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Uncovering Individual and Collective Ambivalences in Digital Gaming: The Triggering Role of Game Design Paradoxes

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UNCOVERING INDIVIDUAL AND COLLECTIVE AMBIVALENCES IN DIGITAL GAMING: THE TRIGGERING ROLE OF GAME DESIGN PARADOXES

Research full-length paper

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Abstract

In this paper, we investigate ambivalences—simultaneous positive and negative evaluations of an object—triggered by paradoxes—contradictory yet interrelated elements that persist over time and appear logical in isolation but irrational and inconsistent when juxtaposed—in digital gaming and game de-sign. By analyzing qualitative data from 22 semi-structured interviews, 30 social media posts, and over 5,000 comments in these posts, we identify six core digital gaming ambivalences manifesting through individual (obligation/volition, distress induction/distress reduction, experiencing distress/eustress, and overplaying/underplaying) and collective (exclusion/inclusion and hostility/harmony) dimensions. We explain how the ambivalences are triggered by game design paradoxes, namely constant change versus status quo, shallow gameplay loop/monetization versus sustained player satisfaction, and catering to hardcore gamers versus casual gamers. We present a framework that explains the interrelatedness of the game design paradoxes and their role in triggering the digital gaming ambivalences. We provide insights for designing games and gamified information technologies to balance user well-being and benefits, emphasizing the importance of considering the paradoxical aspects of game design.

Keywords: Ambivalence, Paradox, Digital Game, Game Design.

1 Introduction

Ambivalence, defined as "*the simultaneous existence of positive and negative evaluations of an attitude object*" (Conner and Sparks, 2002, p. 39), has been a subject of discussion within information technology (IT) use for decades. As early as the 1990s, it was claimed that while the Internet was designed to foster social interaction, it could simultaneously diminish it (Kraut et al., 1998). Similar ambivalence has been found to affect the use of newer IT, such as social media (Nguyen et al., 2022). While ambivalences can emerge for several reasons, paradoxes have been discussed as potential triggers for them (Ashforth et al., 2014). Here, paradox is defined as "*contradictory yet interrelated elements (dualities) that exist simultaneously and persist over time; such elements seem logical when considered in isolation, but irrational, inconsistent, and absurd when juxtaposed*" (Smith and Lewis, 2011, p. 387). A key distinction between ambivalences and paradoxes is that paradoxes could be seen as reflecting external conditions, whereas ambivalences are individuals' or collectives' internal emotional or cognitive conflicts (Ashforth et al., 2014). Although both ambivalences and paradoxes have been studied particularly in organizational contexts (e.g., Ashforth et al., 2014; Schad et al., 2016) and in areas like personal social media use (e.g., Qahri-Saremi and Turel, 2020), numerous issues remain to be investigated.

For instance, the emergence of ambivalences triggered by paradoxes has yet to be studied alongside digital gaming. The omission of studying both concepts and their associations in digital gaming is significant because *(1)* while neither of the concepts inherently reflects problems, extant research has shown that both ambivalences (Van Harreveld et al., 2009) and paradoxes (Lewis, 2000) can contribute to detrimental consequences; *(2)* gaming reflects multifaceted outcomes, both positive and negative, such as distress alleviation (Barr and Copeland-Stewart, 2022) and distress increase (Porter and Goolkasian, 2019), underlining the importance of investigating such dynamics and their emergence; and *(3)* billions of people globally engage in digital gaming (Clement, 2024a), and the value of the digital game market is in the hundreds of billions (Clement, 2024b), highlighting the massive popularity and economic significance of this type of IT.

It has been shown that individuals might attempt to avoid ambivalence due to its representation of inconsistencies (Schneider and Schwarz, 2017). Thus, it is crucial to understand game design that could lead to ambivalent outcomes, as that could harm both the players (e.g., detriments to well-being) and game companies (e.g., reduced player retention). To fully understand this complexity, we frame digital games as artifacts that emphasize the dynamic interactions among designers, users, and IT (Orlikowski and Iacono, 2001). This approach aligns with the core focus of the information systems (IS) discipline: the social and the technical dimensions (Sarker et al., 2019). The technical dimension in the study is reflected in the investigation of various aspects of game development, while the social dimension is reflected in how players, alone and as collectives, engage with the games. This dual perspective helps illustrate the intricate relationship between individual players, social dynamics, and game design.

Despite the recognized ambivalences of IT use, their possible detrimental outcomes, and the potential of paradoxes acting as triggers for ambivalences, research has not investigated how ambivalences emerge due to the paradoxes of (game) design. To address this, we answer the following research questions: *What types of ambivalences and paradoxes are present in digital gaming and game design? How are the digital gaming ambivalences and the game design paradoxes associated with each other?*

Our research contributions are threefold. *First*, we extend research on ambivalence triggers (Ashforth et al., 2014) by explaining how digital game design paradoxes can trigger individual and collective ambivalences. *Second*, while research shows ambivalences often result in harm (Van Harreveld et al., 2009), they can also manifest positively, playing a constructive role in complex activities like digital gaming. *Third*, we contribute to research on informal norms in IT use by highlighting how paradox-triggered ambivalences affect behavior on a collective level in digital gaming (Chen et al., 2022).

2 Theoretical Foundation and Related Work

2.1 Ambivalences

While ambivalence has been defined and discussed in various ways and from various perspectives in the past, the common factor is that ambivalence refers to "*the simultaneous existence of positive and negative evaluations of an attitude object*" (Conner and Sparks, 2002, p. 39). For instance, ambivalence can include simultaneous positive and negative cognitions or emotions towards a person, goal, task, or technology (Ashforth et al., 2014). As an example, time can be viewed ambivalently, reflecting conflicting perceptions of how much time has passed and how much is left (Fisher et al., 2024). This resonates with the core aspects of gaming, as the activity can be so engaging that players' perception of time becomes blurred. Overall, ambivalence is characterized by conflicting emotions and cognitions, making it a complex and often uncomfortable state (Rothman et al., 2017; Van Harreveld et al., 2009). Ambivalence, while not directly reflecting individuals' behavior, can manifest through specific actions or trigger certain types of behavior.

Following the definition, we focus on how ambivalences reflect players' cognitions and emotions, manifesting through individual and collective dimensions (Ashforth et al., 2014; Conner and Sparks,

2002). While ambivalence could be triggered by many different factors, various paradoxes have been highlighted as eliciting ambivalence (Ashforth et al., 2014). For instance, in organizations, the paradoxical nature of IT-mediated real-time connectivity (i.e., IT facilitating rapid communication yet diminishing autonomy due to constant pressure for immediate responses) can trigger emotional ambivalence, manifesting as both anxiety and pride (Sui et al., 2024). Furthermore, ambivalences can affect users' behavior regarding whether to use an IT or not, and it is influenced by social norms (Chen et al., 2022). This refers to others' opinions and behavior affecting how or if one uses IT (Maity et al., 2019).

Many different types of IT, such as social media (Turel and Qahri-Saremi, 2022) and digital games (Snodgrass et al., 2016), have been studied alongside ambivalence. For instance, research has shown that users can simultaneously engage in positive interactions and unfavorable social comparisons in social media use (Krasnova et al., 2015). Still, the outcomes of ambivalence in IT use are poorly understood (Qahri-Saremi and Turel, 2020). We chose to investigate ambivalence in digital gaming due to the inherent conflicts reported in the literature, such as the tension between experiencing satisfaction and frustration in gaming (Kosa and Uysal, 2022). Moreover, gaming can elicit positive experiences through negative emotions (Triberti, 2016), underlining the complexities surrounding gaming outcomes. As such, a relevant concept to discuss further is paradox.

2.2 Paradoxes

The term paradox has been discussed diversely across historical contexts, from everyday life to practical applications and scholarly discourse. In simplistic terms, a paradox is "*a situation, act, or behavior that seems to have contradictory or inconsistent qualities*" (Jarvenpaa and Lang, 2005, p. 7). For instance, a common paradox in everyday life is the paradox of choice, which posits that more options can make a choice feel less fulfilling (Schwartz, 2004). A more comprehensive definition states that paradoxes are "*contradictory yet interrelated elements (dualities) that exist simultaneously and persist over time; such elements seem logical when considered in isolation, but irrational, inconsistent, and absurd when juxtaposed*" (Smith and Lewis, 2011, p. 387). These elements can include conflicting demands, opposing perspectives, or seemingly illogical patterns within organizational and technological settings (Lewis and Smith, 2014). Thus, paradoxes reflect complex, dynamic situations that evolve through the interrelationships between various actors and events.

In organizational research, the concept of paradox has been used to study various tensions (Lewis, 2000). Paradoxes in organizational settings reflect central activities and aspects: learning, belonging, organizing, and performing (Smith and Lewis, 2011). For instance, digital transformation can create paradoxical tensions such as efficiency versus innovation, control versus flexibility, and stability versus change (Farjoun, 2010; Smith and Lewis, 2011). Furthermore, the paradoxical nature of IT use, which includes aspects such as empowerment versus enslavement, refers to how mobile technology enables numerous possibilities while creating new mandates, such as constant availability (Jarvenpaa and Lang, 2005). It is important to note that paradoxes can be managed through various design choices. For instance, implementing message filtering functions and status availability indicators can help address issues related to constant availability (Jarvenpaa and Lang, 2005). Additionally, it is crucial to recognize that paradoxes are influenced by various social and cultural conditions, such as power distribution, which play a role in how they can be managed (Hargrave et al., 2017).

Moreover, a well-documented paradox in IT use is the privacy paradox, which highlights the discrepancy between individuals' privacy concerns and their actual behavior (Alashoor et al., 2023). This paradox illustrates users' conflicting desires for personal data privacy versus the benefits of personalized services, leading to ambivalent attitudes toward data-sharing policies (Gerber et al., 2017). Also, research has highlighted the paradoxical nature of IT use in relation to stress (Cheikh-Ammar, 2020; Cheng et al., 2023). This paradox emerges as IT can reduce stress while increasing it, presenting a "*double-edged sword.*" Furthermore, some studies have explored paradoxes in digital gaming. For example, digital game violence has been discussed as paradoxical, where players enjoy in-game violence

but do not condone it in real life (Daneels et al., 2018). Tying the concept of paradox to a specific gaming scenario, it has been shown that kill cams (i.e., replays of how a player dies in a game) can increase players' enthusiasm to play despite losing as they analyze their deaths, illustrating the paradox of failure (Obreja, 2023). This underlines the importance of game challenges, which can emerge from the fear or anticipation of failure (Juul, 2013). Thus, digital gaming elicits complex experiences and outcomes in players, making both the ambivalence and paradox suitable lenses for investigating our research problems.

2.3 Digital games as a research context in IS

Games are generally characterized as systems where players engage in an artificial conflict governed by rules, leading to quantifiable outcomes (Salen and Zimmerman, 2004). Integrating multiple approaches for framing digital games, Ralph and Monu (2015) discuss digital games as consisting of players, experiences, and artifacts, which resonates with how IT has been viewed in IS research. Thus, games can be viewed as artifacts that emphasize the dynamic interactions among designers, users, and the IT itself (Orlikowski and Iacono, 2001). Furthermore, it is important to note that the influence of digital games extends beyond entertainment, as evidenced by the integration of game-like elements into non-gaming activities, known as gamification (Riar et al., 2022), underlining the widespread diffusion of game-like aspects in modern life. While game research is a vast field, the concepts central to IS have significant contributions to offer for this IT use context.

In the work that has been done in IS, different motivational and monetary aspects have been focal in studying digital gaming (e.g., Liu et al., 2013; Meng et al., 2021). For instance, while digital game definitions do not necessitate competition, it is a central aspect of many games and has been shown to enhance player motivation (Sepehr and Head, 2018). Furthermore, IS research has investigated loot boxes (i.e., randomized in-game rewards purchasable with real money), uncovering their potentially detrimental effects on players (McCaffrey, 2023). However, the monetary aspects of loot boxes might be crucial for the game's economic viability (Carvalho, 2021). This is conflicting as the economic viability is also dependent on gamer retention (Strååt and Verhagen, 2018), and loot boxes could negatively affect this: an example of a paradox associated with digital game design. Still, existing studies have not delineated various individual and collective digital gaming ambivalences that could be triggered by game design paradoxes despite this interaction potentially contributing to adverse outcomes for different stakeholders. Our approach highlights the importance of studying digital games as prevalent forms of IT, bridging the gap in existing research by linking digital gaming to theoretical insights within the IS field using the concepts of ambivalence and paradox as lenses.

3 Research Methods

3.1 Data collection

We employed qualitative research methods recognized for their robustness in capturing emergent IS phenomena (Monteiro et al., 2022). The generation of rich data, a noted strength of qualitative approaches (Brekhus et al., 2005), influenced our choice of research method. We collected qualitative data through semi-structured interviews (primary data collection) and from social media discussions (secondary data collection). By collecting interview data, we were able to elicit deep stories of digital gamers' experiences. By complementing this with additional qualitative data from social media discussions, we gained broader support for our findings. Overall, social media data helped us gather data that was not as heavily influenced by the researcher as is the case with interviews (Chenail, 2011). Thus, the different data collection methods mitigated the weaknesses of each individual method and improved validity and credibility through triangulation. Here, triangulation was achieved by collecting data from different individuals and locations (Miles and Huberman, 1994).

As our primary data collection method, we conducted interviews with 22 gamers (19 in 2023 and three in 2024) to explore their digital gaming experiences. We detailed both the positive and negative aspects of their activities, investigating the factors within the games that contributed to these experiences. The interview framework included questions such as: "*What is your main reason for gaming?*", "*How do you feel during/after gaming sessions*?", and "*What aspects of games (features/elements) have elicited positive/negative feelings?*" This approach enabled us to investigate the ambivalences and paradoxes in the participants' stories, as well as understand their root causes. General guidelines for conducting interviews were followed, including employing mirroring (i.e., using participants' words to ask follow-up questions) and using appropriate jargon (Myers and Newman, 2007).

We did not limit interviewees based on their playing time or the specific games they played, enabling us to capture a wide range of potential experiences within the gaming context. Employing purposeful sampling (Patton, 2002), we sought participants who were not only avid gamers but had also experienced something negative while playing, aligning with our research objectives. Participants were recruited through email lists, gaming communities, and the personal networks of the authors. The demographic consisted of 13 males and nine females, averaging 27.0 years of age, mirroring the general gender distribution within the gaming community. This age group was targeted as it comprises the most active segment of gamers. All interviewees were from Finland. Most participants played digital games daily, primarily on personal computers, often in online multiplayer settings. Commonly played online multiplayer games included different multiplayer online battle arena (MOBA) games and first-person shooter (FPS) games. Single-player games spanned genres such as adventure, action, and puzzles, among others. The participants varied in their competitive approach to gaming; while some viewed competition as a crucial motivator, others did not prioritize it.

As a secondary data collection method, we gathered data from social media discussions to seek broader support for our findings. The interviews guided our social media data collection and helped us choose keywords for finding relevant discussions. Between 2023 and 2024, we collected data from a popular social media platform, which is not specified to protect user anonymity. Although we deviated from the informed consent process here, we obtained permission from the university's ethics committee to do so. Also, we implemented strategies to ensure user anonymity, including avoiding the collection of usernames and extensively paraphrasing quotes presented as evidence. When managed correctly, collecting data from social media can be ethical and beneficial (Proferes et al., 2021).

We focused on a discussion group for a popular MOBA game frequently mentioned in our interviews, chosen for its evolving nature and active competitive scene. Initially, we used the platform's search function with the keywords "*negative*," "*positive*," "*stress*," and "*fun*" to find relevant posts. The search function displayed the 250 most relevant posts based on these keywords, which we analyzed preliminarily. However, many results were outdated (some over ten years old), so we manually searched for posts from the years 2022-2024 using a third-party search application. Based on the preliminary analysis, we refined our search terms to include "*frustrating*" and "*enjoy*." We sorted the search results from 2022-2024 by the number of comments to identify popular discussions. This was crucial, as we wanted to analyze comments to observe discussions between users in addition to the original posts. We selected the ten most-commented posts from each year that reflected ambivalences or paradoxes related to gameplay or game design. From these posts, we chose the five most popular comments and their subcomments for deeper analysis. Given that a single comment could have hundreds of subcomments, this resulted in over 5,000 comments for analysis. In total, the social media data amounted to around 250,000 words.

3.2 Data analysis

We analyzed our data using the concepts of ambivalence and paradox as lenses for interpreting the participants' words. Following the guidelines of Lune and Berg (2017), we undertook the following steps: *(1)* transcribing the interviews; *(2)* labeling relevant words, sentences, and paragraphs (i.e., cod-

ing); *(3)* grouping similar codes (i.e., categorizing); *(4)* examining the data underlying the codes and categories in detail to find patterns; and *(5)* analyzing and discussing the identified patterns in relation to existing literature. The analysis was iterative, allowing movement back and forth between the steps. During the coding process, we employed simultaneous coding (i.e., one text segment receiving multiple codes) and in-vivo coding (i.e., codes named after the participants' words) (Saldaña, 2013). This helped manage the complex content of the participants' stories. Furthermore, simultaneous coding can help identify patterns and processes in the data (Saldaña, 2013).

We began by analyzing our primary data: the interviews. First, we sought paradoxes in the data. Using NVivo 14 software, we systematically coded all instances of paradoxes. For example, codes like "*leisure time feels like work*" and "*designing for casuals versus hardcore players*" were created. These codes were then grouped into three categories: individual paradoxes, collective paradoxes, and game design paradoxes. However, after reviewing the codes, the categories, and the underlying data, we determined that some coded paradoxes better reflected ambivalences, as ambivalences are internal emotions and cognitions, whereas paradoxes reflect external conditions. We thoroughly reviewed all the coded paradoxes and regrouped them as ambivalences if needed, exemplifying the iterative nature of our analysis. For instance, "*leisure time feels like work*" was renamed "*obligation/volition*" to better reflect the underlying data and was categorized as ambivalence.

Ultimately, we had two main ambivalence categories (individual and collective) and one paradox category (game design paradoxes), comprising six and three sub-categories, respectively. By scrutinizing the data underlying the sub-categories of game design paradoxes in detail, we observed how they were interconnected. Furthermore, as studies have shown that paradoxes can trigger ambivalence (Ashforth et al., 2014), we next sought patterns between them in our data. This involved re-reading the data to understand the nuances reflected in the categories and codes (Lune and Berg, 2017). For example, we found patterns of how the paradox of designing for casual versus hardcore players could elicit the ambivalence of experiencing distress/eustress. Both too easy and too difficult a challenge could create such experiences, highlighting the complexity of balancing the challenge in digital games.

Subsequently, we analyzed our secondary data: the social media discussions. We sought support for the types of ambivalences and paradoxes identified in the interviews while remaining open to discovering new types and connections. We aimed to find support for the patterns and processes we had identified (i.e., interconnected game design paradoxes triggering ambivalences). The social media data especially highlighted ambivalences of "*hostility/harmony*" and "*overplaying/underplaying*." The design paradox of "*shallow gameplay loop/monetization versus sustained player satisfaction*" was particularly significant in triggering these ambivalences. Finally, by reflecting and comparing our findings with existing literature, we deepened our investigation and fortified our contributions to the existing body of knowledge (Dey, 2003). Quotes from both the interviews and social media data are presented in the results. Interview quotes are marked with **(I)**, and social media quotes with **(SM)**. The quotes from the social media data have been paraphrased to prevent the possibility of finding the original discussions, thus protecting users' anonymity. While all collected social media data is freely and unrestrictedly available online, we exercised caution in presenting the results and evidence based on them.

4 Results

In the results, we outline six core ambivalences of digital gaming, categorized into two main types: individual and collective. Furthermore, we discuss three types of digital game design paradoxes and explain how these interconnected paradoxes can act as triggers for the ambivalences. Table 1 below presents the identified ambivalences. Table 2 summarizes the identified types of game design paradoxes.

Individual ambivalences	**Definition**
Obligation/volition	This ambivalence occurs when players experience an obligation to play even when the activity is supposedly voluntary and enjoyable.
Distress induction/ distress reduction	This ambivalence highlights how gaming can simultaneously induce and reduce distress in players.
Experiencing distress/eustress	This ambivalence reflects how gaming can simultaneously elicit both negative stress (distress) and positive stress (eustress) in players.
Overplaying/ underplaying	This ambivalence addresses the conflict between the perception of one's gaming time, overplaying or underplaying, which affects whether they are pulled towards or away from the game.
Collective ambivalences	**Definition**
Exclusion/inclusion	This ambivalence arises when a game offers varied ways of playing, but the community simultaneously exhibits exclusion and inclusion for different ways of playing, often abiding by enforcing unwritten rules leading to gatekeeping.
Hostility/harmony	This ambivalence occurs when, in multiplayer games requiring teamwork, the players approach situations with hostility despite harmony being essential for success.

Table 1. Core ambivalences of playing digital games.

Paradox	**Definition**
Constant change versus *status quo*	This paradox arises especially in servitized online games that frequently update, where constant changes can be detrimental if players prefer the stability of previous versions, despite the changes also being needed for games' success.
Shallow gameplay loop/monetization versus *sustained player satisfaction*	This paradox involves the balance between designing a game with the sole goal of increasing revenue and player engagement, which carries the risk of decreasing player satisfaction and can eventually lead to reduced player retention and revenue loss.
Catering to hardcore gamers versus *casual gamers*	This paradox highlights the challenge of designing games based on feedback from a vocal minority, such as professional players and content creators, which may not reflect the preferences of the more extensive, quieter player base.

Table 2. Central paradoxes of digital game design.

4.1 Individual ambivalences of digital gaming

Obligation/volition. A key aspect of playing digital games in one's leisure time is that it is a voluntary activity meant to bring benefits, such as enjoyment. However, our data showed that gaming can simultaneously feel like an obligation. This is especially true when games have a constant gameplay loop that requires players to perform specific activities for progress. For instance, if players feel overwhelmed by too many tasks, gaming can feel like an obligation. When gaming is driven by such feelings, it can be problematic:

"*I haven't played much during the event, say it's a two-week event and I've only played a little, then it might be like on the last two days, for example, 'Okay, I need to play this gacha for five hours today and six hours tomorrow, if I want to 100% this event'. [...] If it is happening only once ever, then it's kind of like, I have to play it, or I'll never play this.*" **(I)**

Distress induction/distress reduction. Although distress relief is a common goal of playing digital games, the actual experiences can simultaneously reflect increased distress. For instance, despite people often playing games as a fun leisure activity, gaming can be a source of distress due to the amount of content they are engaging with. This means that stress emerges from feeling overloaded:

"*It's quite a relaxing activity for me, mainly because it lets me escape from all the work worries, stress, and all that, so it's more of an [chuckle] escape from reality, let's put it that way. [...] And then many games these days have a battle pass or something like that, and there's this constant need to grind. [...] It's really exhausting.*" **(I)**

Experiencing distress/eustress. In addition to inducing and reducing distress, gaming can reflect ambivalent outcomes due to the dynamics between distress and eustress. Gaming as a source of distress can manifest as frustration, anxiety, and exhaustion. Such experiences can arise, for instance, due to toxic social interactions in games or the pressure to progress. Conversely, overcoming challenges and experiencing accomplishment and mastery are integral to many gaming experiences, reflecting eustress. This can also be a dynamic experience, where the type of stress experienced, whether negative or positive, might be ambiguous. Such ambiguity is often present in competitive gaming, as one participant explained:

"*I'm the kind of player who easily gets nervous, so if I find myself in, for example, in a situation where it's one against three. I have this watch on my wrist that measures my heart rate, so it might have, I mean, my heart rate has actually been 150 in such a situation. [...] It's an unpleasant feeling when the heart rate rises and all that, but it's also the release of adrenaline that comes from it, so it's the situation that I may partly seek from games.*" **(I)**

Overplaying/underplaying. While both overplaying and underplaying could reflect negativity, we view them as ambivalent because overplaying could drive the player away from the game, while underplaying pulls the player towards the game. In both datasets, we observed instances of players simultaneously feeling like they were playing too much and too little. Many reported extensive playing hours but simultaneously felt deprived of sufficient gaming time. Additionally, many highlighted how playing for hours on end is often counterproductive and does not yield the sought-after benefits, thus necessitating extended breaks. As discussed on social media:

"*Just because you're unaware of it doesn't mean it's not affecting you. Stress from gaming leads to worse performance and can impact your real life. Taking an extended break after prolonged playing sessions can be very beneficial.*" **(SM)**

4.2 Collective ambivalences of digital gaming

Exclusion/inclusion. While hard rules are central to how digital games are shaped (i.e., the rules coded in the game artifact), players often create informal rules of their own. These can include etiquette for player interaction, legitimate strategies, or gameplay conventions. Such informal rules can foster a sense of belonging and community. However, they can also become restrictive, policing how individuals play the game and sometimes excluding those who do not conform to community standards. The game meta (i.e., the optimal way of playing a game) was especially discussed here. Although most were perplexed by why the community is so concerned with how others play the game, some found understanding in games where a competitive edge can be gained or lost by making certain choices. Especially from this perspective, it was highlighted that following the game meta might be necessary to succeed:

"*For instance, if a teammate picks, let's say [a character]. […] Then immediately, it's like, 'Oh no, please don't pick that. We're going to lose [laughter], we are going to lose'.*" (I)

However, the same participant described how they were not a "meta player," further representing conflicting thinking. Managing the freedom to choose while also being bound by unwritten rules often associated with gaining a competitive edge can be tricky:

"*I'm not, you know, I'm not a meta player at all. I'm not interested in what's meta and what's not. Of course, you notice it there that many people are like, 'Yeah, you can't choose that character because it's not meta', but then I'm just like, whatever [laughter]. I don't care, I'll pick it anyway.*" (I)

Hostility/harmony. Such ambivalence emerges due to players engaging in counterproductive behavior, particularly in competitive settings. While cooperation is necessitated and worked towards in multiplayer settings, participants in our interviews discussed that many players simultaneously seek conflict within teams, which can diminish teamwork, result in the loss of games, and eventually worsen the gaming experience:

"*When I was younger, I might have yelled at the team, like what the hell, why is it going like this, and why aren't you doing anything, and damn it [insert expletive], I'm going home, or that now this is over. And a couple of friends actually said to me back then, 'Hey, it's not necessarily fun to play with you if you get worked up like that'.*" **(I)**

In both datasets, there was significant discussion on toxicity in digital gaming, which tends to stem from competitive aspects, also reflecting the paradox of for whom the games are designed. To address this, many suggested disabling or muting chat in the game. However, this approach is problematic because the games are cooperative, and turning off cooperative elements is counterintuitive:

"*Why choose to be destructive instead of being kind to others? Why not channel that energy into improving your gameplay? When someone isn't performing well, insulting or wishing harm because they're 'ruining your game' is disheartening. It doesn't benefit the game or its players. All you achieve is mental exhaustion, extreme stress, self-hatred, a probable loss, and the risk of chat restrictions, suspensions, or even a permanent ban.*" **(SM)**

4.3 The role of game design paradoxes in triggering ambivalences

As we sought to understand how ambivalences in digital gaming manifested in both individual and collective dimensions, we observed that these often emerged due to different, interconnected paradoxes of game design. Thus, the paradoxes act as triggers for the ambivalences. We define game design paradoxes as situations in which various aspects of game design are in constant conflict and tension, leading to outcomes that elicit ambivalent responses in players. These paradoxes can manifest in various aspects of game development, including gameplay mechanics, reward systems, and player interactions.

Paradox of constant change versus status quo. Although modern games are characterized by change, and their success may depend on such, these changes can also lead players to reduce their engagement with the game or even abandon it. Significant changes or deviations from a game's core mechanics can contribute to this. This may stem from a sense of loss over the original game experience, frustration with having to learn new systems, or simply a disconnect between player expectations and the game's new direction. This can elicit ambivalence of distress/eustress. As one interviewee discussed regarding a game-changing update in a MOBA game:

"*Nobody liked it [an update that significantly changed the game] [laughter]. [A role in the game] players got mad about it because they get to play less against [the opponent of a similar role], and when others come to interfere right at the start, it takes away their control of their environment right from the beginning of the game. […] So the gaming experience worsened from that your own experience is so dependent on other players right from the start, that your own actions don't have as much impact, but rather what others do.*" **(I)**

Although playing digital games is often purposefully challenging, players can be overwhelmed by complex game mechanics. This is especially prevalent in constantly updating games, which also means that the meta changes frequently. Staying up to date with the meta takes time and falling behind can lead to frustration. Additionally, learning the new optimal ways to play can contribute to feelings of overload. However, some found it a valuable part of the gaming experience that could also bring enjoyment. This also highlights the difficulties in catering to all player types, showcasing the interconnectedness of the game design paradoxes:

"*Who is the game being developed for? Is it the 2% who understand the game, or is it more important to just have changes within the gameplay experience and the meta just for the sake of change? […] [Casual players] might not understand [the changes], but they still get the refreshing experience due to the game updating.*" **(I)**

Shallow gameplay loop/monetization versus sustained player satisfaction. This paradox emerges from the gameplay design and monetization strategies implemented in games aiming to increase engagement and revenue without considering player satisfaction. This can negatively affect player retention and paradoxically decrease revenue. In both our datasets, monetization strategies such as loot boxes and other types of microtransactions were discussed in this context, especially if they provided progress for gameplay: a concept called "pay-to-win." Furthermore, the social media discussions highlighted that players' enjoyment does not seem to be a priority for game companies – revenue is everything:

"*There's no sense in those pay-to-win features [in a car game]. It's like, no one benefits from those except the devs, and I don't even know if they benefit in the long run when people get fed up with it. […] It's not necessarily the devs who decide what gets put in-to the game, but rather the 'suits' in the company's office who think about what will end up on the bottom line.*" **(I)**

"*It's crucial to be aware of these issues on your own, as the game company profits from players being stressed and making impulsive purchases. It's disappointing that a leading company places such a high priority on profit.*" **(SM)**

Interestingly, multiple interviewees discussed a popular MMORPG and how the gameplay loop had become unsatisfactory, mainly aimed at player retention. One interviewee explained how the game's player base decreased due to the design choices made. However, eventually, the changes were reversed, highlighting how managing these paradoxes is essential for the survival of the games:

"*And then there are all the time-gating parts and such, meaning practically there's a fear of missing out because it's weekly, and if you don't do it that week, you can't get it the next week, meaning you're literally behind in power due to game design […] Maybe at the time when you were doing it, you were in a sort of hamster wheel, like, 'okay, let's do this'. And then sometimes you stop to think, 'why am I spending my time on this? What sense does this make? Is this fun?' […] And at that point, it comes to, 'okay, our player base is leaving, we get less revenue. Well, we have either the option to continue this and lose players or then try the other model and listen to the players'.*" **(I)**

"*When you recognize that you're playing out of a sense of duty rather than enjoyment, it discourages you from continuing. This is what ruined playing [the MMORPG] for me.*" **(SM)**

Thus, rapid and repetitive rewards in digital gaming can be highly ambivalent. On one hand, they can initially bring a sense of enjoyment, motivating players to continue playing, as the anticipation and achievement of rewards provide positive reinforcement and a sense of progression. While this can initially drive player retention, over time, it may diminish player satisfaction as the novelty wears off and the effort required to obtain rewards becomes tiresome. This highlights how such a design paradox influences the ambivalence of obligation/volition. Furthermore, the obligation to continually achieve these rewards can transform a pleasurable activity into something burdensome, contributing to the paradox of overplaying/underplaying and the tension between intrinsic desire and extrinsic obligation to play.

Paradox of catering to hardcore gamers versus casual gamers. Hardcore gamers often seek challenges and complexity, desiring games that offer opportunities for mastery and competition. In contrast, casual players typically engage with games for leisure, relaxation, and social interaction, favoring experiences that are enjoyable and not overly demanding in terms of time or skill. Thus, designing games for different types of players can be difficult. In both datasets, it was discussed how games are often designed from the perspective of hardcore gamers, despite casual gamers comprising the majority of the player base. Especially professional players and content creators often become a vocal minor-

ity for whom the games are designed. Emphasizing these players in game development can potentially alienate the broader audience that forms the backbone of the gaming community. Therefore, developers need to understand that the majority of the gamer base consists of players who are playing casually:

"*So, the majority of players are casual players, and then there comes the problem, like, are we designing this for professionals, or are we designing it for the larger percentage, which is the casual players? […] Of course, now that the new season has come out, it seems, at least from what I've heard, it has become apparent that the devs have kind of realized that we can't [laughs] design this game for professionals, because the larger number of players are casual gamers.*" **(I)**

"*It's baffling that some are okay with their gaming experience being compromised due to the game studio catering to professional players. I couldn't care less [insert expletive] about professional gaming.*" **(SM)**

Such a paradox could elicit ambivalent outcomes primarily associated with exclusion/inclusion and hostility/harmony. If the game is specifically designed from a competitive perspective, this can create an atmosphere where gamers seek optimal gameplay, leading to conflicts within teams, even in cooperative situations. Below, Figure 1 summarizes our findings and highlights the interconnectedness of the different types of paradoxes, in addition to showing how the game design paradoxes trigger ambivalences.

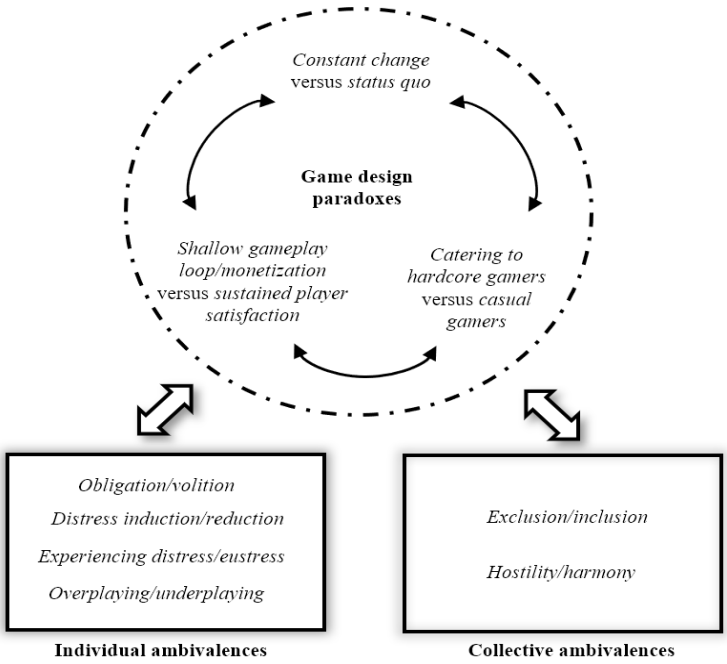

Figure 1. Game design paradoxes triggering individual and collective ambivalences.

5 Discussion

5.1 Research contributions

First, we contribute to existing research by identifying core digital gaming ambivalences and delineating central, interconnected game design paradoxes. Moreover, we explain how the design paradoxes can trigger both individual and collective ambivalences, extending the research on triggers of ambivalence (Ashforth et al., 2014). By identifying interrelated design paradoxes in digital gaming, we provide a framework that clarifies how these paradoxes evoke ambivalence. While existing research has

highlighted organizational triggers of ambivalence, such as continuity and change (collective level) and role conflict (individual level) (Ashforth et al., 2014), we specifically address these triggers from the perspective of game design paradoxes. By doing so, we show how ambivalences are triggered through paradoxes in IT that are constantly evolving with new features, new standards, and new ways of use (Orlikowski and Iacono, 2001). This is particularly relevant for IT characterized by change, as seen in all the game design paradoxes we discussed. In existing research, paradoxical tensions between stability and change have been extensively explored in organizational contexts but have received little attention in the context of voluntary and leisure IT use. This oversight is problematic, as we have shown that the tension in game design between constant change and maintaining the status quo can evoke ambivalence between obligation and volition in players, leading to significant issues such as diminished player well-being and reduced player retention. These insights provide new perspectives on understanding the paradoxes associated with stability and change (Farjoun, 2010). Specifically, they could offer guidance on balancing the need for consistent, reliable mechanics with the desire for novel, exciting updates, achieving a harmonious coexistence of both elements. Also, as design features can help manage paradoxes (Jarvenpaa and Lang, 2005), it is important to understand such dynamics in various IT use contexts, especially when the design features themselves might reflect paradoxes.

Second, while existing research often shows that ambivalences result in harm (Van Harreveld et al., 2009), this is not always the case. Ambivalences can manifest positively, enabling adaptation (Rothman et al., 2017). This perspective encourages a re-evaluation of traditional views on ambivalence, suggesting it may play a constructive role in complex leisure activities like digital gaming. The ambivalent nature of gaming can also make games more appealing, particularly in the dynamics between distress and eustress (Snodgrass et al., 2016). Our findings indicate that such ambivalence primarily arises from the game design paradox involving constant change versus the status quo. Games that do not evolve can become dull, but constant updates can provoke both distress and eustress reactions, such as feeling overloaded while also striving for mastery. Designers must create a stable core gameplay loop that offers a reliable structure while introducing enough variability and novelty to keep the experience engaging. This balance is crucial for maintaining long-term player interest and satisfaction. Understanding this balance between different game design choices, or managing the paradox, is essential for eliciting beneficial rather than detrimental ambivalent reactions. This could help address the economic challenges faced by gaming companies, often associated with player retention (Strååt and Verhagen, 2018). A common theme in our interviews was that digital games have deteriorated due to new monetization strategies (e.g., microtransactions) originating from mobile gaming. Associated with these are loot boxes, which have many negative issues from the player perspective (McCaffrey, 2023). However, removing them might prove detrimental from a monetary perspective (Carvalho, 2021). Striking the right balance between providing enough incentive to keep players engaged and avoiding player fatigue is essential. By examining these dynamics, we offer insights into creating more sustainable and enjoyable gaming experiences that maintain player well-being and satisfaction over time.

Third, we contribute to research regarding the informal norms in IT use (Chen et al., 2022). Research has shown that what others feel and say, and how they use IT, influences how users engage with IT (Maity et al., 2019). This highlights the collective and social dimensions of IT use. Resonating with this, we underline the role of collectives in ambivalent outcomes of digital gaming, triggered by design paradoxes. By doing so, we add to less-studied social dynamics of paradoxes (Hargrave et al., 2017). For instance, the paradox of control and freedom can affect organizational innovation (Smith and Lewis, 2011). We approached this from the perspective of how changes in digital games can emerge as ambivalences due to the simultaneous existence of exclusion and inclusion of different types of gaming behavior, highlighting norms and optimal ways of playing. Although some participants were highly annoyed with unwritten rules on how to play the game, they also had their own ideas of how a game should be played, reflecting ambivalence stemming from design paradoxes. The critical point is that the community has rules for the "right" and "wrong" way to play the game, despite players being completely free to choose how they wish to play. This emerged as central in our interviews, as partici-

pants discussed how such community-enforced rules did not align with what they wanted to experience. These findings enrich IS literature by illustrating how insights from digital game dynamics can inform broader practices, such as change management. Specifically, we explained how changes in IT use can be optimized and influenced by design factors and varying social conditions, such as norms.

5.2 Practical implications, limitations, and future research

Our results provide insights for organizations at large due to the use of gamification. Such organizations could include those oriented toward education, where gamified systems have been shown to be efficient for learning. With gamified systems, extrinsic and intrinsic aspects of motivation could elicit ambivalent emotions in users, for which understanding the various paradoxical design aspects could be helpful. Furthermore, game developers could implement design choices that highlight the positive aspects of ambivalences and paradoxes. Our findings could help gamers and game providers adopt a "paradox mindset" (Miron-Spektor et al., 2018) that harnesses paradoxes for positive outcomes rather than harm. This could involve explicitly acknowledging and transparently communicating paradoxical tensions with players. For instance, as we have stated, monetary aspects are instrumental in the gaming business, as they are in all businesses. However, players' satisfaction and well-being need to be prioritized, and gaming companies could transparently explain how they are managing such a paradox. Understanding how players perceive and value their time in games can guide the design of experiences that are fulfilling, ultimately enhancing player well-being and satisfaction.

As with all research, our study has some limitations. *First*, the core concepts of our study, ambivalence and paradox, have been defined in various ways over the years. While there is some consensus on these terms, there are varied perspectives. We managed this by being explicit and transparent with our definitions, especially tying our background to relevant research fields. *Second*, the idea of paradox as a meta-theory originates from organizational research, which required adaptation to the personal and voluntary context of IT use. *Third*, we combined data from two different types of sources, which could pose issues as the research subjects were not a homogeneous group due to the inclusion of social media data. *Fourth*, associated with social media data, due to anonymity reasons, we had to paraphrase user quotes presented as evidence, which can affect credibility. However, we were diligent in how the paraphrases were formed and gave great attention to ensuring that the paraphrases captured the same story told by the original quote by reading and re-reading the texts side by side.

For future research, a more detailed investigation of how specific game design paradoxes elicit specific ambivalent outcomes could be conducted. Furthermore, we encourage scholars to examine the role of individual characteristics of players in how these paradoxes and their triggering ambivalences are appraised. For instance, different types of players might handle ambivalence differently, with characteristics such as competitiveness potentially influencing their responses. Future research should continue to explore these concepts across diverse technologies and cultural contexts to build a more detailed and robust framework that can inform both theory and practice in IT design and use.

6 Conclusion

By investigating the triggers of ambivalence through design paradoxes, we shed light on the complex dynamics between game design, player behavior, and various gaming outcomes. Our findings show that paradoxes in game design can lead to ambivalences in players, affecting both their emotional experiences and eventual behavior. Moreover, our research highlights that ambivalences, often perceived as detrimental, can also have positive implications in digital gaming by contributing to a richer, more engaging gaming environment. Furthermore, by examining the collective impact of paradox-triggered ambivalences, we contribute to the broader discourse on informal norms in IT use. Overall, our study offers a framework for future research and practical applications in digital game design, emphasizing the intricate balance between competing elements to optimize player experiences and outcomes.

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