phenomena in which one person may consider an experience transformative while another may not" [42, p.275]. In this way, autoethnography seems uniquely suited to explore the topic of transformative videogame experiences — which, as aesthetic experiences, are bound by our perception and the ineffable aspects of being [11]. Nevertheless, writings on epiphanies can illuminate how a person may experience intense life events and "effects that linger — recollections, memories, images, feelings — long after a crucial incident is supposedly finished" [10, p.595, as cited in [42], p.275].

3.3 Background of Autoethnographer

To contextualize the autoethnography, we present information on the first author's background and position in relation to the research and its topic [94]. In the context of the present study, the autoethnographer is a member of an HCI research group, and he has an academic background in cross-disciplinary technical studies connecting engineering, computer science, and design. The autoethnographer is a male, heterosexual, and in his mid-twenties. We do not wish to imply that attributes such as gender, sexuality, or age would be information that all autoethnographers should necessarily disclose, but we do so here, since they proved to be particularly relevant for some of the autoethnographer's videogame experiences, as will become apparent in the Findings section.

Further, he characterizes his research paradigm as interpretivist and constructivist, emphasizing the socially, culturally, linguistically, and historically constructed and interpretive nature of reality and knowledge [88]. He expresses a personal interest in engaging with the more ineffable and profound aspects of human experience — e.g., through arts, culture, and contemplative practices, such as mindfulness and meditation — which motivated conducting this first-person exploration of videogame experiences.

Pertinent to this study, the autoethnographer has for most of his life identified as an experienced gamer, with a preference for story-driven single-player games and competitive first-person shooters. His standpoint on the research topic is that he firmly believes that videogames hold considerable potential for evoking transformative aesthetic experiences, as he could readily recall various personally significant videogame experiences of his past. However, these memorable and seemingly influential videogame experiences would date back several years into the autoethnographer's childhood and adolescence, as his engagement with videogames has decreased over the years.

Thus, the autoethnographer found it difficult to develop a retrospective account [40, 71] of his potentially transformative videogame experiences of the past. For example, he could fondly remember the gloomy and enigmatic atmosphere of *Diablo II* [86] and grasping the basics of the English language and the idea of exchange economy through it; the feeling of being immersed in the awe-inspiring and lively fantasy world of *The Elders Scrolls IV: Oblivion* [115] where it felt like anything was possible; or the heart-wrenching but beautiful narrative of *The Last of Us* [39], which seemed to open his eyes to the more somber emotional experiences afforded by videogames. However, these sentimental and personally significant videogame experiences, despite evidently having left lasting impressions on him, were now but vague memories of a distant past. He could only recall the blurred outlines of most of these videogame experiences, and could not remember how these player experiences evolved, or how they might have affected or transformed him. Thus, we chose to focus on exploring novel videogame experiences.

3.4 Procedure

We conducted an autoethnographic study in which the first author played through five narrative-driven videogames while recording self-observational and self-reflective data throughout and beyond gameplay in the form of (1) field notes, (2) reflective journals,

and (3) memos. The main purpose of field notes was to collect self-observational data during and immediately after gameplay, to record “cover, elusive, and/or personal experiences like cognitive processes, emotions, motives, concealed actions, omitted actions, and socially restricted activities” [102, p.3]. The aim of reflective journals was to collect self-reflective data resulting from introspection, self-analysis, and self-evaluation [19] and to record how the videogame experiences would linger and evolve after gameplay. Furthermore, as recommended for autoethnographers, more spontaneous and unconstrained *memos* [19] were recorded regarding salient patterns and emerging themes throughout the process.

3.4.1 Game Selection. The five game titles were *God of War* [107], *Doki Doki Literature Club!* [117], *The Stanley Parable* [49], *Bloodborne* [48], and *The Beginner's Guide* [43], which were played in the respective order. The selection was based on several criteria. First, as prior research on emotional dimensions of player experience appears to revolve largely around narratively rich games, all the selected games were ones that place an emphasis on narrative. For example, the concept of agency has been associated mainly with story-driven games [116]; in turn, agency has been connected to emotionally complex, eudaimonic player experiences [22]. Second, all the games have gained critical acclaim and praise for evoking powerful and reflective emotional experiences (e.g., see [30] for eudaimonic experiences in *God of War*). Third, games were selected based on the first author's personal interest and motivation towards playing them, which was deemed a potentially important criterion since transformative aesthetic experiences seem to require a certain readiness to undergo the psychologically disruptive process of self-change [90]. Moreover, for variety, the selected titles encompass both mainstream, ‘triple-A’ games (namely, *God of War* and *Bloodborne*) and more ‘avant-garde’ [see, 21] titles, created by small teams or individual developers. As demonstrated by Cole and Gillies [21], when considering videogames that place an emphasis on storytelling, the length or replayability may not be relevant for their aesthetic impact; in fact, although these more avant-garde games are typically short in length, players praise them for the “intensity, novelty and quality of the emotional experience” afforded by them [21, p.123].

God of War is a third-person action-adventure game set in the world of Norse mythology, where the player controls Kratos, the Greek God of War left alone in raising his son Atreus after his wife passes away. *Doki Doki Literature Club!* is a visual novel viewed from the perspective of a male high school student invited by his childhood friend Sayori to join their school's literature club. The player is given the choice to romantically pursue female members of the club in this psychological horror game that is initially posed as a lighthearted dating simulator. *The Stanley Parable* is a story-based first-person game in which, alongside a voiceover narration, the player navigates as an office worker named Stanley through diverging pathways and storylines alongside a voice-over narration. *Bloodborne* is a third-person action role-playing game in which you play as a Hunter who is struck in strange nightmare and must hunt down horrific beasts to escape from the dreamworld. *The Beginner's Guide* is a first-person story-based game in which a narrator guides the player through a set of unfinished and abstract videogames.

3.4.2 Data Collection. The games were played through during a period of five weeks, during which field notes, reflective journals, and memos were recorded. The first author completed all of the story-driven games, i.e., reached the conclusion of their main narrative and end credits, with the exception of *Bloodborne* — which, after roughly eight hours of gameplay, having already successfully defeated several bosses, the autoethnographer reported as having ceased to stimulate notable emotional or intellectual engagement in him. The playthroughs accumulated roughly 44 hours of active gameplay, excluding the time to record field notes. As an effort to ensure a reasonably constant emotional and physical state during gameplay, this data collection was conducted principally during regular working hours.

After this gameplay period, the recording of reflective journals and memos continued for a consecutive period of six weeks. During this 11-week period, a total of 34 text documents were created consisting of 14 field notes, 8 reflective journals, and 12 memos — comprising roughly 15000 words, written mainly in Finnish, which is the native language of the autoethnographer.

3.4.3 Data Analysis. Rather than proceeding as a linear process, data collection was intertwined with data analysis and interpretation [19]. During formative analysis [40], the field note and reflective journal data was organized under “broad initial thematic domains” using an open coding approach [123, p.48].

After the 11-week period of cyclical data collection and formative analysis, a summative analysis [40] was conducted whereby an overarching process of categorization and comparison [114] was undertaken. The purpose of this categorization was not to form a comprehensive or general picture of all aspects of the data, but rather stimulate a more detailed analysis in which recurring issues, changes in attitudes, and overarching patterns are identified and developed into meaningful themes [40]. Categories were generated both inductively by responding to emerging topics and themes, and deductively by adopting existing categorization structures used in prior literature (for more details, see the OSF repository).

Later, to stimulate deeper reflection and analysis [19], the autoethnographer wrote an initial narrative, producing a descriptive, evocative, and self-reflexive account of his experiences with each game title. It was written seven months after the beginning of data collection with the help of prior autoethnographic data. This initial self-reflexive narrative comprised approximately 8800 words, or 18 pages, written in English. Although we make no claims for replicability, in the spirit of transparency, this narrative as well as a more detailed description and an illustration of the categorization can be found as supplementary material in the OSF repository.

Finally, as a result of formative and summative analyses, reflective writing, and continuous rereading of the data, four overarching themes were developed that served to differentiate videogame experiences that were emotionally powerful and personally transformative from those that were more mundane and emotionally indifferent. These themes form the foundation of the following autoethnographic narrative [e.g., 40, 71]. In accordance with McDonald et al. [74], the analysis was conducted solely by the first author to retain the subjective and self-reflective nature of the research, but there were broader discussions surrounding the results between the first and second authors. The themes in their finalized

form were developed nine months after writing the initial narrative. Thus, the complete analysis process spanned approximately 18 months.

4 FINDINGS

In this section, we present our findings structured around the four themes: (1) *investment*, (2) *personal relevance*, (3) *self-reflexivity*, and (4) *re-engagement*. Pertinent to the autoethnographic approach, the write-up of the findings intends to convey a vivid and evocative account of the autoethnographer’s personal experiences [e.g., 40, 71]. Some of the games feature potentially sensitive content, such as depictions of self-harm or mental disorder, which will be discussed and therefore readers who may be sensitive towards such topics, please be advised.

The following section first describes the meaning of each theme and how it was derived from the data. Then, we provide brief accounts of the autoethnographer’s experiences with the three games that did not result in transformative outcomes. Finally, we present more detailed accounts of the autoethnographer’s experiences with the games *Doki Doki Literature Club!* and *The Beginner’s Guide*, and characterize how they were deemed as meaningful, profound, and transformative. These accounts are synthesized from his field notes, reflective journals, memos, and initial self-reflexive narrative written over the course of 7 months. Quotes are extracted from the above-mentioned writings, and they are at times translated from Finnish to English and lightly edited for grammar and brevity. **We now shift to a first-person singular narrative** — i.e., that of the first author.

4.1 Understanding the Themes

4.1.1 Investment: Heightened Emotional and Cognitive Involvement. The theme of *investment* relates to the feelings of emotional and cognitive involvement, and particularly to a high degree of their mutual concurrence. In the data, somewhat broad notions such as “emotional investment”, “emotional challenge”, “intellectual interest”, and “cognitive challenge” seemed to be associated with such investment. The terms “cognitive involvement” and “emotional involvement” that I ultimately resolved to use were those originally developed as subfactors of immersion by Jennet et al. [61]. In the present work, cognitive involvement is understood as a state of heightened cognitive effort experienced during gameplay — expressed, for example, as a high salience of epistemic aesthetic emotions, such as interest, curiosity, and confusion. Here, emotional involvement refers to the degree of emotional attachment and response to the videogame (e.g., its gameplay, narrative, characters, and themes). High emotional involvement seemed to have been expressed most clearly as the game’s capacity to evoke pronounced emotional responses, such as feelings of beauty or being moved, as well as more negative emotions, including anxiety or sadness.

Conversely, the lack of investment seemed to express itself generally as a sense of indifference regarding the outcomes of gameplay. More specifically, low cognitive investment appeared to relate to boredom and perceptions of predictability and monotonous gameplay, whereas low emotional investment appeared to relate to an emotional indifference and a lack of emotional attachment to the game narrative and its characters or themes. For instance, in *God of*

War, I quickly felt that I was not particularly engaged in its gameplay, which I found repetitive and even tedious, nor was I drawn emotionally into its narrative, which I found somewhat predictable. On the other hand, I found the mechanically demanding *Bloodborne* to be immersive and viscerally pleasing, but there was an absence of a deeper emotional attachment and personal connection to its gameplay and cryptic narrative. Conversely, whereas *The Stanley Parable* was perceived as intriguing and insightful, what seemed to be lacking was a deeper emotional attachment to its narrative and its outcomes.

4.1.2 Personal Relevance: Playing as Myself. The theme of *personal relevance* refers to a salient feeling of identification with the game and its contents, for example, characterized by notions that I was to some extent “playing as myself”. This was associated with a heightened sense of relatedness — i.e., “belongingness and connectedness with others” [105, p.73] — and a tendency to relate my own experiences and beliefs into the game context. This perception of personal relevance seemed to be supported by ambiguous player-character relationships where the distinction between the character and myself was vague. The feeling of personal relevance seemed to shape my gameplay experience, for example, in situations involving difficult in-game decisions, resulting in a heightened sense of investment and agency. Depending on the outcomes of these decisions, they were at times followed by intense self-reflection and self-blame.

Conversely, in cases of low personal relevance, the perceived distance between myself and the playable character appeared to be much more explicit. In these games, I was controlling a more explicitly defined or less relatable character, often from a third-person rather than a first-person graphical perspective. For example, I found it difficult to see myself in the masculine and coarse Kratos in *God of War* or in the mysterious Hunter of *Bloodborne*. Similarly, if I had more extensive personal experience as a white-collar worker at some office building, I might have connected with Stanley on a more intimate level in *The Stanley Parable*.

4.1.3 Self-Reflexivity: Transgressing Norms of Play. The theme of *self-reflexivity* refers to a phenomenon where games, by highlighting their own artificiality as videogames, draw the player’s attention to themselves as a player of a game. These instances were associated with metafictional techniques, impressions of unconventional game design, and feelings of surprise and insight due to subversion of my prior understanding of what videogames can or are “supposed to” be. Such cases often related to situations seemingly blurring the line between fictional and reality, for example, when the game system was felt as being somehow “self-aware”. These oftentimes surprising and disruptive instances seemed to relate to a heightened state of investment, characterized by notions of intrigue and confusion, or even anxiety and disorientation. Moreover, these self-reflexive instances seemed to highlight a lack of *competence* — i.e., one’s “capacity to interact effectively with his environment” [121, p.329] — as they revealed a deficiency in my understanding of videogames. As a self-identified skilled gamer, I was accustomed to feeling competent during gameplay, i.e., finding the game as being “intuitive and readily mastered” [106, p.349] and as evoking feelings of “accomplishment and control” [106, p.350].

In contrast, this self-reflexive dimension was lacking in games such as *God of War* and *Bloodborne*, which were in line with my expectations and provided me with more conventional gameplay experiences. For instance, as a person relatively familiar with the action-adventure genre of videogames, *God of War* felt almost painfully predictable and conventional both in terms of gameplay and narrative progression. However, these feelings were frequently associated with a high sense of competence related to playing and understanding the game. In turn, this did at times relate to certain more facile emotional responses, such as feelings of fun or reward, but not to more profound or reflective responses. In the case of *The Stanley Parable*, although insightful self-reflexive instances were prevalent, they were perceived in a more lighthearted and less personal manner; thus, the game stimulated no profound emotional responses or deeper self-reflection.

4.1.4 Re-Engagement: Reliving Experiences that Linger. Finally, the theme of *re-engagement* refers to instances where the videogame experience would linger and live on, even after the gameplay was finished. Both videogames that were deemed as transformative left a powerful and vivid imprint in my memory, and they would frequently seem to occupy my mind for days or weeks. During this time, I would feel compelled to revisit my game experience, either mentally through memory or by watching online gameplay videos, reading other people’s reviews and comments of the game, or listening to the game soundtrack. As revealed by subsequent reflective journals and memos, such re-engagement seemed to be often associated with meaning-making processes in which I was reflecting on the personal significance of my videogame experience. Conversely, the non-transformative videogame experiences seemed to result in little to no post-play re-engagement or reflection; instead, after the end credits had rolled, I would generally no longer think of my game experience.

4.2 Portraits of the More Mundane Videogame Experiences

Here, we briefly summarise the more ordinary videogame experiences with *God of War*, *The Stanley Parable*, and *Bloodborne*, which did not result in profound or transformative outcomes. For more detailed descriptions and reflections on individual videogame experiences, readers are advised to consult the initial self-reflexive narrative in the OSF repository.

4.2.1 God of War. To my disappointment, my overall game experience with *God of War* was emotionally quite bland and shallow. The majority of gameplay seemed to consist of either combat, obstacle climbing, or puzzle solving, all of which I quickly found monotonous and even tedious. Early on in the game, I perceived the game as very conventional and predictable in terms of its gameplay mechanics and narrative progression, which seemed to hinder a deeper cognitive and emotional investment in the game and its outcomes. However, perhaps for someone less accustomed to the action-adventure genre, *God of War* may provide a more stimulating and engaging experience.

However, this is not to say, that I had no emotional and reflective moments with the game. One such experience occurred during a scene in which Kratos was teaching Atreus to hunt, and the boy

shoots an arrow at a deer. The animal is left suffering, and Atreus must finish the kill with a knife but is unable to do so. Kratos then lends his hand, and the father and son do it together. The scene made me briefly reflect on my own relationship to hunting, which is a hobby of my father and brother, but it has never interested me. I started examining the feelings and thoughts that the scene evoked in me, but they seem to be in agreement with my self-image; thus, the reflection ceases and I continue with the game. Thus, had I actually experienced something similar, or had the scene revealed some internal conflict, perhaps it would have affected me on a more intimate level. Moreover, a key theme of the game seems to be parenthood; perhaps if I had played it as a father, it might have resonated with me on a more personal level, as it evidently has with others [see, 30].

4.2.2 *The Stanley Parable*. With *The Stanley Parable*, my overall experience could be characterized as fun, insightful, and thought-provoking, but not particularly profound. *The Stanley Parable* is essentially a videogame about videogames, and it did manage to widen my understanding of the medium. The game comments on topics such as player agency and choice, the relationship between fiction and reality, and what it means to design and play videogames. The game felt inventive, and it frequently offered interesting insights into the nature of videogames while simultaneously evoking lighthearted feelings of fun and laughter. However, I could not detect intense or profound emotional responses in myself, and the reflection that the game triggered in me seemed to be mainly related to videogames as a medium rather than to my understanding of myself or life in general. As such, although I had a positive and somewhat insightful experience with *The Stanley Parable*, the aesthetic responses it elicited felt facile and transient.

In fact, the transient quality of the game was perhaps something that hindered the emergence of more profound responses. *The Stanley Parable* has 19 possible endings, and a single playthrough might merely take minutes, after which the game automatically begins again. Some of the game's multi-branch narratives did feel emotionally engaging and thought-provoking, but at times I found the abrupt conclusion of a specific storyline and the immediate beginning of a new one to diminish any emerging reflection. For example, in the very first ending that I got, playing as Stanley, I obeyed the instructions of the narrator, navigating through the office hallways, and ultimately found and turned off the secret Mind Control Facility, and broke free of the confinement of the workplace into a vast green landscape of new possibilities and happiness. I found this intriguing and potentially resonating, and perhaps inviting deeper contemplation regarding its possible meaning and relation to myself. However, this emerging reflective processing seemed to be relinquished soon, as the game rebooted and I would begin another playthrough. Consecutive playthroughs, in which I had to traverse the same office hallways and hear the same remarks of the narrator, began feeling less engaging after the initial novelty had worn off. Consequently, my experience with the game seemed to become gradually more mundane, as I found myself cognitively and emotionally less invested in the game. At one point, I noted that I no longer seemed to care much about the gameplay and its outcomes, or about trying to interpret what the game might have

attempted to say, but rather I found myself focused on “finishing” the game by reaching as many different endings as possible.

4.2.3 *Bloodborne*. My overall experience with *Bloodborne* could be characterized as pleasurable but not very reflective; the element that most clearly delineated my experience with the game was its fast-paced and mechanically demanding gameplay, which I often found immersive and viscerally pleasing. A typical gameplay pattern appeared to consist of recurring feelings of failure and frustration, due to being defeated by an enemy, ultimately followed by a triumphant sense of relief and success after managing to overcome an enemy, often through trial-and-error. However, it was already the second boss battle that I encountered — Father Gascoigne, a deranged Hunter — that proved to be the most challenging and emotionally intense experience with the game. Being defeated by him time after time led to intense frustration, and I even found myself turning off the game due to being irritated by my failure, only to turn it back on almost immediately with great resolve to achieve victory this time. When I finally managed to beat Father Gascoigne, perhaps after half a dozen attempts, I felt an intense relief and euphoria; my heart was pounding, and my hands were shaking in the aftermath. After this, as I got more competent at the combat mechanics, and progressed further in the game, the emotional impact of the game seemed to diminish as gameplay became more repetitive and task-oriented. This is not to imply that I no longer enjoyed playing the game; in fact, after becoming more adept at navigating the game, playing often felt highly immersive, characterized by a loss of self-awareness.

However, what was lacking in my experience were feelings of investment and personal relevance. Although the game world and lore surrounding it seemed rich and intriguing, I could not connect with the obscure and cryptic narrative of the game. Similarly to its lack of conventional gameplay tutorials, rather than guiding the player through a clear story, the narrative of *Bloodborne* seemed to rely mainly on the player's own eagerness to actively explore and make sense of the obscure game world, and cryptic dialogue and messages they encounter. This obscure and inquisitive nature of narrative did seem to resonate well with the demanding gameplay with its ambiguous and unforgiving mechanics. In my case, however, it seemed to result in a noticeable distance between myself and the game narrative. Nevertheless, if one were able to invest themselves more in the game narrative, emotionally and mentally — or find personal relevance within its themes — I could very well imagine this resulting in a more profound and reflective game experience.

4.3 Handling Depression in *Doki Doki Literature Club!*

Since its very beginning, *Doki Doki Literature Club!* managed to pique my interest and to draw me in on an emotional and very personal level. As a heterosexual man in his mid-twenties whose own high school years are yet not too far in the past, I found it easy to identify with the faceless protagonist whom I named after myself and who — is later revealed as having a somewhat similar figure and physical features as mine (as seen in Fig. 1) — might as well be the anime representation of me. Furthermore, the story is presented much like a novel, so that the protagonist frequently narrates his own thoughts and motivations, and I often found myself relating to



Figure 1: A scene where Sayori and the protagonist are hugging, and Sayori expresses her love for the protagonist: “I love you, Jaakko...” Screenshot of *Doki Doki Literature Club!* [117], ©Team Salvato

and empathizing with him in his romantic pursuits. “The game felt somehow very intimate . . . As a man, a young man, who is quite interested in the opposite sex, I found the protagonist’s position very relatable”, I wrote.

“So I stepped into the shoes of my character, and pondered which one of these girls I might personally want to impress romantically”, I described when having to choose which female character the protagonist would try to seduce. Ultimately, I chose to focus on the character of Sayori: “I like her dreamy, and perhaps slightly eccentric, but joyful outlook on life. Maybe it is something I that I can also see myself in”, I thought. My experience of the first half of the game was a very lighthearted and warm in tone; “I seem to be constantly smiling”, I noted. I had little prior experience playing dating simulators, but the first half of the game progressed very much as I expected it to. I consistently picked the dialogue options that I assumed would bring my character closer to Sayori. Consequently, I was rewarded with additional scenes that revealed more information about her character and further deepened the relationship between the protagonist and her.

The game takes a darker turn when Sayori reveals that she has been struggling with severe depression; the protagonist reacts in shock to this revelation, and so do I. The scene that caught me off-guard evoked a powerful emotional response in me, and even thinking about it a day after the experience gave me the shivers. The scene also triggered considerable self-reflection in me; I do have some experience in relation to depression, albeit not to the

same extent as with Sayori’s character, and I could find relatable aspects in some of the things she was saying. On an intimate level, I could identify with the protagonist and his reactions. Depression and other mental disorders have touched people close to me, and I could deeply relate to the protagonist’s confusion and lack of confidence when facing such a difficult topic that he cannot fully understand. I could empathize with the protagonist sympathizing with Sayori, wanting to do the best to help her while being afraid of lacking the competence to do so.

Then, in a scene that follows soon afterwards, Sayori confesses her love for the protagonist, and I am confronted by a challenging dialogue choice: “I love you.” or “You’ll always be my dearest friend.” All of the previous dialogue choices up until this point had felt trivial: this one I did not want to get wrong, and I made a new save file just in case. After careful contemplation — and reflecting what I might personally do in such a situation — I picked “I love you.”, and the scene seems to reach a relatively positive resolution, with Sayori hugging the protagonist and expressing her love for him, as can be seen in Figure 1.

Soon after, the game takes a major turn, as the protagonist returns to Sayori’s house the next day to check up on her, only to find her having committed suicide by hanging herself in her bedroom. In disbelief, the powerless protagonist begins contemplating on what happened and blaming himself — “This isn’t some game where I can reset and try something different”, he says to himself — and



Figure 2: A distorted version of the start screen of the game: the option for “New Game” is replaced by obscure symbols, and the image of Sayori appears glitched and partially replaced by the image of Monika. Screenshot of *Doki Doki Literature Club!* [117], ©Team Salvato

similar thoughts race in my mind: “Did I make the wrong choice?”, I ask myself, “Did I fail to understand Sayori and her depression?”

This is also when the game’s self-reflexive nature begins to show itself through more apparent metafictional intrusions, which seemed to be a major source of its psychological horror. During the shocking sight of Sayori’s dead body, a disoriented, eerie version of the main theme starts playing, and the screen seemingly starts glitching and displaying error messages. The scene was emotionally very intense: I was deeply moved and disturbed by Sayori’s suicide, and unsettled while curiously captivated by the strange, distorted audio and visuals.

The game seemingly ends, and I am returned to the start screen, which is strangely misshapen though (as seen in Fig. 2). Where it is supposed to read “New game” there are some obscure symbols, and the image of Sayori is glitched out and seems to be partially replaced by an image of the character of Monika, who is the president of the school’s literature club. I remember what the protagonist said to himself about this not being some game where you can reset and try again, and a feeling of dread arises in me. Nevertheless, I click “Load game” in attempt to return to the scene where I had to choose whether to confess my love to Sayori — to see if I could fix my mistake. However, an error message is displayed: “corrupt save – character file sayori missing – starting new game”. Thus, I am deprived of agency: I cannot go back to fix my mistake like I expected. The anguished contemplation of the hopeless protagonist still echoes in my mind. I am left questioning myself: Did I do something irreversible? And more importantly: could I have done this, in real life, that is?

Thus begins the second half of the game, during which the game becomes increasingly disorienting and unpredictable, as the story starts repeating itself from the beginning but without the character of Sayori. Similar strange and disruptive, immersion-breaking elements are introduced with increasing frequency: for instance, sudden visual glitches on screen, music that is off-beat or disoriented, or seemingly malfunctioning dialogue boxes. I experienced this latter half as not only emotionally but also cognitively highly demanding, characterized by feelings such as anxiety and tension

as well as curiosity and confusion. I wrote in my field notes: “The deranging of the game’s structure, and the surprising, disorienting ‘glitches’ in the music, visuals, and dialogues keep me ‘on the edge of my seat’. It feels like the game is challenging, or burdening me emotionally and cognitively a lot. It is difficult to keep up”. At one point, I even reported feeling like quitting the game, as the tension was becoming unbearable.

Finally, it is revealed that Monika is a sentient AI who has been manipulating the game files to dispose of the other female characters to get the player to fall in love with her. This scene seems to completely tear down the fourth wall, as Monika, who stares directly at the screen, begins talking to *me* rather than to the player-character. I was awestruck and fascinated by this epiphany. There was a cathartic sense of relief: as I discovered the underlying source for my horrifying and disorienting experiences, it felt as if the pent-up negative emotions of anxiety and confusion were finally released. This ending had a profound effect on me; I was intensely impressed by the delicate beauty of the game and felt a great appreciation for its inventive and intricate game design, which was something entirely unprecedented to me.

After finishing the game, I still was not entirely sure what to make of the experience; I wrote: “The contrast to *God of War* is immense. This felt like a so much more personal, meaningful, and profound experience. It really did at times make me feel like I am connected with ‘something bigger’.” Having finished the game, I quickly found myself re-engaging with it by looking up related online gameplay videos, comments, and reviews, to see how other people experienced and interpreted the game. “There was a stirring in my soul. I had been through a real emotional roller coaster” — I reflected on the next day after having played the game — “I still haven’t quite managed to collect my thoughts”.

It was one of those aesthetic experiences that I could not stop thinking about for the next few days. Particularly, the game soundtrack seemed to leave a lasting impression on me; a few days after having finished the game, when trying to sleep at night, I could hear the main theme looping in my head. Another image that still seems to be engraved on my mind is the sight of Sayori dead in her room along with the unsettling music with the feelings of shock and self-blame associated with it.

Thus, the game managed to leave an exceptionally strong impression on me. During the subsequent weeks, I would reflect on the meaning of my game experience in my journals and memos, describing how it was “an experience fraught with tension and anxiety”, but it “managed to evoke ideas that seem important and personal reflection regarding humanity: it widened my understanding of different dimensions of mental disorders and how to relate to them”. Moreover, I found the game as having “truly transgressed my conception of videogames”. Therefore, due to these insights and the profound emotional responses it evoked, *Doki Doki Literature Club!* was a videogame experience I deemed as personally transformative.

4.4 Creativity and Insufficiency in The Beginner’s Guide

At the beginning of *The Beginner’s Guide*, a narrator introduces himself as Davey Wreden, the creator of this game as well as that of *The Stanley Parable*. He states that he will describe a series of

events that occurred between 2008 and 2011 and guide the player through a set of games created by his friend, a developer called Coda. I was immediately drawn in by this self-reflexive approach, which I found peculiar and intriguing.

Thus, in this case, the notion of “playing as myself” took a more literal meaning, as the premise of the game narrative revolved around the recognition that I was in fact a player who is playing a videogame. Thus, rather than interpreting the narrative through the perspective of some external, in-game playable character, I was confined to my own experiences and background.

Throughout the game, as Davey Wreden narrates the player through the games of Coda, he discusses topics such as game development, interactive storytelling, and creativity. As a person with creative aspirations and an increasing interest towards the medium of videogames — both on an academic and more practical level — I found the topics of the game to be interesting and personally relevant. Many of Coda’s games were fascinating and evocative — and I often found Davey’s comments on the games and their making to be insightful and inspirational.

However, due to this curious self-reflexive nature of the game, my experience was colored by an undertone of uncertainty: I was constantly left questioning what is fictional and what is not. Fairly early on in the game — as the narrator starts showing signs of being an unreliable narrator — it becomes apparent to me that the boundaries between reality and fiction are perhaps not so clear-cut as the narrator introducing himself as the actual Davey Wreden would have me believe. “I am not sure whether Coda is even a real person, probably not”, I write in my field notes around halfway through the game.

Nevertheless, as the narrative progresses and Davey’s observations on Coda’s games and personality seem to become increasingly opinionated and coercive, I still find them to be mostly believable. Davey, in his narration, starts depicting Coda as a tortured artist suffering from anxiety and depression, as his games seem to have taken a darker shade. To me, this feels like a reasonable interpretation. Davey explains that he has been showing Coda’s games to people, because he thought it would help Coda in his distress if more people told him that they like his games. “I feel like it probably did not help Coda in this story”, I suspect as I near the end of the narrative with a sense of foreboding.

The upcoming climax of the narrative had a profound effect on me. In the game’s emotional final chapter, Davey guides the player through Coda’s final game. Suddenly, a surprising message from Coda to the narrator is found on a wall (as seen in Fig. 3): “Dear Davey, Thank you for your interest in my games. I need to ask you not to speak to me anymore.”

What transpires is an epiphany to the player and the narrator: Davey was the reason for why Coda stopped creating games. When the narrator recognizes this, he starts self-reflecting and seems to undergo an existential crisis; meanwhile, the player navigates through a hallway while reading through a set of messages from Coda to Davey. In the messages, Coda explains how Davey had been infecting Coda’s personal space by his interference with Coda’s games and his obsession of obtruding his own meanings into Coda’s creations. In the messages, Coda describes that Davey is a broken person who desperately tries to cope with his own inadequacies by adhering to Coda’s works as if they were his own creations,

and Coda suggests that Davey’s misconception that Coda must be frustrated or broken reveals more about himself than about Coda.

Davey, the narrator has an emotional breakdown during which he describes his feelings of insufficiency, apologizing to Coda for what he did but simultaneously desperately begging Coda to start creating games again so that he himself could feel okay again; “I want whatever that wholeness is that you summoned out of nothing and put into your work, you were complete in some way that I never was.”, the narrator cries out. Davey concludes his touching monologue: “I want to know how to be a good person. I want to know how not to hate myself. Please. I’m fading. And all I want is to know that I’m going to be okay.” The screen darkens. I was deeply touched by the scene.

Thus begins the epilogue, and I can still feel a storm of thoughts and emotions stirring in me. The narrator quiets down, and I am left alone in my reflection. At first, I felt a certain antipathy against the character of Davey due to the way he had wronged Coda — but it would quickly turn into empathy and compassion, as I could find many relatable aspects in his behaviour and monologues. As this initial dislike towards the narrator shifts into empathy, I find that I am questioning and blaming myself instead: can I say that I would be any better?

My reflection comes to a halt, as I, as the player-character, step into a beam of light, and begin floating upwards, transcending in a celestial landscape towards space, and what is revealed below is an endless maze (as seen in Fig. 4). A serene, elevating track plays in the background. “It was a beautiful moment. I was alone in the midst of an infinite universe”, I reported about the scene. Finally, as I ascend higher and higher, all fades to black and the end credits appear, and a sorrowful piano track with beautiful vocals begins playing: “Turn back, turn back from this cave.” I found this a deeply moving, shiver-inducing, and cathartic resolution to the game.

At first, I was not exactly sure how I should conceive the game and my experience — I was just staring at the end credits in awe, and I knew that something had affected me deeply. “I have to digest this for a while. But it was beautiful”, I wrote after having finished *The Beginner’s Guide*. Again, I quickly found myself revisiting the game by looking up online gameplay videos, particularly of the final chapters.

“I believe that the game stirred this healthy kind of self-reflection in me”, I wrote in a subsequent reflective journal; “The game’s largest theme to me was creativity.” I could, to a certain extent, identify with the narrator’s feelings of insufficiency and how he imposed his identity on the creative work of others as an attempt to fill some internal hole within himself. As such, the game seemed to widen my understanding of creativity, and how it may manifest itself in me and others. I found the game to depict struggles with creativity and personal insecurities as relatable aspects of the human condition. This insight felt to heighten my capacity for self-compassion and empathy towards others. In addition, as a game, *The Beginner’s Guide* felt very inventive, and it widened my appreciation for videogames as an artistic medium — because that is what I felt the game to be at its core: a work of art. Therefore, I deemed my game experience with *The Beginner’s Guide* as personally transformative.

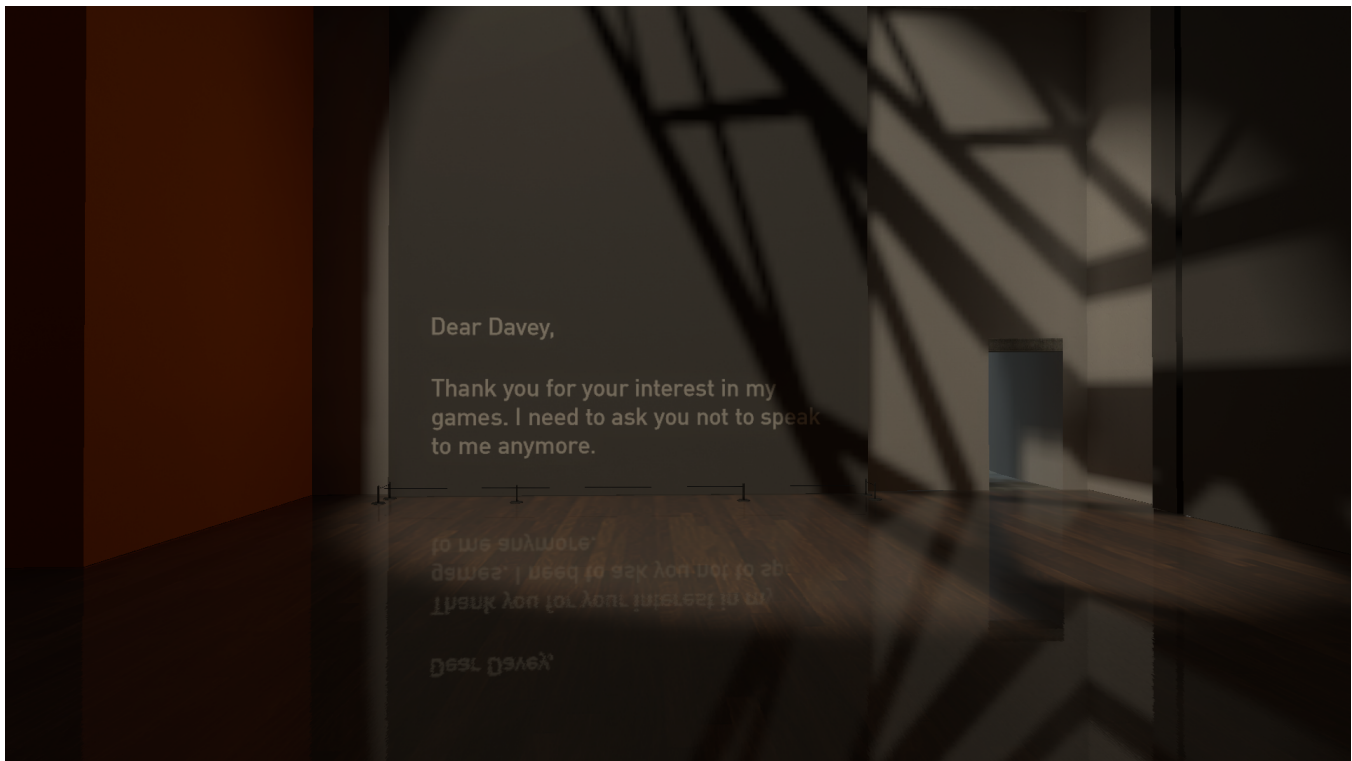


Figure 3: A message on a wall from Coda to the narrator: “Dear Davey, Thank you for your interest in my games. I need to ask you not to speak to me anymore.” Screenshot of *The Beginner’s Guide* [43], ©Davey Wreden

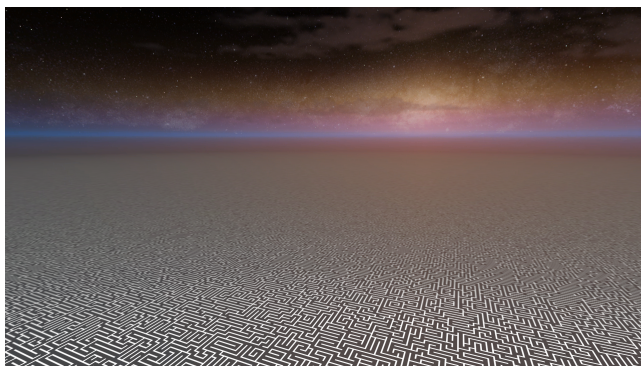


Figure 4: The final scene of the game: the player is transcending towards space and a massive maze is revealed below. Screenshot of *The Beginner’s Guide* [43], ©Davey Wreden

4.5 Summary of Findings

In summary, the five games that I played managed to trigger a diverse spectrum of aesthetic experiences in me. Two of the games, (*Doki Doki Literature Club!* and *The Beginner’s Guide*), resulted in powerful experiences that I would go on to characterize as profound and transformative, as they included high degrees of emotionality and self-reflection, and provided me with newfound perspectives on myself and topics such as creativity and depression — as well

as on videogames as a medium — increasing my capacity for self-understanding and empathy. On a general level, I would describe my experiences with the other three titles as ranging from monotonous and emotionally somewhat indifferent (*God of War*), to viscerally arousing and enjoyable (*Bloodborne*), or insightful and amusing (*The Stanley Parable*), but not particularly self-reflective or profound.

The two transformative videogame experiences seemed to share several notable aspects. In both cases, there was present a pronounced sense of personal relevance and connectedness, and I could readily relate my own values, beliefs, and experiences into my game experience. Furthermore, both game experiences were characterized by a deep investment into their gameplay and narrative: i.e., throughout the gameplay experience, they appeared to consistently solicit a high degree of emotional and cognitive involvement from me as a player. This cognitive, or intellectual involvement was expressed mainly as the prevalence of feelings such as curiosity and confusion — and emotional involvement, as the prevalence of salient emotional responses and intimate engagement with emotionally challenging topics addressed in the narrative.

Another related aspect of both game experiences was how they challenged my expectations of videogames as medium by providing me with gameplay experiences that felt novel, unpredictable, and unprecedented. This was related mainly to the self-reflexive nature of the games, i.e., the extent to which they acknowledged their own role as videogames. Consequently, rather than resulting in an experience of immersion where I as a player would forget that I

am playing a videogame, these self-reflexive intrusions would have me questioning the boundaries between fiction and reality, and evoke a feeling of being engaged in gameplay, while being acutely self-aware and critical of my role as a player of a game.

Finally, both of the transformative videogame experiences left profound impressions that resonated and lingered with me long after their gameplay, resulting in an extended period of time during which I was compelled to re-engage with my game experience. In both cases, immediately upon finishing the games there was prevalent was a certain bewilderment and disorientation: I had been deeply affected but was not sure what exactly to make of my experience. Subsequent reflective journals and memos revealed ongoing reflection and meaning-making regarding these lingering game experiences. At some point, the reflection would seem to have come to a halt, as I had arrived at a more coherent resolution and cherished the initially discrepant experiences as meaningful and harmonious memories. “I feel like both of the game experiences nurtured my emotional wellbeing in a healthy way, and expanded my understanding of life and of my self”, I wrote two weeks after having finished both games; “I feel like both of the games were implemented in a beautiful and innovative way, and they touched upon topics that were relevant and meaningful to me.” In the case of *Doki Doki Literature Club!*, these topics were depression and the struggle to understand another person’s experience — and in *The Beginner’s Guide* the topics were creativity in its different forms as well as humane feelings of inadequacy.

5 DISCUSSION

videogames have the capacity to foster profound, life-altering transformative experiences in players. Prior work has typically been limited to clearly defined and readily measurable transformative outcomes [see, 27], while ignoring more elusive, profound, and individualistic facets of player transformation [92]. Through our exploratory autoethnographic study, we investigated the dynamics and trajectory of such transformative videogame experiences. The following section examines our findings in relation to prior literature and discusses some of the limitations in the present study. Finally, we consider how our findings could inform the design of transformative experiences in HCI more broadly.

5.1 On the Transformativeness of an Experience

Transformative experience appears to be a moniker that can entail a wide range of different experiences varying in their nature and intensity [see, 20, for an overview]. The same can be argued for self-transcendent experiences, which have often been understood to precede transformative experiences [66]; that is, self-transcendence incorporate a spectrum of experiences ranging from the more routine, such as flow and loss of self-awareness, to more intense, such as a sense of unity with everyone and everything [see, 124, for an overview]. However, in the present study, we approached the phenomenon of transformation from the perspective of aesthetic experience, drawing conceptual inspiration from the ways in which empirical aesthetics has modelled the psychological processes of art perception [see, 91, for an overview].

Seeing how the aesthetic experience is concerned with “meanings that are ineffable, but feelingful” [69, p.158], it may be difficult

to explicate or define the effect of a potentially transformative aesthetic experience. In their art perception model, Pelowski et al. [91] related learning and personal growth to the transformative aesthetic outcome but also to a less intense outcome characterized as *novelty*. What distinguishes the novelty and transformative outcomes is that the latter concerns “a more core aspect of the self” [91, p.95]. However, the model remains somewhat ambiguous about what comprises a core aspect of the self and what does not. Thus, there seems to be some subjectivity in this experiential distinction.

Nevertheless, Pelowski et al. [91] suggest that the emotional responses that one reports could be used as a guide for demarcating different experiential outcomes. As such, the autoethnographer’s reports of his experiences with *Doki Doki Literature Club!* and *The Beginner’s Guide* seem to closely relate to the expected emotional responses of transformative aesthetic outcomes [26, 90, 91]. Confusion and uncertainty were reported during the gameplay, as is expected when a self-relevant discrepancy emerges [91]; particularly in *Doki Doki Literature Club!*, the player reported the addition of anxiety and a desire to disengage [91]. Nearing the conclusion of the gameplay, the player reported notions such as epiphany, profound beauty, and meaningfulness [91], and catharsis and insight [90]. In both cases, he also reported self-transcendent emotions, including awe and compassion [124]. In addition, self-awareness and metacognitive reflection [91] were reported throughout the experience.

In his retrospective accounts, the player articulated feelings of personal wholeness and connectedness [26], as he characterized how the game experiences fostered his emotional well-being and expanded his capacity for understanding himself, others, and the human condition in general. More specifically, the autoethnographer reflected how the games expanded his perspectives on personally significant topics, such as depression, creativity, difficulties of connecting with others, and humane struggles with feelings of inadequacy.

Thus, the progression of the autoethnographer’s videogame experiences seemed to closely resemble that of transformative aesthetic experiences [89–91]. Hence — although one can evidently experience perspective transformations that are more extreme and fundamental in their nature — we find it reasonable to presume that the autoethnographer’s videogame experiences with the abovementioned two games were in fact transformative in the aesthetic sense that our encounters with artworks can on occasions be [89–91]. However, it remains somewhat unclear at which point in its trajectory can an aesthetic experience be considered as transformative, and how exactly the role of self-transcendent emotions such as awe [82, 91, 124] should be understood in the overall progression.

5.2 Self-Reflexivity in Games

Our findings suggest that one manner in which videogames may facilitate transformation is through self-reflexive techniques — i.e., by highlighting their own artificiality — that reciprocally shift the player’s attention from the gameplay to themselves as a player of a game. In our study, an explicit form of such self-reflexivity was found in cases where the game made a direct reference to the player or to itself as a game, i.e., by *breaking the fourth wall*, or in the context of videogames, perhaps more accurately by “relocating it entirely behind the player” [24, p.153]. A more implicit form of

self-reflexivity might be understood as the subversion of player expectations and established conventions of the medium. For example, in some cases, the autoethnographer perceived the game as malfunctioning in some way — which resembles something Barkman [4] related to *Doki Doki Literature Club!*, as he proposed that the game employs *metalepsis*, or the “transgressing of boundaries between different worlds” (p. 1-2), as “a narrative device to unnerve and disorient the player” (p. 18). On a similar note, Filipe [46] argued that conforming to established gaming conventions and predispositions limits the spectrum of possible player experiences and their transformative power.

In empirical aesthetics, Pelowski et al. [91, p.100] associated transformative aesthetic experiences with high degrees of self-awareness of one’s experience, which “can also be connected to awareness of some ‘trigger’ which can induce reflection on the self”; “In art with a temporal component this may involve a climax or new information — a death of a character — that irrevocably demands that one give up their earlier expectations/schema or processing approach”, they described [91, p.100]. However, they did not discuss how this may relate to cases with an *interactive* component. In videogames, perhaps such trigger for transformative self-reflection could be produced through self-reflexive intrusion that “oversteps the boundaries between diegetic and non-diegetic” [24, p.145]. Fest [45, p.5] suggested that “the increasing presence of self-reflexivity in videogames should be read as a sign of their aesthetic maturation”. We further argue that it is this extended capacity for self-reflexivity that may hold the key to further unlocking some of the transformative power of interactive media.

5.3 Between Immersion and Reflection

Whereas immersion has at times been used as a synonym for engagement, our findings support the argument by Aeschbach et al. [1] that one can be deeply engaged in a game without being immersed. We found that autoethnographer’s engagement with some of the games that did not evoke notable reflection was more readily characterized in terms of immersion as involvement in the task environment and lack of awareness of the real world [61]. However, in the two transformative cases, his engagement seemed to resemble more closely Khaled’s [65, p.23-24] characterization of reflective play as “revisiting our previous beliefs intentionally and with a high degree of self-awareness [while] acknowledging and incorporating the ‘fourth wall’, even if this conflicts with the experience of ‘being there’ ”.

Nevertheless, we did notice similarities between this more reflective form of engagement and the concept of immersion. Jennet et al. [61] identified five factors of immersion; in the transformative cases of our study, the three factors of *cognitive involvement*, *emotional involvement*, and *challenge* (albeit the kind that is more emotional/intellectual [21]) appeared to be prevalent, whereas the other two factors of *real world dissociation* and *control* [61] were lacking. Contrarily, what were often present were a pronounced real world *association* and a *lack of control*.

Our findings support the hypothesis by Aeschbach et al. [1] that an alienated or self-aware form of play could foster critical reflection. What characterized the transformative videogame experiences in our study was a self-reflexive but evocative form of

player engagement: one where the player was often acutely aware of themselves as a player of a game. However, despite this critical distance between the player and the game, the autoethnographer still felt deeply invested in the game and its narrative on an emotional, cognitive, and personal level. Such characterizations seem to bear a resemblance to Cole and Gillies’s [23] idea of emotional exploration and to Rautalahti’s [99, p.2] idea of *enchantment* as “an aesthetic attitude” or sensation of “being in relation with the (digital) environment”.

Presently, PX research seems to lack established conceptualizations to help depict or measure such a self-reflexive but emotionally evocative form of player engagement that is distinct from immersion. We suggest that deeper investigations of players’ perceptions and emotionality during gameplay could help clarify some of the ambivalence surrounding immersive and reflective play. Furthermore, we suggest that focusing on dimensions of real world (dis)association and (lack of) control might help distinguish immersive engagement from a more self-reflexive engagement.

5.4 Relatedness and Self-Relevance through Ambiguity

In both transformative videogame experiences of our study, the player reported a pronounced sense of relatedness due to an intimate connection with the game narrative and its themes. For example, in *Doki Doki Literature Club!*, the autoethnographer was controlling in a first-person point-of-view a rather ambiguously defined character, whom he could identify with to the extent that he sometimes felt as if playing as himself. As such, our findings seem to align with Cole and Gillies [23] who propose relatedness and ambiguity as components of reflective and self-expansive eudaimonic gameplay experiences.

This notion may perhaps be seen to conflict with the results of Iacovides et al. [59], who found that distancing the player from the player character — i.e., allowing them to assume the role of someone other than themselves — could facilitate transformative reflection. However, Iacovides et al. [59] were concerned with games with persuasive purposes in an educational context. Such strategy of distancing might not be as feasible in cases where players “*want* to know how to contextualize their game experiences back to the world” [65, p.23], such as in the context of eudaimonic gameplay experiences [e.g., 23]. Similarly, Rusch [104, p.23] proposed that the process of individualistic, profound transformation “occurs through resonance, not coercion”.

Hence, rather than character definedness or point-of-view per se, it may be more relevant to provide players with sufficient reflective surface that allows them to connect with *something* in the game on an intimate level. Ambiguity has been recognized as a tool for designing for emotional and interpretive player experiences [23, 33] — and perhaps in the context of transformative player experiences, ambiguity might be considered as an approach for providing grounds for cultivating feelings of self-relevance, personal connection, and psychological resonance.

In empirical aesthetics, Pelowski et al. [91] delineated *high self-relevance* and *high coping need* as preconditions for transformative aesthetic outcomes; i.e., a discrepant encounter need not only pose a threat to one’s self-image, but this threat must be perceived

as of high personal relevance, relating to some core aspect(s) of one's self [91]. Due to their capacity to personally invest users into their aesthetic experience, we suggest that interactive technologies could be a particularly effective medium for fostering self-relevance that can attribute to transformative outcomes. This capacity for investment may resemble what Cole and Gillies [23] referred to as interactive vulnerability in the context of videogames.

5.5 From Disorientation to Harmony

Finally, our study provides insights into the temporal trajectory of profoundly meaningful and transformative player experiences. Within HCI, resonance has been identified as one of the components of meaningful interaction, but there has been a lack of characterizations and narratives of the more concrete sources and processes of meaning-making [76]. Our study offers empirical insights into the interconnections of the experiential components of meaning-making [76]; more specifically, we outlined how resonance evolved over time into personal significance and coherence.

In both transformative videogame experiences of the present study, the gameplay resulted in perceptions of some intuitive but ineffable sense of meaning, which retrospectively was replaced by a more coherent and tangible sense of meaning. Whereas feelings of confusion and disorientation were frequently prevalent during gameplay, after the game narrative had reached its conclusion, feelings such as beauty, beauty, meaningfulness, awe, and appreciation were on the surface. However, a sense of confoundment and incomprehension still outlined these experiences and lingered for days. We found that it was only after an extensive period of post-play re-engagement that these resonating and lingering impressions were eventually replaced by more coherent and harmonious views. In addition to solely mental recollection and reflection, this re-engagement manifested itself as re-exposure to the game content, for example, by watching gameplay videos, reading online reviews and comments, and listening to the soundtrack.

Our findings suggest that transformative videogame experiences may be triggered by discrepant gameplay encounters that challenge the player's expectations and views and result in impressions that resonate and linger with the player. Moreover, our findings suggest that subsequent re-engagement with such discrepant and lingering encounters can act as a meaning-making period during which the player adopts a novel, more harmonious, coherent, and meaningful outlook on their past gameplay experience and on their self. These experiential findings seem to align with how transformative aesthetic experiences have been modelled in empirical aesthetics [89–91]. Pelowski et al. [91] modelled five distinct outcomes for an aesthetic experience and argue that whereas they are mutually exclusive “it is possible that an individual might re-engage in another loop, leading to a different output” [91, p.96]; “For example, this may occur in transformation that leads to harmonious flow” [91, p.96], the authors suggested, but they do not describe in much detail how such re-engagement might concretely occur or evolve over time.

Thus, it seems that this act of re-engagement after an encounter with an aesthetic object can have a pivotal role in the overall progression of what people deem as profound, transformative aesthetic experiences, and we suggest that the different ways in which this

post-encounter re-engagement may manifest itself calls for more empirical attention. Moreover, we suggest that for videogames — “as a medium that invites continuous re-engagement” [62, p.106] — this may have particularly interesting implications.

Re-engagement could perhaps be embodied as an integral element of the game and its narrative, requiring players to re-expose themselves with their disorientating experiences. Murray [84, p.169] proposed two types of complex storytelling that are particularly fitting for an interactive digital medium: (1) “Navigating an unchanging set of events but from multiple contrasting points of view”, and (2) “Replaying a real or fictional scenario with dramatically contrasting variations based on changes to circumstances or character choices”. For example, *Doki Doki Literature Club!* seemed to resemble this second type, as the game suddenly begins looping itself from the beginning in a drastically different manner. In addition, the first type, navigating events through contrasting perspectives, could possibly be employed to help players accommodate novel meaning perspectives. We suggest that some of the transformative power of videogames may lie in the manifold ways in which purposeful forms of re-engagement could be designed for as an integral component of the players' aesthetic experience.

5.6 Limitations of Present Work

An essential characteristic of our autoethnographic study is that it examines the lived experience of one researcher. As such, our study is exploratory, and we make no claim for its generalizability to a wider population. In autoethnography, questions of generalizability are left to readers who can determine to what extent the story speaks to them about their life or the experience of others they know [42]. Our study presents intimate and nuanced descriptions of player behaviour and interactional contexts of gameplay. Rather than providing evidence for strong claims, our findings serve as a chart to coordinate avenues for further work and to inform potential hypotheses and further conceptualizations and empirical accounts of transformative player experiences.

Another limitation of our study could be that due to the research setting, the self-monitored gameplay sessions from which data were collected may not accurately represent real-life playing situations. However, due to the episodic and self-driven nature of most videogames — and seeing that videogames are not necessarily intended to be played through in one uninterrupted session — stopping periodically to take notes of one's experience may arguably be less intrusive than in non-interactive media, say in the context of film viewing.

However, when considering reflective and transformative experiences, a method such as autoethnography that demands intense self-reflexivity may support the production of the kinds of experiences that it sets out to study. In fact, autoethnography, due to its capacity to foster self-awareness and self-discovery, has been described as “a transformative research method” [28, p.11]. Nevertheless, this limitation may not be unique to first-person methods: asking participants to describe and discuss reflective player experiences may also encourage reflection in them, as noted by Iacovides et al. [59].

As such, much is still unclear about how players encounter experiences of transformation in their more typical, everyday gaming situations and how individual differences in players may affect

their inclination towards transformative videogame experiences. Individuals are seen to have varying tendencies towards engaging in self-conscious and self-reflective activities [112]. Likewise, in videogames, players appear to have varying motivations for engaging in self-expansive eudaimonic gameplay [23]. Transformative aesthetic experiences generally seem to require a high degree of self-awareness and a certain readiness to undergo the psychologically demanding process of self-change [91]. Thus, it is likely that the individual traits of the autoethnographer played a notable role in the shaping of his videogame experiences.

5.7 Recommendations and Design Implications for HCI

Whereas we investigated videogames specifically, our findings can inform a broader section of HCI that investigates how interactive technologies could elicit transformative experiences cultivating our well-being. As such, our study contributes to broader HCI discussions on eudaimonic [75], meaningful [76] and transformative [66, 82] human-technology interactions.

We propose that interactive technologies can offer particularly effective approaches to inviting perceptions of self-relevance and self-awareness, which have been seen as prerequisites for transformative aesthetic outcomes [91]. In HCI, ambiguity has been considered a useful design resource [50], which we suggest might provide a means for fostering deeper personal investment in the user experience, allowing possibilities for psychological resonance.

Further, we highlight the role negative emotional responses in the overall trajectory of transformative human-technology interactions. Feelings such as confusion and anxiety have been seen as integral components of transformative aesthetic experiences [91], but they have not yet gained much consideration in the context of technology that seeks to elicit similar experiences. Hence, in contrast to prioritizing comfort, familiarity, and immersion [e.g., 67, 82], we propose that designers of certain individualistic, profound, and transformative experiences should not refrain from embracing discrepancy, emotional challenge, and critical self-awareness.

Finally, we propose the idea of re-engagement as an integral meaning-making period during which novel perspectives are accommodated. This seems worthy of more empirical attention in itself, i.e., how do users retrospectively engage with their technology interactions, and how does this change their overall experience? Hence, we echo Kjærup et al. [68] in their calling attention to longitudinal research that considers the trajectory of human-technology interactions in length. Longitudinal approaches could help further understand how emotionally negative user experiences can evolve into profoundly positive ones, e.g., how disempowerment can contribute to meaningful experiences [see, 119].

Furthermore, in the context of interactive technologies, the notion of re-engagement could have particularly powerful implications, since it need not be limited to those initiated retrospectively by the user. Miller et al. [82] suggested considering how users could accommodate positive changes within a virtual environment. We propose that one approach could be to design for meaningful re-engagement within the human-technology interaction. This could mean confronting the user with their discrepant experiences and

providing affordances for thoughtful re-assessment and adoption of novel, more harmonious perspectives.

6 CONCLUSIONS

In this study, we analyzed autoethnographic data of the first author's player experiences with narratively rich entertainment videogames, and identified four overarching themes in profound, personally meaningful, and transformative videogame experiences. Our findings provide novel and intimate insights into the trajectory of profound and transformative player experiences. Particularly, we suggest that a period of subsequent re-engagement with a disorienting and resonant encounter can be a pivotal and previously overlooked component in the longitudinal progression of transformative aesthetic player experiences. Furthermore, through the four themes, we propose ways in which videogames may be a particularly well-suited medium for evoking transformative aesthetic experiences. For example, we argue that videogames may facilitate a self-reflexive form of engagement in players that supports transformative reflection, due to their extended capacity for self-reflexivity that transgresses the perceived boundaries between fiction and reality. In addition, due their capacity to invest players deeply into their gameplay and narrative, games could foster perceptions of personal relevance and investment that cultivate meaning-making and transformative reflection. Finally, on a more general level, we suggest that a further adaptation of empirical aesthetics models of transformative aesthetic experiences [89–91] could provide HCI helpful tools for increasing our understanding on the wide spectrum of aesthetic experiences afforded by interactive technologies, including those that are profound, individualistic, deeply meaningful, and even life-changing.

SUPPLEMENTARY MATERIAL

In the spirit of transparency, the initial self-reflexive narrative and an illustration and description of the categorization that were produced during the data analysis can be found at <https://osf.io/yg26r/>.

ACKNOWLEDGMENTS

The research was funded by the Research Council of Finland (MAGE – Establishing a Model of Aesthetic Game Experience, 339350). We would like to thank Jan B. Vornhagen for providing highly constructive and thorough feedback and valuable suggestions for an early draft of the manuscript.

REFERENCES

- [1] Lena Fanya Aeschbach, Klaus Opwis, and Florian Brühlmann. 2022. Breaking immersion: A theoretical framework of alienated play to facilitate critical reflection on interactive media. *Frontiers in Virtual Reality* 3 (2022), 1–14. <https://doi.org/10.3389/frvir.2022.846490>
- [2] Leon Anderson. 2006. Analytic autoethnography. *Journal of Contemporary Ethnography* 35, 4 (2006), 373–395. <https://doi.org/10.1177/0891241605280449> ISBN: 0891241605280.
- [3] Sasha A. Barab, Patrick Pettyjohn, Melissa Gresalfi, Charlene Volk, and Maria Solomou. 2012. Game-based curriculum and transformational play: Designing to meaningfully positioning person, content, and context. *Computers & Education* 58, 1 (Jan. 2012), 518–533. <https://doi.org/10.1016/j.compedu.2011.08.001>
- [4] Christopher Barkman. 2021. “There’s no point in saving anymore”: Diegesis and Interactional Metalepsis in Pony Island and Doki Doki Literature Club. *Journal of Games Criticism* 5, 1 (2021), 1–22.

- [5] Anne Bartsch and Tilo Hartmann. 2017. The Role of Cognitive and Affective Challenge in Entertainment Experience. *Communication Research* 44, 1 (2017), 29–53. <https://doi.org/10.1177/0093650214565921>
- [6] Eric P.S. Baumer, Vera Khovanskaya, Mark Matthews, Lindsay Reynolds, Victoria Schwanda Sosik, and Geri Gay. 2014. Reviewing reflection: on the use of reflection in interactive system design. In *Proceedings of the 2014 conference on Designing interactive systems*. ACM, Vancouver BC Canada, 93–102. <https://doi.org/10.1145/2598510.2598598>
- [7] Steve Benford and Gabriella Giannachi. 2008. Temporal trajectories in shared interactive narratives. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, Florence Italy, 73–82. <https://doi.org/10.1145/1357054.1357067>
- [8] Cynthia L. Bennett, Burren Peil, and Daniela K. Rosner. 2019. Biographical Prototypes: Reimagining Recognition and Disability in Design. In *Proceedings of the 2019 on Designing Interactive Systems Conference*. ACM, San Diego CA USA, 35–47. <https://doi.org/10.1145/3322276.3322376>
- [9] Marit Bentvelzen, Pawel W. Woźniak, Pia S.F. Herbes, Evropi Stefanidi, and Jasmin Niess. 2022. Revisiting Reflection in HCI: Four Design Resources for Technologies that Support Reflection. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 6, 1 (March 2022), 1–27. <https://doi.org/10.1145/3517233>
- [10] Arthur P. Bochner. 1984. The functions of human communication in interpersonal bonding. In *Handbook of rhetorical and communication theory*. Allyn & Bacon, Boston, 544–621.
- [11] Kirsten Bochner, Phoebe Sengers, and Simeon Warner. 2008. Interfaces with the ineffable: Meeting aesthetic experience on its own terms. *ACM Transactions on Computer-Human Interaction* 15, 3 (2008), 1–29. <https://doi.org/10.1145/1453152.1453155>
- [12] Julia Ayumi Bopp, Elisa D. Mekler, and Klaus Opwis. 2016. Negative emotion, positive experience? Emotionally moving moments in digital games. *Conference on Human Factors in Computing Systems - Proceedings* 2016-May (2016), 2996–3006. <https://doi.org/10.1145/2858036.2858227> ISBN: 9781450333627.
- [13] Julia Ayumi Bopp, Klaus Opwis, and Elisa D Mekler. 2018. “An Odd Kind of Pleasure”: Differentiating Emotional Challenge in Digital Games. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, New York, NY, USA, 1–12. <https://doi.org/10.1145/3173574.3173615> Series Title: CHI '18.
- [14] Julia Ayumi Bopp, Jan B. Vornhagen, and Elisa D. Mekler. 2021. “My Soul Got a Little Bit Cleaner”: Art Experience in Videogames. *Proceedings of the ACM on Human-Computer Interaction* 5, CHI PLAY (Oct. 2021), 237:1–237:19. <https://doi.org/10.1145/3474664>
- [15] Mollie Braley, Nisha Kunhikrishnan, Siyu Chen, Yu-Kai Chiu, Yifei Zhao, Matthew Bofenkamp, Michael Christel, and Jessica Hammer. 2019. Promoting Player Empathy for People Living with Poverty. In *Extended Abstracts of the Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts*. ACM, Barcelona Spain, 233–239. <https://doi.org/10.1145/3341215.3196824>
- [16] H.S. Broudy. 1987. *The Role of Imagery in Learning*. Getty Center for Education in the Arts, Los Angeles, California. <https://books.google.fi/books?id=V8LyN0U71rEC>
- [17] Jane M Burns, Marianne Webb, Lauren A Durkin, and Ian B Hickie. 2010. Reach Out Central: a serious game designed to engage young men to improve mental health and wellbeing. *Medical Journal of Australia* 192, S11 (June 2010), S27–S30. <https://doi.org/10.5694/j.1326-5377.2010.tb03689.x>
- [18] Marta E. Cecchinato, Anna L. Cox, and Jon Bird. 2017. Always On(line)? User Experience of Smartwatches and their Role within Multi-Device Ecologies. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (Denver, Colorado, USA) (CHI '17). Association for Computing Machinery, New York, NY, USA, 3557–3568. <https://doi.org/10.1145/3025453.3025538>
- [19] Heewon Chang. 2008. *Autoethnography as Method*. Left Coast Press, Walnut Creek, CA, USA.
- [20] Alice Chirico, Marta Pizzolante, Alexandra Kitson, Elena Gianotti, Bernhard E. Riecke, and Andrea Gaggioli. 2022. Defining Transformative Experiences: A Conceptual Analysis. *Frontiers in Psychology* 13 (June 2022), 790300. <https://doi.org/10.3389/fpsyg.2022.790300>
- [21] Tom Cole, Paul Cairns, and Marco Gillies. 2015. Emotional and Functional Challenge in Core and Avant-garde Games. In *Proceedings of the 2015 Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '15)*. Association for Computing Machinery, New York, NY, USA, 121–126. <https://doi.org/10.1145/2793107.2793147> event-place: <conf-loc>, <city>London</city>, <country>United Kingdom</country>, </conf-loc>.
- [22] Tom Cole and Marco Gillies. 2021. Thinking and Doing: Challenge, Agency, and the Eudaimonic Experience in Video Games. *Games and Culture* 16, 2 (2021), 187–207. <https://doi.org/10.1177/1555412019881536>
- [23] Tom Cole and Marco Gillies. 2022. Emotional Exploration and the Eudaimonic Gameplay Experience: A Grounded Theory. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (, New Orleans, LA, USA), (CHI '22). Association for Computing Machinery, New York, NY, USA, Article 470, 16 pages. <https://doi.org/10.1145/3491102.3502002>
- [24] Steven Conway. 2010. A circular wall? Reformulating the fourth wall for videogames. *Journal of Gaming and Virtual Worlds* 2, 2 (2010), 145–155. https://doi.org/10.1386/jgvw.2.2.145_1
- [25] Rui Craveirinha and Licinio Roque. 2019. Impact of Game Elements in Players Artistic Experience. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems* (Glasgow, Scotland Uk) (CHI EA '19). Association for Computing Machinery, New York, NY, USA, 1–6. <https://doi.org/10.1145/3290607.3313049>
- [26] M Csikszentmihalyi, R E R Mihály Csikszentmihályi, R E Robinson, C string, Los Angeles Getty Center for Education in the Arts CA., J Paul Getty Museum, Getty Center for Education in the Arts, and Malibu J. Paul Getty Museum CA. 1990. *The Art of Seeing: An Interpretation of the Aesthetic Encounter*. J.P. Getty Museum, Los Angeles, CA, USA. <https://books.google.fi/books?id=ayWdarE6K0AC> Series Title: Getty Trust Publications: Getty Education Institute for the Arts Series.
- [27] Sabrina Culyba. 2018. *The Transformational Framework: A Process Tool for the Development of Transformational Games*. Carnegie Mellon University: ETC Press, Pittsburgh, PA, USA. https://kithub.cmu.edu/articles/journal_contribution/The_Transformational_Framework_A_Process_Tool_for_the_Development_of_Transformational_Games/7130594
- [28] Dwayne Custer. 2014. Autoethnography as a Transformative Research Method. *The Qualitative Report* 19, 37 (2014), 1–13. <https://doi.org/10.46743/2160-3715/2014.1011>
- [29] Rowan Daneels, Nicholas D. Bowman, Daniel Possler, and Elisa D. Mekler. 2021. The ‘eudaimonic experience’: A scoping review of the concept in digital games research. *Media and Communication* 9, 2 (2021), 178–190. <https://doi.org/10.17645/mac.v9i2.3824>
- [30] Rowan Daneels, Steven Malliet, Lieven Geerts, Natalie Denayer, Michel Walrave, and Heidi Vandebosch. 2021. Assassins, gods, and androids: How narratives and game mechanics shape eudaimonic game experiences. *Media and Communication* 9, 1 (2021), 49–61. <https://doi.org/10.17645/MAC.V9I1.3205>
- [31] Charlotte Aull Davies. 1999. *Reflexive Ethnography: A Guide to Researching Selves and Others*. Routledge, New York.
- [32] Edward L. Deci and Richard M. Ryan. 2008. Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology* 49, 3 (2008), 182–185. <https://doi.org/10.1037/a0012801>
- [33] Alena Denisova, Julia Ayumi Bopp, Thuy Duong Nguyen, and Elisa D Mekler. 2021. “Whatever the Emotional Experience, It’s Up to Them”: Insights from Designers of Emotionally Impactful Games. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (, Yokohama, Japan.) (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 120, 9 pages. <https://doi.org/10.1145/3411764.3445286>
- [34] Audrey Desjardins and Aubree Ball. 2018. Revealing Tensions in Autobiographical Design in HCI. In *Proceedings of the 2018 Designing Interactive Systems Conference*. ACM, Hong Kong China, 753–764. <https://doi.org/10.1145/3196709.3196781>
- [35] Audrey Desjardins, Oscar Tomico, Andrés Lucero, Marta E. Cecchinato, and Carman Neustaedter. 2021. Introduction to the Special Issue on First-Person Methods in HCI. *ACM Trans. Comput.-Hum. Interact.* 28, 6, Article 37 (dec 2021), 12 pages. <https://doi.org/10.1145/3492342>
- [36] John Dewey. 1916. *Democracy and Education: An Introduction to the Philosophy of Education*. Macmillan, New York. <https://archive.org/details/democracyandedu00dewegoo/page/n76/mode/2up?view=theater>
- [37] John Dewey. 1933. *How we think: A restatement of the relation of reflective thinking to the educative process*. DC Heath, Lexington, Massachusetts, USA.
- [38] John Dewey. 1980. *Art as Experience*. Perigee Trade, New York. <https://books.google.fi/books?id=aAbqAGo5MwwC>
- [39] Naughty Dog. 2013. *The Last of Us*. Game [Playstation 3]. Sony Computer Entertainment..
- [40] Margot Duncan. 2004. Autoethnography: Critical Appreciation of an Emerging Art. *International Journal of Qualitative Methods* 3, 4 (2004), 28–39. <https://doi.org/10.1177/160940690400300403>
- [41] Carolyn Ellis and Tony E. Adams. 2014. The Purposes, Practices, and Principles of Autoethnographic Research. In *The Oxford Handbook of Qualitative Research*. Oxford University Press, Oxford, England, UK. https://doi.org/10.1093/oxfordhb/9780199811755.013.004_eprint: https://academic.oup.com/book/0/chapter/333001752/chapter-ag-pdf/44460156/book_38166_section_333001752.ag.pdf.
- [42] Carolyn Ellis, Tony E Adams, and Arthur P Bochner. 2011. Autoethnography: An Overview. *Historical Social Research / Historische Sozialforschung* 36, 4 (2011), 273–290.
- [43] Everything Unlimited Ltd. 2015. *The Beginner’s Guide*. Game [PC]. Everything Unlimited Ltd. Last played October 2021.
- [44] Piyum Fernando, Matthew Pandelakis, and Stacey Kuznetsov. 2016. Practicing DIYBiology In An HCI Setting. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. ACM, San Jose California USA, 2064–2071. <https://doi.org/10.1145/2851581.2892325>

- [45] Bradley J. Fest. 2016. Metaproceduralism: the Stanley Parable and the Legacies of Postmodern Metafiction. *Wide Screen* 6, 1 (2016), 1–23. <https://doi.org/10.17613/M6V02N>
- [46] Eva Patrícia Ribeiro Filipe. 2018. Harnessing Interactive Media Ideological Power: A Disempowerment Model for Video Games. *Proceedings of the Play2Learn, Lisbon, Portugal 19* (2018), 333–349.
- [47] Rowanne Fleck and Geraldine Fitzpatrick. 2010. Reflecting on Reflection: Framing a Design Landscape. In *Proceedings of the 22nd Conference of the Computer-Human Interaction Special Interest Group of Australia on Computer-Human Interaction (OZCHI '10)*. Association for Computing Machinery, New York, NY, USA, 216–223. <https://doi.org/10.1145/1952222.1952269> event-place: Brisbane, Australia.
- [48] FromSoftware. 2015. *Bloodborne*. Game [PS4]. Sony Computer Entertainment, San Mateo, California, US. Last played October 2021.
- [49] Galactic Cafe. 2013. *The Stanley Parable*. Game [PC]. Galactic Cafe. Last played October 2021.
- [50] William W. Gaver, Jacob Beaver, and Steve Benford. 2003. Ambiguity as a resource for design. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Ft. Lauderdale, Florida, USA) (*CHI '03*). Association for Computing Machinery, New York, NY, USA, 233–240. <https://doi.org/10.1145/642611.642653>
- [51] Mark Girod, Todd Twyman, and Steve Wojcikiewicz. 2010. Teaching and Learning Science for Transformative, Aesthetic Experience. *Journal of Science Teacher Education* 21, 7 (Nov. 2010), 801–824. <https://doi.org/10.1007/s10972-009-9175-2>
- [52] Arthur M Glenberg, Margaret M Bradley, and Thomas A Kraus. 1983. Studies of the Long-Term Recency Effect: Support for a Contextually Guided Retrieval Hypothesis. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 9, 2 (1983), 231.
- [53] Chad Phoenix Rose Gowler and Ioanna Iacovides. 2019. "Horror, guilt and shame" – Uncomfortable Experiences in Digital Games. In *Proceedings of the Annual Symposium on Computer-Human Interaction in Play*. ACM, New York, NY, USA, 325–337. <https://doi.org/10.1145/3311350.3347179>
- [54] Lloyd Greene and George Burke. 2007. Beyond Self-actualization. *Journal of Health and Human Services Administration* 30, 2 (2007), 116–128. https://www.jstor.org/libproxy.aalto.fi/stable/4128807?seq=3#metadata_info_tab_contents
- [55] Noor Hammad, Owen Brierley, Zachary McKendrick, Sowmya Somanath, Patrick Finn, Jessica Hammer, and Ehud Sharlin. 2021. Homecoming: Exploring Returns to Long-Term Single Player Games. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (, Yokohama, Japan.) (*CHI '21*). Association for Computing Machinery, New York, NY, USA, Article 116, 13 pages. <https://doi.org/10.1145/3411764.3445357>
- [56] Markus Holdo. 2023. Critical Reflection: John Dewey's Relational View of Transformative Learning. *Journal of Transformative Education* 21, 1 (Jan. 2023), 9–25. <https://doi.org/10.1177/15413446221086727>
- [57] Sarah Homewood. 2023. Self-Tracking to Do Less: An Autoethnography of Long COVID That Informs the Design of Pacing Technologies. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. ACM, Hamburg Germany, 1–14. <https://doi.org/10.1145/3544548.3581505>
- [58] Kristina Höök. 2010. Transferring qualities from horseback riding to design. In *Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries*. ACM, Reykjavik Iceland, 226–235. <https://doi.org/10.1145/1868914.1868943>
- [59] Ioanna Iacovides, Joe Cutting, Jen Beeston, Marta E. Cecchinato, Elisa D. Mekler, and Paul Cairns. 2022. Close but Not Too Close: Distance and Relevance in Designing Games for Reflection. *Proceedings of the ACM on Human-Computer Interaction* 6, CHI PLAY (Oct. 2022), 1–24. <https://doi.org/10.1145/3549487>
- [60] Dhruv Jain, Audrey Desjardins, Leah Findlater, and Jon E. Froehlich. 2019. Autoethnography of a Hard of Hearing Traveler. In *The 21st International ACM SIGACCESS Conference on Computers and Accessibility*. ACM, Pittsburgh PA USA, 236–248. <https://doi.org/10.1145/3308561.3353800>
- [61] Charlene Jennett, Anna L. Cox, Paul Cairns, Samira Dhoparee, Andrew Epps, Tim Tijs, and Alison Walton. 2008. Measuring and defining the experience of immersion in games. *International Journal of Human Computer Studies* 66, 9 (2008), 641–661. <https://doi.org/10.1016/j.ijhcs.2008.04.004>
- [62] Jasmina Kallay. 2010. Cyber-Aristotle: towards a poetics for interactive screen-writing. *Journal of Screenwriting* 1, 1 (2010), 99–112. <https://doi.org/10.1386/josc.1.1.99/1>
- [63] Robin L. Kaplan, Ilse Van Damme, Linda J. Levine, and Elizabeth F. Loftus. 2016. Emotion and False Memory. *Emotion Review* 8, 1 (2016), 8–13. <https://doi.org/10.1177/1754073915601228>
- [64] Geoff Kaufman, Mary Flanagan, and Max Seidman. 2021. Creating Stealth Game Interventions for Attitude and Behavior Change. In *Persuasive Gaming in Context*. Amsterdam University Press, Amsterdam, Netherlands, 73–90. <http://www.jstor.org/stable/10.2307/j.ctv1hw3z1d> <https://doi.org/10.2307/j.ctv1hw3z1d.8>
- [65] Rilla Khaled. 2018. Questions Over Answers: Reflective Game Design. In *Playful Disruption of Digital Media*, Daniel Cermak-Sassenrath (Ed.). Springer Singapore, Singapore, 3–27. https://doi.org/10.1007/978-981-10-1891-6_1
- [66] Alexandra Kitson, Elizabeth Buie, Ekaterina R. Stepanova, Alice Chirico, Bernhard E. Riecke, and Andrea Gaggioli. 2019. Transformative Experience Design: Designing with Interactive Technologies to Support Transformative Experiences. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems* (Glasgow, Scotland UK) (*CHI EA '19*). Association for Computing Machinery, New York, NY, USA, 1–5. <https://doi.org/10.1145/3290607.3311762>
- [67] Alexandra Kitson, Mirjana Prpa, and Bernhard E. Riecke. 2018. Immersive Interactive Technologies for Positive Change: A Scoping Review and Design Considerations. *Frontiers in Psychology* 9 (Aug. 2018), 1354. <https://doi.org/10.3389/fpsyg.2018.01354>
- [68] Maria Kjærup, Mikael B. Skov, Peter Axel Nielsen, Jesper Kjeldskov, Jens Gerken, and Harald Reiterer. 2021. Longitudinal Studies in HCI Research: A Review of CHI Publications From 1982–2019. In *Advances in Longitudinal HCI Research*, Evangelos Karapanos, Jens Gerken, Jesper Kjeldskov, and Mikael B. Skov (Eds.). Springer International Publishing, Cham, 11–39. https://doi.org/10.1007/978-3-030-67322-2_2 Series Title: Human–Computer Interaction Series.
- [69] Alexis Kokkos. 2010. Transformative Learning Through Aesthetic Experience: Towards a Comprehensive Method. *Journal of Transformative Education* 8, 3 (July 2010), 155–177. <https://doi.org/10.1177/1541344610397663>
- [70] Anna Laros. 2017. Disorienting dilemmas as a catalyst for transformative learning. In *Transformative learning meets bildung*. Brill, Leiden, Netherlands, 85–95.
- [71] Andrés Lucero. 2018. Living Without a Mobile Phone: An Autoethnography. In *Proceedings of the 2018 Designing Interactive Systems Conference* (Hong Kong, China) (*DIS '18*). Association for Computing Machinery, New York, NY, USA, 765–776. <https://doi.org/10.1145/3196709.3196731>
- [72] J. Manning and T. Adams. 2015. Popular Culture Studies and Autoethnography: An Essay on Method. *The Popular Culture Studies Journal* 3, 1&2 (2015), 187–222. https://www.researchgate.net/publication/282330702_Popular_Culture_Studies_and_Autoethnography_An_Essay_on_Method
- [73] Tim Marsh and Brigid Costello. 2013. Lingering Serious Experience as Trigger to Raise Awareness, Encourage Reflection and Change Behavior. In *Persuasive Technology*, Shlomo Berkovsky and Jill Freyne (Eds.). Springer Berlin Heidelberg, Berlin, Heidelberg, 116–124.
- [74] Nora McDonald, Sarita Schoenebeck, and Andrea Forte. 2019. Reliability and Inter-rater Reliability in Qualitative Research: Norms and Guidelines for CSCW and HCI Practice. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (Nov. 2019), 1–23. <https://doi.org/10.1145/3359174>
- [75] Elisa D. Mekler and Kasper Hornbæk. 2016. Momentary Pleasure or Lasting Meaning? Distinguishing Eudaimonic and Hedonic User Experiences. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (San Jose, California, USA) (*CHI '16*). Association for Computing Machinery, New York, NY, USA, 4509–4520. <https://doi.org/10.1145/2858036.2858225>
- [76] Elisa D. Mekler and Kasper Hornbæk. 2019. A Framework for the Experience of Meaning in Human-Computer Interaction. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. ACM, Glasgow Scotland UK, 1–15. <https://doi.org/10.1145/3290605.3300455>
- [77] Elisa D. Mekler, Ioanna Iacovides, and Julia Ayumi Bopp. 2018. "A Game that Makes You Question...": Exploring the Role of Reflection for the Player Experience. In *Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play* (<conf-loc>, <city>Melbourne</city>, <state>VIC</state>, <country>Australia</country>, </conf-loc>) (*CHI PLAY '18*). Association for Computing Machinery, New York, NY, USA, 315–327. <https://doi.org/10.1145/3242671.3242691>
- [78] Jack Mezirow. 1978. Perspective transformation. *Adult Education Quarterly* 28, 2 (1978), 100–110. <https://doi.org/10.1177/074171367802800202>
- [79] Jack Mezirow. 1997. Transformative Learning: Theory to Practice. *New Directions for Adult and Continuing Education* 197, 74 (June 1997), 5–12. <https://doi.org/10.1002/ace.7401>
- [80] Jack Mezirow. 1998. On Critical Reflection. *Adult Education Quarterly* 48, 3 (May 1998), 185–198. <https://doi.org/10.1177/074171369804800305>
- [81] Jack Mezirow. 2003. Transformative Learning as Discourse. *Journal of Transformative Education* 1, 1 (2003), 58–63. <https://doi.org/10.1177/1541344603252172>
- [82] Noah Miller, Ekaterina R. Stepanova, John Desnoyers-Stewart, Ashu Adhikari, Alexandra Kitson, Patrick Pennefather, Denise Quesnel, Katharina Brauns, Anika Friedl-Werner, Alexander Stahn, and Bernhard E. Riecke. 2023. Awedyssey: Design Tensions in Eliciting Self-transcendent Emotions in Virtual Reality to Support Mental Well-being and Connection. In *Proceedings of the 2023 ACM Designing Interactive Systems Conference*. ACM, Pittsburgh PA USA, 189–211. <https://doi.org/10.1145/3563657.3595998>
- [83] Jenny A. Moon. 1999. *Reflection in Learning and Professional Development: Theory and Practice*. Kogan Page, London, UK.
- [84] Janet H. Murray. 2016. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. The MIT Press, Cambridge, Massachusetts, USA.
- [85] Simon Niedenthal. 2009. What We Talk About When We Talk About Game Aesthetics. In *Breaking New Ground: Innovation in Games, Play, Practice and Theory - Proceedings of DiGRA 2009 (DiGRA 2009)*. Digital Games Research Conference, Finland, 9.

- [86] Blizzard North. 2000. *Diablo II*. Game [PC]. Blizzard Entertainment..
- [87] Aisling Ann O'Kane, Yvonne Rogers, and Ann E. Blandford. 2014. Gaining empathy for non-routine mobile device use through autoethnography. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, Toronto Ontario Canada, 987–990. <https://doi.org/10.1145/2556288.2557179>
- [88] Rachel Ormston, Liz Spencer, Matt Barnard, and Dawn Snape. 2014. The Foundations of Qualitative Research. In *Qualitative Research Practice: A Guide for Social Science Students and Researchers*, Jane Ritchie, Jane Lewis, Carol McNaughton Nicholls, and Rachel Ormston (Eds.). SAGE Publications, Thousand Oaks, CA, USA, 1–25.
- [89] Matthew Pelowski. 2015. Tears and transformation: feeling like crying as an indicator of insightful or "aesthetic" experience with art. *Frontiers in Psychology* 6, July (2015), 1–23. <https://doi.org/10.3389/fpsyg.2015.01006>
- [90] Matthew Pelowski and Fuminori Akiba. 2011. A model of art perception, evaluation and emotion in transformative aesthetic experience. *New Ideas in Psychology* 29, 2 (2011), 80–97. <https://doi.org/10.1016/j.newideapsych.2010.04.001> Publisher: Elsevier Ltd.
- [91] Matthew Pelowski, Patrick S. Markey, Michael Forster, Gernot Gerger, and Helmut Leder. 2017. Move me, astonish me... delight my eyes and brain: The Vienna Integrated Model of top-down and bottom-up processes in Art Perception (VIMAP) and corresponding affective, evaluative, and neurophysiological correlates. *Physics of Life Reviews* 21 (2017), 80–125. <https://doi.org/10.1016/j.phrv.2017.02.003> Publisher: Elsevier B.V..
- [92] Andrew M. Phelps and Doris C. Rusch. 2020. Navigating Existential, Transformative Game Design. In *DiGRA'20 Proceedings of the 2020 DiGRA International Conference: Play Everywhere*. Digital Games Research Conference, Finland, 1–4. http://www.digra.org/wp-content/uploads/digital-library/DiGRA_2020_paper_21.pdf
- [93] Sebastiaan Pijnappel and Florian Mueller. 2013. 4 Design Themes for Skateboarding. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, Paris France, 1271–1274. <https://doi.org/10.1145/2470654.2466165>
- [94] Jayne Pitard. 2017. A Journey to the Centre of Self: Positioning the Researcher in Autoethnography. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 18, 3 (2017), 1–20. <https://doi.org/10.17169/fqs-18.3.2764>
- [95] Kevin J. Pugh. 2011. Transformative experience: An integrative construct in the spirit of Deweyan Pragmatism. *Educational Psychologist* 46, 2 (2011), 107–121. <https://doi.org/10.1080/00461520.2011.558817>
- [96] Kevin J. Pugh, Dylan Kriescher, Simon Cropp, and Maaly Younis. 2020. Philosophical Groundings for a Theory of Transformative Experience. *Educational Theory* 70, 5 (2020), 539–560. <https://doi.org/10.1111/edth.12443>
- [97] Juliet Pusateri, Judith Leng, Qian Wang, Xiangzhu Chen, and Jessica Hammer. 2020. Designing Games for Healthy Sleep. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*. ACM, Honolulu HI USA, 1–13. <https://doi.org/10.1145/3313831.3376413>
- [98] Heidi Rautalahti. 2019. "How video games changed my life": Life-Changing Testimonies and The Last of Us. *gamevironments* 10 (2019), 1–38. <http://www.gameenvironments.uni-bremen.de/>
- [99] Heidi Rautalahti. 2020. Between Immersion and Aesthetics: Video Game Players Discussing Enchantment. In *Proceedings of the 2020 DiGRA International Conference: Play Everywhere*. Digital Games Research Conference, Finland, 1–3.
- [100] Heidi Rautalahti. 2021. Non-religious Players Asking Big Questions: Video Game Worlds Affording Affinities of Meaningful Encounters. *The Journal of Religion and Popular Culture* 33, 2 (July 2021), 69–88. <https://doi.org/10.3138/jrpc.2020-0012>
- [101] Ute Ritterfeld, Michael Cody, and Peter Vorderer. 2009. *Serious games: Mechanisms and effects*. Routledge, New York. Publication Title: Serious games : mechanisms and effects.
- [102] Noelle Rodriguez and Alan Ryave. 2002. *Systematic Self-Observation*. Sage Publications, Thousand Oaks, CA, USA. <https://dx.doi.org/10.4135/9781412986076>
- [103] Doris C Rusch. 2020. Existential, Transformative Game Design. *JGSS* 2 (2020), 1–39.
- [104] Doris C. Rusch and Andrew M. Phelps. 2020. Existential Transformational Game Design: Harnessing the "Psychomagic" of Symbolic Enactment. *Frontiers in Psychology* 11, November (2020), 16. <https://doi.org/10.3389/fpsyg.2020.571522>
- [105] Richard M. Ryan and Edward L. Deci. 2000. Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist* 55, 1 (2000), 68–78. <https://doi.org/10.1037/10003-066X.55.1.68>
- [106] Richard M. Ryan, C. Scott Rigby, and Andrew Przybylski. 2006. The motivational pull of video games: A self-determination theory approach. *Motivation and Emotion* 30, 4 (2006), 347–363. <https://doi.org/10.1007/s11031-006-9051-8>
- [107] Santa Monica Studio. 2018. *God of War*. Game [PS4]. Sony Interactive Entertainment, San Mateo, California, US. Last played September 2021.
- [108] Ines Schindler, Georg Hosoya, Winfried Menninghaus, Ursula Beermann, Valentin Wagner, Michael Eid, and Klaus R. Scherer. 2017. Measuring aesthetic emotions: A review of the literature and a new assessment tool. *PLOS ONE* 12, 6 (June 2017), e0178899. <https://doi.org/10.1371/journal.pone.0178899>
- [109] Donald A. Schön. 1991. *The Reflective Practitioner: How Professionals Think in Action* (repr. ed.). Arena, Aldershot.
- [110] Phoebe Sengers. 2011. What I Learned on Change Islands: Reflections on IT and Pace of Life. *Interactions* 18, 2 (March 2011), 40–48. <https://doi.org/10.1145/1925820.1925830> Place: New York, NY, USA Publisher: Association for Computing Machinery.
- [111] M. Sicart. 2011. *The Ethics of Computer Games*. MIT Press, Cambridge, Massachusetts, USA. <https://books.google.fi/books?id=bO6LK2wYXNMC>
- [112] Paul J. Silvia and Ann G. Phillips. 2011. Evaluating self-reflection and insight as self-conscious traits. *Personality and Individual Differences* 50, 2 (Jan. 2011), 234–237. <https://doi.org/10.1016/j.paid.2010.09.035>
- [113] Katta Spiel. 2021. "Why are they all obsessed with Gender?" – (Non)binary Navigations through Technological Infrastructures. In *Proceedings of the 2021 ACM Designing Interactive Systems Conference (Virtual Event, USA) (DIS '21)*. Association for Computing Machinery, New York, NY, USA, 478–494. <https://doi.org/10.1145/3461778.3462033>
- [114] Anselm L. Strauss and Juliet M. Corbin. 1998. *Basics of qualitative research: techniques and procedures for developing grounded theory* (2nd ed ed.). Sage Publications, Thousand Oaks.
- [115] Bethesda Game Studios. 2006. *The Elder Scrolls IV: Oblivion*. Game [PC]. Bethesda Softworks 2K..
- [116] Karen Tanenbaum and Theresa Jean Tanenbaum. 2009. Commitment to Meaning: A Reframing of Agency in Games Commitment to Meaning: A Reframing of Agency in Games. In *Digital Arts and Culture 2009*. UC Irvine: Digital Arts and Culture 2009, Irvine, CA, USA, 1–9.
- [117] Team Salvato. 2017. *Doki Doki Literature Club!* Game [PC]. Team Salvato. Last played September 2021.
- [118] Sarah Turner, Jason R.C. Nurse, and Shujun Li. 2022. "It was hard to find the words": Using an Autoethnographic Diary Study to Understand the Difficulties of Smart Home Cyber Security Practices. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts*. ACM, New Orleans LA USA, 1–8. <https://doi.org/10.1145/3491101.3503577>
- [119] Jan B. Vornhagen, Dan Bennett, Dooley Murphy, and Elisa D. Mekler. 2023. "I'm the leader and I'm going to save the world": Characterizing Empowering and Disempowering Game Experiences. *Proceedings of the ACM on Human-Computer Interaction* 7, CHI PLAY (Sept. 2023), 1330–1360. <https://doi.org/10.1145/3611071>
- [120] Matthew Alexander Whitby, Sebastian Deterding, and Ioanna Iacovides. 2019. "One of the baddies all along": Moments that Challenge a Player's Perspective. In *Proceedings of the Annual Symposium on Computer-Human Interaction in Play (<conf-loc>, <city>Barcelona</city>, <country>Spain</country>, </conf-loc>)* (CHI PLAY '19). Association for Computing Machinery, New York, NY, USA, 339–350. <https://doi.org/10.1145/3311350.3347192>
- [121] Robert W White. 1959. Motivation reconsidered: The concept of competence. *Psychological Review* 66, 5 (1959), 297–333. <https://doi.org/10.1037/h0040934>
- [122] Kaiton Williams. 2015. An Anxious Alliance. *Aarhus Series on Human Centered Computing* 1, 1 (Oct. 2015), 11. <https://doi.org/10.7146/aahec.v1i1.21146>
- [123] Michael Williams and Tami Moser. 2019. The art of coding and thematic exploration in qualitative research. *International Management Review* 15, 1 (2019), 45–55.
- [124] David Bryce Yaden, Jonathan Haidt, Ralph W. Hood, David R. Vago, and Andrew B. Newberg. 2017. The varieties of self-transcendent experience. *Review of General Psychology* 21, 2 (2017), 143–160. <https://doi.org/10.1037/gpr0000102>