The Joy of Exploration: A Qualitative Study of Temporal Changes in Player Experiences

Tushya Sachan
Department of Psychology, University of Delhi
Faculty of Arts, North Campus
Delhi - 110007, India
tushya@psychology.du.ac.in

Dinesh Chhabra
Department of Psychology, University of Delhi
Faculty of Arts, North Campus
Delhi - 110007, India
dchhabra@psychology.du.ac.in

ABSTRACT

While literature has indicated temporal shifts in gameplay engagement, few studies examine how exploration pleasures evolve in open-world games, particularly the impact of familiarity on exploring and the role of nostalgia for first discoveries. This qualitative study explored changes in exploration joy over time, familiarity's transformative effects, and strategies to recapture first-discovery emotions, including "exploration nostalgia" wherein players seek to relive the emotional intensity of their initial discoveries. Thematic analysis of semi-structured interviews with 16 experienced players (Mean age=26.8 years; mean hours in game=182) of open-world games (*Elden Ring, The Witcher 3: Wild Hunt, Valheim*, among others) revealed six themes: Initial Novelty Thrill, Sadness of Losing Novelty, Factors Affecting Exploration, Factors reducing Joy of Exploration, Nostalgia Triggers, and Strategies for Recapturing Exploration Nostalgia. Findings deepen understanding of gameplay behaviour from exploration excitement to nostalgia, advancing game research by pioneering insights into players deriving enjoyment from evolving exploration behaviours.

Keywords

open-world, game exploration, exploration nostalgia, immersion, game replays

INTRODUCTION

Exploration remains one of the most compelling and enduring sources of pleasure in video game play. Open-world games have been notable in redefining how players engage with digital environments by offering vast, nonlinear spaces where discovery and autonomy serve as central motivators instead of fixed objectives; this freedom transforms gameplay into a deeply personal experience; several studies have shown deeper player immersion in the world and its story (Jang 2024; Shetty et al. 2023; Warde-Brown 2021). Exploration serves as a powerful mechanism for attracting and

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sustaining player engagement by tapping into intrinsic motivations such as curiosity, novelty, and discovery (Gómez Maureira et al. 2019; Kosa and Uysal 2024; Tang and Kirman 2025). However, the pleasure from exploration is not static; it evolves as players spend more time within the same digital world. Early moments of discovery can generate strong affective responses tied to novelty and sensory immersion, while prolonged play can produce experiences of familiarity and mastery. This study focuses on the temporal evolution of exploration joy and exploration-related nostalgia, where players attempt to recapture the emotional quality of their earliest discoveries.

Open-world Games and Player Experiences

Open-world games are expansive, non-linear virtual environments that allow players to explore freely, make meaningful choices, and engage with the game world at their own pace without rigid level structures. They often prioritise player autonomy in deciding how and when to approach objectives, discover hidden locations, and interact with dynamic elements such as non-player characters (NPCs). This genre frequently overlaps with action-adventure and role-playing games (RPG), exemplified by games such as *Elden Ring* (FromSoftware 2022), *Valheim* (Iron Gate Studio 2021), and *Red Dead Redemption 2* (Rockstar Games 2019). Sometimes there are titles with a 'true' game ending, which finishes the game, such as *Subnautica* (Unknown Worlds Entertainment 2018), and other times, the ending is an optional consideration, such as in *Minecraft* (Mojang Studios 2011). Hence, the experiences related to it differ depending on which genre it overlaps with and the motives of the players playing it.

Many games try to emulate an open-world atmosphere by integrating visual cues to show interconnected environments. For instance, in *Stray* (Annapurna Interactive 2022), places of high elevation in the game give a panoramic view of the vast game world, showing the physical connection between the different places the player has been to, and reinforcing the illusion of a unified, explorable space. Despite the appearance of open-world, these games use carefully designed visual and gameplay cues to simulate openness without the complexity or scale of a truly open world. They cannot be considered open-world as they lack certain key characteristics of an open-world game: emergent gameplay and meaningful exploration, non-linear progression and player autonomy, and persistent world systems (Alexander and Martens 2017; Wang et al. 2024). Hughes (2023) provides one of the most comprehensive summaries of common characteristics among open-world games: (1) players exist to scale with the game world, i.e., they are situated in the world, can interact with it, and it feels alive; (2) the world is large, accessible, and connected; it doesn't have off-limit spaces and invisible or artificial barriers; (3) the game's central goal or storyline doesn't prevent engagement with the game world; (4) the game offers plenty of and varying types of interactive content; and (5) players experience the agency to engage and disengage with any task (Figure 1).

Figure 1: Open-world vs. constrained exploration spaces: *The Witcher 3* (top) illustrates a large open world, while *Stray* (bottom) depicts a more linear, tightly bounded environment with progression possible only through one path.

The extent to which games meet these core characteristics, they can contribute to a sense of connection between areas of the world, a connection with the avatar, and feelings of immersion and freedom (Hughes 2023). Studies on open-world exploration games such as *The Legend of Zelda: Breath of the Wild* (Nintendo 2017) have found a significant positive impact of playing on overall life happiness (Arigayota et al. 2025; Farca et al. 2020). Anto et al. (2024) also showed open-world games' benefits for cognitive escapism, relaxation, and well-being by allowing players to disconnect from offline stressors. In these studies, players' freedom to explore and their sense of exploration played a strong role; comparable games have shown similar benefits of satisfying the desire for curiosity and exploration (Gómez-Maureira and Kniestedt

2018). This is because spatial exploration is often the core mechanic driving games of this genre.

However, in open-world games, exploration extends beyond navigating the map. It can involve engaging with the environment, seeking out locations, collecting items, pursuing quests, and even entering optional combat encounters as part of exploratory play (Vickery and Wyeth 2022). Therefore, open-world exploratory games have also been linked with emergent gameplay, which allows players to create unique stories through their actions and spontaneous interactions within dynamic systems, leading to a greater sense of ownership and agency (Nur Fauzan 2023). The evolution and inclusion of multiplayer options further show the potential to enhance teamwork, communication skills, and community building (Li 2024).

Hughes (2023), who conducted several studies across different open-world games, captured how players experienced open-world games: they entered with self-defined goals but continually negotiated those goals against the game's unpredictable content, resulting in highly contextually situated experiences. They were required to remain flexible, abandoning, adjusting, or adopting goals in response to what the game presents. Despite low challenge levels for experienced players, the freedom to shift goals enhanced immersion, as players felt in control of their journey while embracing the uncertainty built into open worlds. Consistent with this, player reviews of open-world games like *The Elder Scrolls V: Skyrim* (Bethesda Softworks 2016) often highlight several different ways to play as a source of enjoyment, which sets the game apart from others. From the perspective of Self-Determination Theory (Ryan and Deci 2000), playing such games can therefore fulfil the needs of autonomy and competence as players exercise meaningful choice over their actions and, through the gameplay, master navigation and control over the game's dynamic systems (Przybylski et al. 2010). In the unique context where these games are also social, they can also help in the fulfilment of connectedness needs.

Changes in Gameplay Experience

Players' experience of gameplay evolves as gameplay continues. Gameplay in open-world and exploratory games is not static; it changes as players progress through different phases of interaction with the game world. Early gameplay often emphasises discovery and novelty, where players familiarize themselves with game mechanics, environments, and story elements. As gameplay continues, players encounter new progression systems, such as skill acquisition, unlocking abilities, and navigating increasingly complex challenges, which create a sense of progression. Existing research on how gaming pleasures and engagement shift over time has often focused on capturing short-term changes in immersion, emotions, and physiological responses, among others (Kumar et al. 2024; Ravaja et al. 2006); research looking at changes across longer spans, especially within the same game, remains limited (e.g., Reelfs and Hohlfeld 2022). Some studies have examined the relation between immersion and exploration; for example, it has been linked to game appeal (Christou 2014). Studies with immersive virtual reality show that immersion may intensify spatial presence, enhancing user engagement and emotional arousal, making unfamiliar spaces feel more vivid and even more aesthetic (Hruby et al. 2024; Steurer 2022).

Literature on gameplay experience across different game phases reveals distinct patterns of player engagement and emotional response. Early gameplay research emphasises the importance of the first hour in establishing player engagement and

determining continuance motivation (Cheung et al. 2014). Middle or progression-phase research highlights how players develop mastery and skill through adaptive systems, with enjoyment affected by genre and single-or multi-player mode differences (Brown 2020; Eshuis et al. 2023). Finally, late-stage or climax gameplay research demonstrates the disproportionate impact of peak-end effects, where final moments and endings significantly shape retrospective game assessment, often overriding the average quality of the overall experience (Gutwin et al. 2016).

Changes in gameplay experiences can occur even after the player has completed the game or a specific section of it. Nostalgia in gaming is conceptualised as a predominantly positive, social, and past-oriented emotion, often triggered by replaying older games or reminiscing about earlier play sessions (Bowman and Wulf 2023). Studies on gameplay nostalgia emphasise how players' reflections on past gaming experiences evolve and even impact their current game engagement (Inal and Wake 2023). Nostalgic gaming experiences serve as a means for players to reconnect with positive memories, reinforcing a sense of identity and continuity over time (Bowman and Wulf 2023). This revisiting behaviour is not simply a repetition of past play but often involves a reflective reinterpretation where players rediscover and re-experience game worlds with new perspectives (Wulf et al. 2018). There are several distinct types (or dimensions) of nostalgia studied in gaming, driven by gaming's unique ability to evoke nostalgia through replayable, sensory, social, and interactive experiences. An overview of nostalgia types studied in gaming literature has been presented in Table 1.

Dimension	**Explaination**	**Example**	**Studies**
Personal and Collective (social) nostalgia	Personal nostalgia includes autobiographical recollections of one's own gaming history; tied to self-identity and personal milestones. Social nostalgia is a shared reminiscences that emerge within gaming communities, forming a collective memory of a generation or subculture.	Retro-gaming forums, fan conventions, or, Solo play memories, single-player campaigns, personal first-game stories.	Keogh, 2017; Li et al. 2026
Retro-Gaming Nostalgia	This can include: nostalgia anchored to a specific hardware era (e.g., 8-bit, 16-bit); nostalgia evoked by visual/audio cues (pixel art); and nostalgia sustained through collective activities such as speed-running, modding, and preservation.	Indie games that deliberately adopt retro aesthetics to attract a broader audience.	Bosman 2023; Wulf et al. 2018
Narrative-Driven Nostalgia	Nostalgia generated through plotlines that reference or re-interpret past events, myths, or previous game lore.	Remakes that retell original stories with added depth (e.g.,	Butcher and Toh 2025; Daehnhardt 2024

		Final Fantasy VII Remake)	
Mechanic-Based Nostalgia	Nostalgia triggered by specific interactive systems that were hallmark of earlier eras (e.g., side-scrolling or turn-based combat).	Platformers that replicate classic jump-and-run physics or RPGs that preserve grid-based combat.	Garda 2013; Wulf et al. 2018
Gamer-Identity Nostalgia	Nostalgia that reinforces or re-negotiates a player's self-concept as a "gamer".	Retrogaming communities that celebrate "old-school" credentials or marketing that targets "veteran" gamers.	Heineman 2014

Table 1: Summary of types of nostalgia that have been studied in gaming.

However, none of these types of nostalgia specifically address the intra-game temporal dynamics of player experiences within expansive digital environments.

The Present Study

Existing literature demonstrates that gameplay experience evolves temporally across distinct phases. However, significant gaps remain in understanding how these temporal dynamics specifically manifest within exploratory open-world games, particularly how the pleasure derived from exploration itself transforms as players progress through extended play sessions. While research has captured short-term fluctuations in immersion and emotion, longitudinal studies examining sustained changes in exploration pleasure within the same game world remain limited. Furthermore, little research has systematically investigated how players experience and attempt to recapture early discovery moments as familiarity replaces novelty, or how nostalgia shapes ongoing engagement with explored spaces.

This qualitative study addresses these gaps using semi-structured in-depth interviews. Keeping at centre a broader framing of exploration in game including physical map exploration, practices across movement, narrative progression, resource gathering, etc., this study attempts to address the following research questions:

- How does pleasure from exploration change from initial playthroughs to extended gameplay periods?
- How does familiarity with game worlds transform the quality of exploration pleasure?
- What role does nostalgia for game exploration play in current gaming choices and experiences?
- How do players attempt to recapture or recreate their "first discovery" feelings?

METHOD

This study employed a qualitative methodology (semi-structured interviews with thematic analysis) to explore how exploration-related pleasures evolve over time during open-world gameplay and if/when nostalgia for exploration came into play.

Participants

Participants were purposefully sampled, consisting of adult players (aged 18 and above) with substantial experience in open-world games. Substantial experience with the game means that the participant has spent a significant amount of time actively engaging with the game (enough to develop familiarity, skill, and personal insight), which is often reflected in a high number of gameplay hours. Therefore, to include players with substantial and meaningful engagement in exploratory games, the inclusion criteria required a minimum of 50 hours of total playtime. This threshold is informed by average completion times of popular open-world and exploration-focused games (*Red Dead Redemption 2, No Man's Sky, Valheim, The Witcher 3: Wild Hunt*, etc), which range between 50–80 hours.

Recruitment was conducted via gaming forums and Discord communities. Ultimately, 16 interviews took place with a mean player age of 26.8 years (range 24–30) and gender distribution as 14 (87.5%) men and 2 (12.5%) women. Most participants showed a history of playing on Personal Computers (PC), with 50% playing on PS4, Xbox, and Switch in addition to PC. Players had an average of 182 hours in the game with range 65–360 hours. This exceeds typical main-story completion times as most players had completed the games more than once.

Games Included

Participants were provided with Hughes' (2023) characteristics of open-world games in advance and asked to reflect on whether they felt that the game(s) they wanted to talk about met these criteria. Additionally, it was decided not to limit the analysis to a single open-world game; instead, the study examined players' exploration journeys and experiences of exploration nostalgia across different games. This helped to gather richer insights, as well as uncover common temporal patterns and emotional dynamics that transcend individual game structures. However, open-world massively multiplayer online games (MMOs) such as *World of Warcraft* (Blizzard Entertainment 2004) and *EVE Online* (CCP Games 2003) were excluded since they emphasise multiplayer social dynamics and guild obligations that constrain individual self-pacing and solo exploration. These games introduce external player-driven restrictions and real-time social events, diluting the personal, contextually-situated experiences of autonomy in single-player or co-op open worlds.

Ultimately, participants mentioned having gameplay experience with the following games: *Elder Scrolls V: Skyrim* (Bethesda Game Studios 2011); *Fallout 4* (Bethesda Game Studios 2015); *The Witcher 3: Wild Hunt* (CD Projekt Red 2015); *The Legend of Zelda: Breath of the Wild* (Nintendo 2017); *Red Dead Redemption 2* (Rockstar Games 2018); *Cyberpunk 2077* (CD Projekt Red 2020); *Valheim* (Iron Gate Studio 2021); *Elden Ring* (FromSoftware 2022), and; *Starfield* (Bethesda Game Studios 2023).

Data Collection and Analysis

Each participant completed a remote video or audio interview. Questions focused on initial exploration (e.g., How did you feel when you discovered something new or unexpected for the first time?), evolution of exploration (e.g., Were there particular stages where exploration was most exciting or meaningful?), nostalgia (e.g., What triggers these feelings of nostalgia related to exploration?), and social contexts (e.g., Can you describe a time when exploring with friends affected your experience?). The mean interview duration was 52.12 minutes (SD = 15.28 minutes).

In addition to this, all participants were asked to create visual timelines or graphs representing their own subjective experiences across different phases of gameplay (beginning, middle, end of main quest, post-ending exploration, downloadable content [DLC]) in their chosen games. Figure 2 illustrates this method using two example graphs from participants' experiences with *Skyrim* and *Fallout 4*.

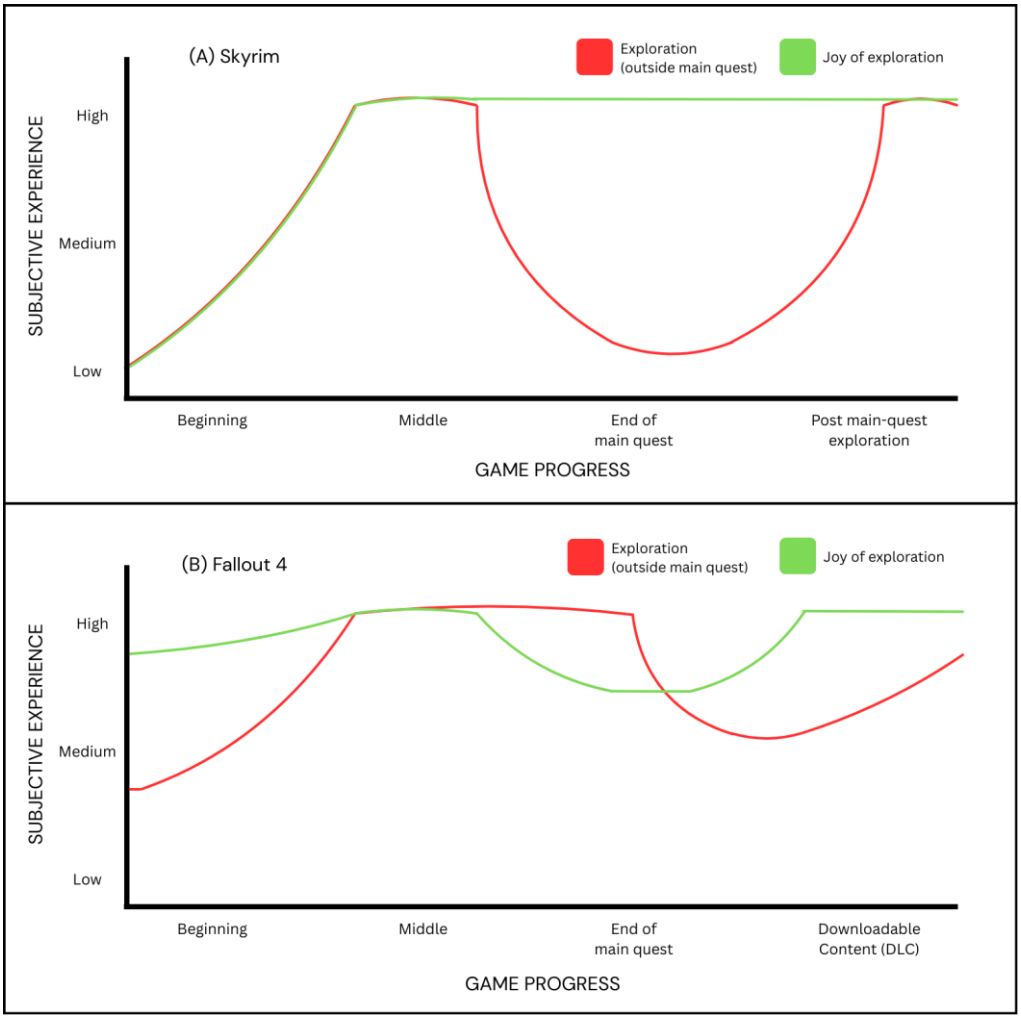

Figure 2: Participant-rated exploration and joy of exploration across game progress in (A) *Skyrim* and (B) *Fallout 4*.

Participants plotted their perceived levels of exploration (outside of that required by the main quest) and joy in exploration. This participatory mapping technique facilitated deeper reflection and allowed for comparative analysis across individual

gameplay journeys. However, the aim of the study was not to develop a universal predictive model of how exploration changes across a game; instead, its goal was to deepen understanding of the factors shaping players' exploration and experiences of nostalgia. The visual timelines instead served as reflective tools to further understand exploration. For instance, if there was a dip in exploration joy but exploration remained high, that was explored. Similarly, if exploration joy shot up suddenly, players were prompted to explore why that was the case.

Data were analysed using thematic analysis as outlined by Braun and Clarke (2006). This was particularly well-suited for an inductive and data-driven examination of complex subjective experiences such as those involved in gameplay. It involved familiarisation with data, generating initial codes, searching for themes, reviewing and refining themes, defining and naming themes, and producing a final report. Braun and Clarke (2006) also emphasised researcher reflexivity and the iterative nature of theme development as critical to uncover the nuanced, richly contextualised meanings; both of these were taken into consideration in data analysis. The researcher remained critically aware of her own experiences with and assumptions about open-world games, and the involvement of the second author helped provide an additional layer of reflexivity and rigor through collaborative discussion.

RESULTS

This section presents the key thematic findings derived from thematic analysis of semi-structured interviews with experienced players of open-world exploration games. Themes capture the temporal dynamics of exploratory joy, influencing factors, and emotional reflections. Six primary themes emerged (Table 2), and have been elaborated upon ahead.

Theme	Theme Description	Example Quote
Initial Novelty Thrill	Early excitement from discovering new mechanics, characters, and game worlds; immersive atmosphere and music	"I was extremely hyped to play it. And that was exactly the first thing I did after I got my graphics card... the music and everything. It was just exceptional... You get goosebumps. It was immersive..." - Participant 1 (P1) on *Skyrim*.
Sadness of Losing Novelty	The emotional dip when exploration becomes routine or predictable, and discovery fades	"I always feel sad after playing such a game. Because I know it will never be like the first time. And it's like that with everything in life, of course. Like, your first time will always be magical." - P3 on *Cyberpunk 2077*
Factors Affecting Exploration Behaviour	Difficulty, social co-op, community influence, real-life context, and personal gameplay adaptations	"I was exploring it with someone, to be able to constantly discuss, strategize, talk about, call for backup… having someone to depend upon can very strongly shift

		the whole experience of exploration in the game." - P4 on *Valheim*
Factors Reducing the Joy of Exploration in Games	Familiarity, repetition/ grind, narrative constraints, technical and social issues diminishing engagement	"There are more than 100 of those NCPD missions... they become a little repetitive. And you just grind through them." - P11 on *Cyberpunk 2077*
Nostalgia and Triggers	Sensory cues (music, visuals), personal associations, community posts and memories triggering nostalgia	"Sometimes I just either see a picture of the game or something reminds me of it, and I'm like, oh, I remember seeing that for the first time, and then it also makes me want to play it again." - P2 on *RDR2*
Strategies for Recapturing Exploration Nostalgia	Revisiting old saves, replaying in different modes/languages, co-op play, mods, and selective gameplay choices	"I was thinking of starting a new save, actually... playing the game in Polish... just doing something completely different." - P15 on *RDR2*

Table 2: Summary of Key Themes and Supporting Quotes from Interviews.

Initial Novelty Thrill

Players described the fun of initial exploration as intensely immersive and emotionally charged, driven by uncertainty, vulnerability, and discoveries. Initial exploration was often marked by excitement, fear, and sensory immersion from music, visuals, and mechanics. Many players described initial gameplay with adjectives such as magical, beautiful, and detailed, focusing on the role of stunning visual graphics in intensifying early wonder and drawing them into the game world. First encounters with new biomes, shipwrecks, caves, or resources triggered intense, authentic emotions:

> "It's a very real sensation. In that moment, because of uncertainty, everything you feel is just so much more raw. You're not in automatic mode yet… It's very, very real, as compared to when you come across the same thing again, because now you've seen it once, you've seen it before. You know how it acts, you know what it's used for." (Participant 4, on *Valheim*)

Carefully crafted game worlds kept rewarding curiosity with standout moments, such as finding and taming a rare elite horse in *RDR2*, or finding a hidden garage with a hypercar purely by chance in *Cyberpunk 2077*. Talking to a random NPC could spiral into hours-long quests that felt like whole games in themselves. Participants often recalled some specific event or cutscene or story line that they would stumble across while exploring:

> "You are just randomly roaming around and then you find a random quest- there was this one time, you get kidnapped in the middle of the night and then everything is taken off your body and then something like a note is left with a red handprint… it was a very surprising moment for me to go through

> that and have something that exciting happen in the game to me." (Participant 12, on *Skyrim*)

Overall, stepping into undiscovered areas, finding collectibles or rare materials, or crossing unfamiliar enemies brought raw emotions to the surface which made the game all that more immersive for players.

Sadness of Losing Novelty

Once familiarity set in, players described that they experienced the game differently. Familiarity emerged at different points for various players through different games, yet consistently brought melancholy over the future of never having first discoveries again. Knowledge boosted confidence and discernment, letting players skip empty alleys in *Cyberpunk*, roam conquered *Valheim* biomes with carefreeness, or target *Witcher* Grandmaster gear efficiently. But knowing the world's edges or having the blank world map filled also meant realising that time in the game was running out and it might be heading towards its end.

> "In the happiness of discovering something new, I can look back at that and I can also feel a little sad that I am never going to discover it afresh for the first time ever and experience the same degree of awe and wonder as in, I can make a new game and I can go out and do everything on a new character but that would not bring me the sense of wonder or joy or fear as it did for the first time." (Participant 13, on *Valheim*)

> "At a certain point, you do realise what the limits of the world are. It of course has to end somewhere, and that's always a bit of a sad feeling. The honeymoon phase is over, you know how big the world is, and the time you can enjoy the game is running out." (Participant 3, on *Cyberpunk 2077*)

Players showed the awareness that nothing could recreate the disorientation of being truly lost, with no clues or expectations to guide them. Instead of chasing experiences of already-discovered firsts, the pull leaned toward safeguarding progress in old saves or settling for the refined highs of later runs, where players noticed more things which they might have missed in previous runs.

Factors Affecting Exploration Behaviour

Exploration in open-world games typically ramped up after initial tutorials or main quests, once players mastered core mechanics and gained map access, shifting from cautious progression to deliberate wandering. Mid-game marked the strongest surge, fuelled by upgrades, new biomes, and story-mandated travel unlocking vast areas. Exploration rebounded post-main story or in replays when completionist drives emerged. Personal factors, including expectations also shaped trajectories; participants who were hyped about AAA title releases or were following game development for a long time either experienced "magical" starts in the game or, as in the case of Starfield, felt disillusioned.

Co-op/multiplayer expanded coverage via diverse goals. For example, Participant 7 played *RDR2 Online* with friends and covered more of the map through role splits like bounty-hunting and moonshining. Participant 4 played *Valheim* with their partner, and expressed that it boosted fun via shared strategy/panic. At times, the larger gaming community also affected exploration behaviour. For example, Participant 2

chased *RDR2* secrets with help from Reddit posts. However, this was relatively rare, as most players wanted to discover things by themselves, at least in their initial playthrough.

Over multiple playthroughs, exploration evolved from cautious, discovery-driven wandering to more strategic, goal-oriented approaches as familiarity grew, often shifting joy from novelty to efficiency. Early playthroughs involved stumbling into high-level areas or unexpected quests, while later ones focused on side stories, gear optimisation, and avoiding known pitfalls. Familiarity enabled smarter tactics like prioritising bombs for nests in *Witcher 3* or mapping islands in *Valheim*, but reduced emotional intensity.

> "If I were to start a new save now, in the first three hours, I would have to just have a set amount of things I need. I want more flasks. I want a lot of levels. So, I have some places I can go, where I can kill some high-level bosses pretty quickly. The first couple of hours is a lot more of a checklist you need to do like this to play the game a little bit faster and fluidly." (Participant 6, on *Elden Ring*)

Factors Reducing the Joy of Exploration in Games

As gameplay continued, the loss of unpredictability and the emergence of scripted or planned paths reduced engagement, making exploration feel less spontaneous and rewarding. Narrative intensity and linear mission design further constrained exploration by steering players toward story objectives, limiting freedom to roam. Moreover, repetitive tasks and grinding, such as collecting numerous collectibles or clearing repetitive objectives, lead to fatigue and boredom despite initial engagement. Completionist goals exacerbated this effect. Technical and social factors also played a role. Multiplayer modes with insufficient exploration incentives, unaddressed bugs, or toxic player behaviours disrupted the experience:

> "The game is filled with hackers. I remember the last time I played that online. My whole PC crashed so hard that the off button didn't even work... it's insane in that game. I generally am scared to touch online in that game again, because it's so bad. I'm really upset at it, because I really spent a lot of time online. And I kinda enjoyed it." (Participant 5, on *RDR2 online*)

Forced linear segments or slow, restrictive quest mechanics disrupted the open-world feel, detracting from the immersive exploratory experience. For instance, in *Starfield*, frequent loading screens fragmented exploration, making one participant actively avoid going into his ship altogether, thus discouraging him from using his vehicle of exploration. Players also experienced a dip in exploration joy during narrative-driven or certain constrained phases. As an example, one participant described the least joy derived from exploration in Guarma island (*RDR2*), stating that there was even less exploration than the beginning of the game, and that it took away from the joy intensely because he wasn't expecting it to be that restrictive.

Nostalgia and Triggers

Nostalgia in exploration was closely tied to sensory and emotional cues that reconnected players to their initial immersive experiences. Music and ambient sounds evoked strong memories, often linked to story moments or the atmosphere of early gameplay areas. Visual cues like old save files, screenshots, and recorded gameplay

captured past progress and feelings, allowing players to revisit and relive former experiences. Real-life associations with game elements (e.g., remembering playing the game during COVID-19 lockdown) deepened this connection, blending personal memories with in-game events. For many players, playing certain portions of the game also triggered memories of what was going on offline when they were at this in-game location previously.

External stimuli such as community discussions, online posts, guides, and YouTube recommendations acted as triggers by uncovering hidden content or reminding players of unique moments. Story-related events and character interactions offered meaningful nostalgia by stirring recollections of emotional game beats. One participant also mentioned a popular *Skyrim* meme, citing the guard's iconic "I used to be an adventurer like you, but then I took an arrow to the knee" line as a cultural phenomenon that evoked fond game memories. Overall, nostalgia emerged from a mix of in-game sensory experiences, personal context, and community engagement.

Strategies for Recapturing Exploration Nostalgia

Most players wanted to experience the intense emotions and wonder of their initial exploration experiences. This was achieved through a variety of methods including starting new playthroughs with adjusted goals to preserve freshness, using mods and randomisers to inject unpredictability into familiar worlds, and experimenting with novel character builds or settings.

> "I kind of did try to recreate exploring the game for the first time again. So we played it with a randomiser and then all of the items and weapons were randomised. All of the locations were randomised. As were all the bosses. So when you get to the supposed first boss of the game, you can get the final boss… At a place that's supposed to have a very good weapon, it could be just a flower. It was so much fun that I have those memories of doing stuff in the game, but now for the randomised version as well." (Participant 6, on *Elden Ring*)

Players also engaged in casual revisits focused on low-pressure activities or upkeep rather than full exploration, preserving old save files to safeguard memories, and utilising emulators to access similar games with a "first-time" feel. Additionally, fresh content via DLC or updates acted as a hook for re-engagement. Targeted use of niche guides also uncovered overlooked content, enabling deeper exploration and renewed excitement.

DISCUSSION

This discussion interprets how players' pleasure in exploration evolves across extended engagement with large game worlds, drawing together patterns from initial playthroughs and repeated returns to the same titles. Rather than treating enjoyment as a static trait, the findings highlight a dynamic arc: early-game exploration is marked by intense wonder and high stakes, which gradually give way to more mastery-oriented and goal-driven behaviours as familiarity grows. By focusing on "exploration nostalgia" and players' deliberate efforts to rekindle first-discovery feelings, the study extends existing work on enjoyment and replay into a more temporal, emotionally layered account of open-world play.

Changes in Joy from Exploration

Pleasure from exploration typically starts as intense, affectively rich “first-time” wonder and gradually flattens into a more goal-directed, backgrounded enjoyment as players become proficient and as more of the map is revealed. During initial play, immersion appears to amplify exploration pleasure by concentrating attention, increasing emotional intensity, and making unfamiliar spaces feel vivid and personally significant. Players describe initial exploration as being exhilarating whereas later play shifts toward satisfaction from mastery and targeted side-questing rather than pure discovery. This aligns with Self-Determination Theory, which states that competence satisfaction (derived from skill application and optimisation) can sustain engagement even after intrinsic novelty-seeking motivation declines (Przybylski et al. 2010; Ryan and Deci 2000). Transition from joy-in-discovery to joy-in-mastery can also reflect a shift from intrinsic novelty-seeking to intrinsic competence satisfaction. Many players emphasised that later playthroughs trade surprise for satisfaction: exploration pleasure comes less from not knowing what lies ahead and more from re-visiting favourite regions, efficiently clearing content, and uncovering secrets missed in earlier runs (such as entire quest-lines only discovered on a later playthrough).

Across interviews, exploration-related joy peaks when new regions, mechanics, or DLCs are unlocked (moments that reintroduce uncertainty and surprise), then declines once the world feels largely “known,” or when exploration becomes scripted through map icons and checklists. This highlights the importance of open-world design where developers must create expansive worlds that feel liberating and rewarding while simultaneously leading players towards engaging parts of the map for preventing player disengagement through boredom or confusion (e.g., Li 2020; Wang et al. 2024). It also mirrors ideas on progressive information disclosure in open-world design, where strategically withholding map data and gradually revealing world structure can sustain novelty and prevent early saturation (Kosa and Uysal 2024).

Notably, participants who engaged with higher difficulty settings or introduced self-imposed constraints (e.g., new builds, modded mechanics) reported sustained exploration pleasure despite familiarity, suggesting that challenge reframes known spaces as novel testing grounds (Sweetser and Wyeth 2005). Additionally, community-driven content (guides, shared discoveries, mods) and real-world temporal gaps between playthroughs reintroduce uncertainty: players return to 'known' worlds that have been culturally refreshed or personally forgotten, partially restoring the conditions for discovery-based joy.

Familiarity With Game Worlds and Exploration Pleasure

Increasing familiarity transforms the *quality* of exploration pleasure from uncertainty-driven intensity to confidence- and competence-based gratification. Knowing enemy patterns, biome risks, and resource locations reduces fear of loss and makes roaming feel safer and more carefree, but it also dulls the sense of surprise and the emotional edge that comes with not knowing what might appear in the next area (Figure 3). Participants described later exploration as more relaxed, strategic, and sometimes instrumental (e.g., farming resources or optimising routes) rather than an open-ended search filled with possibilities. While the immediate affective intensity of discovery diminishes, players simultaneously report deepening structural appreciation, noticing lore details, narrative callbacks, and environmental storytelling only visible post-familiarity. Several participants mentioned noticing details and storylines that they

had previously missed. This suggests a potential trade-off not between engagement and disengagement, but between *affect-rich* and *cognition-rich* modes of engagement (Calleja 2011).

Figure 3: Early-game vulnerability and late-game certainty in exploration of *Valheim's* biomes: initial gameplay involves low stats and basic armour (top) while late-game characters often have high stats and advanced armour (bottom).

Additionally, participants varied significantly in how they responded to familiarity: some actively sought re-engagement through self-imposed constraints (mods, difficulty increases, speedruns), while others accepted the shift toward instrumental play. This variation aligns with individual differences in trait sensation- and novelty-seeking and approach/avoidance motivation (Hoyle et al. 2002), suggesting that the 'dulling' of surprise might be mediated by player personality and goal orientation rather than universal habituation.

Exploration Nostalgia

Nostalgia research defines the phenomenon as a sentimental longing for the past, characterised by both positive affect and awareness of temporal distance (Sedikides and Wildschut 2016). Exploration nostalgia emerges once players recognise that the intensity of first discoveries cannot be fully repeated, yet remains a powerful affective pull shaping current gaming choices. It appears to be a distinct construct from other nostalgia-based game studies by centering on the temporal transformation of spatial discovery experiences within the game world. It does overlap with personal nostalgia (discussed in Table 1), as it is rooted in autobiographical memories of one's own first discoveries, but is tied to a specific gameplay phase and process. Exploration nostalgia can also be theoretically grounded in Vella's (2014) concept of the ludic subject (players don't just control avatars but become them through play), where players initially experience full embodiment and situatedness within open-world spaces. As familiarity grows, this primary ludic bond weakens, creating nostalgic longing for the lost immediacy of being situated in the game-world.

Triggers for nostalgia include music, screenshots, community posts, DLC announcements, and even small sensory associations, which prompt cravings to re-enter those worlds or start new runs. Research on context-dependent memory (Godden and Baddeley 1975) explains why seemingly minor triggers, like a specific soundtrack or time of year, reliably evoke exploration memories. Participants reported that revisiting game music or community art spontaneously reconstructed entire episodes, suggesting virtual worlds function as rich, multisensory memory places. Furthermore, the social dimension of nostalgia, triggered by community discussions and shared discovery narratives, suggests that exploration nostalgia is not purely individual but can be co-constructed through collective remembrance and meaning-making (Pasupathi 2001).

Boym (2001) distinguishes between restorative nostalgia (seeking to rebuild or return to a lost past) and reflective nostalgia (contemplating distance and change). Players' replay narratives often blend both: some attempt to reconstruct the exact conditions of first play (e.g., avoiding guides, playing offline), while others embrace their changed relationship to the game, understanding the impossibility of experiencing the same exploration as their first time in the game. This dual orientation suggests exploration nostalgia is not purely backward-looking but involves active negotiation between the remembered past self (the novice encountering wonder) and the present knowledgeable self (who plays with strategic mastery), creating a layered temporal experience where players simultaneously inhabit multiple time positions within the same game world.

Recreating First Discovery Feelings

Players employ various ways to recapture or approximate "first discovery" feelings, even while acknowledging that it cannot be experienced in the same way. These strategies could be understood in different ways: Constraint-based strategies (increasing difficulty, adopting novel playstyles) operate on the principle of self-imposed scarcity: by limiting available resources or heightening stakes, players reintroduce uncertainty into otherwise familiar systems. This mirrors flow theory's insight that sustained engagement requires a match between challenge and skill; familiar content can remain engaging if constraints are increased to restore optimal difficulty (Csikszentmihalyi 1990).

Mechanical and technical strategies (obscure quest-hunting, selective guide consultation, modding, linguistic/graphical reconfiguration) leverage the meaning-making potential of the non-changed game. This is related to Bogost's (2007) concept of "procedural rhetoric," which refers to how game systems and rules (procedures) create meaning. A game replayed in its original language, with fast-travel or portal mods, or with visual enhancements becomes partially estranged from prior memory. These interventions do not restore genuine unknowing behaviour but might introduce friction sufficient enough to feel like a discovery-like experience.

Social and mediated strategies extend discovery beyond individual replay. Co-operative exploration introduces genuine unpredictability: partner, emergent collaboration, and shared discovery create conditions of authentic uncertainty even in mechanically known spaces. Revisiting locations with absent partners or in new social contexts can make spaces affectively novel through social rather than epistemic means: the location now has new memories, conversations, and interpersonal dynamics.

Collectively, these strategies reveal that "first discovery" pleasure comprises multiple, separable elements: epistemic novelty (not knowing what's there), challenge uncertainty (not knowing if you'll succeed), social novelty (shared experience), and temporal distance (forgetting and remembering). By manipulating these dimensions independently players recreate discovery-like experiences even in thoroughly familiar worlds.

Limitations and Future Research

The present study has several notable limitations. First, participants predominantly referenced open worlds that are also role-playing games, resulting in a strong RPG bias in the dataset. Therefore, some open-world designs have not been represented, specifically those that appears in titles without substantial role-playing elements (e.g., *Minecraft*, 2011) and in MMOs where social interaction and multiplayer structures fundamentally shape exploration experiences. Additionally, while the interview data showed social exploration and co-constructed nostalgia, how social contexts (sharing discoveries, community discussions) shape temporal exploration experiences was not an explicit focus of the study from the onset. Second, the study sample largely represented young adults and underrepresented women players, possibly missing out on generational differences in exploration nostalgia (e.g., older players' comparative experiences across game eras) or gender-specific patterns in spatial navigation and emotional responses. Third, while this study identified strategies for recreating discovery (difficulty modding, social replay, etc.), it did not measure their *effectiveness*. The question of if mods and difficulty increase genuinely restore pleasure to baseline first-playthrough levels, or do they merely approach it remained unanswered. Finally, the analysis emphasised cognitive and affective dimensions but gave limited attention to embodied or physiological aspects of exploration.

Future studies should examine exploration and nostalgia dynamics in open-world MMORPGs, which fundamentally differ from the single-player titles analysed here. Cross-genre comparisons (e.g., contrasting curated open worlds like *Witcher 3* with procedural sandboxes like *Minecraft*) would provide a more holistic understanding of exploration pleasure trajectories. Experimental designs could directly test solo vs. social play effects, measuring affect (e.g., via the Positive and Negative Affect Schedule scales; Watson et al. 1988) during identical exploration tasks. Finally, studies

can also integrate neuroscientific and embodied methods to clarify physiological underpinnings of exploration nostalgia, bridging subjective phenomenology with physiological mechanisms. Such work would deepen understanding of how players negotiate the tension between discovery and familiarity, and how games function as repositories for meaningful memories.

CONCLUSION

This study shows that exploration pleasure in open-world games changes over time: it begins with intense, uncertainty-driven excitement during first discoveries, shifts toward competence satisfaction and strategic mastery in later playthroughs, and can eventually lead to "exploration nostalgia," a longing to recapture those initial feelings. These results have several implications for game researchers, developers, as well as players.

Findings extend Self-Determination Theory's competence need into temporal replay dynamics, challenging static models of gaming engagement. Exploration nostalgia emerges as a distinct construct, bridging nostalgia psychology (Sedikides and Wildschut 2016) with game studies, warranting dedicated scales and longitudinal tracking. Game designers should prioritise progressive veiling/unveiling (strategic fog-of-war, DLC-gated regions) and replay affordances (mod-friendly architecture, social sharing tools) to sustain discovery-like states across playthroughs. Rather than maximising initial novelty, they can cultivate layered re-discovery, with environmental details visible only post-mastery and narrative callbacks rewarding return visits.

For players this research validates deliberate replay strategies: for instance, mods are not "content denial" but functional novelty reconstruction; social co-op reintroduces novelty in game exploration; temporal gaps between sessions enable natural forgetting. Players experiencing "exploration fatigue" can experiment with constraint layering (perma-death runs, no-guide challenges) or relational replay (revisiting with new partners), transforming nostalgia from melancholic loss into active meaning-making.

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