

You Are *Under Watch*: Designing an Uncomfortable Pervasive Game for Critical Reflection and Player Equity

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Abstract

Discomfort in digital design has recently emerged as an open space for exploration, challenging notions that play and digital experience should strive towards pure “fun” or frictionless interaction. Pervasive games, which blend gameplay into players’ regular lives, offer an apt means of exploring discomfort by situating play activities within the real world. Uncomfortable pervasive games are uniquely positioned to prompt critical reflection in players by integrating discomfort from game mechanics with real-world concerns encountered during everyday life. This paper details the design process for *Under Watch*, a pervasive mobile game aimed at investigating the relationship between uncomfortable interactions and moments of critical reflection during play. *Under Watch*’s design considers the ethical and safety concerns of both pervasive play and discomfort design. This work offers implications and poses challenges to those seeking to further explore artistic works and interventions within the space of uncomfortable pervasive games.

Keywords

uncomfortable interactions, discomfort design, critical reflection, pervasive games, safety, ethics, practice-based research

Introduction

The voluntary exploration of discomfort has long been a core component of many fundamentally human experiences. Individuals and groups regularly choose to engage in activities that are intended to cause some form of physical, emotional, or other discomfort. For instance, many enjoy or take pride in overcoming the physical discomforts of thrill rides, extreme sports, or challenging rites of passage. Likewise, the uncomfortable emotions evoked through dystopian literature, horror films, and sad songs draw significant audiences.

Contemporary interactive art practices have sought to explore the notion of uncomfortable design more explicitly, inviting participants to co-create experiences of discomfort for themselves, for the artist, and for spectators. A notable example is Marina Abramović’s *Rhythm 0*, an endurance art piece in which audience members were permitted to use a range of provided objects however they wished on the artist, who submitted passively to any interaction that occurred during the performance block [1]. Similarly, Dread Scott’s *What is the Proper Way to Display a U.S. Flag?* asked participants to write a response to the titular question in a journal situated above a U.S. flag placed on the ground, bidding them to

stand atop the flag to achieve a comfortable writing position [17]. In both cases, the artists provided the space and opportunity for social transgression, encouraging active engagement in uncomfortable interactions and provoking reflection on individual and societal values.

In the realm of interactive art, one medium has seen a recent rise in prominence: games. Perhaps the most famous example of games for discomfort is Brenda Romero’s *Train* [5], in which players compete to efficiently load passengers onto railcars and transport them across the board; later in the game, it is revealed that the railcars’ final destination is Auschwitz, making the players unwitting participants in the Nazi campaign to send Jewish peoples to the concentration camp [5]. In Blast Theory’s *Ulrike and Eamon Compliant*, players are asked to adopt the identity of one of two historical figures infamous for their acts of radical terrorism and guided on a walk through public spaces; during the walk, players are fed instructions to perform unusual actions (e.g., touching their heads) before receiving further direction, constructing a feeling of constant surveillance [18]. The extended and personalized interactions achieved in games enable players to embody diverse perspectives and deepen their connections to people, places, and timelines outside their usual experience.

To create a game is to transcend temporal boundaries, to reference past stories and present systems while anticipating the limitless moves of future players and allowing for emergent gameplay. When paired with the age-old exploration of discomfort that has defined human culture, game art becomes a powerful venue for engaging with the difficult themes and uncomfortable stories that haunt and inspire humanity.

Accordingly, *Under Watch* aims to investigate the capacity of uncomfortable interactions in eliciting high-level reflection through the implementation of a pervasive game on the topic of mass surveillance. The pervasive design of *Under Watch*—which draws explicit attention to how the layered ecologies of human, technological, and environmental actors permeate our everyday experience—seeks to match the pervasive nature of surveillance technologies in the digital age and thus promote deeper understanding on the subject. In playtesting, we encountered a number of dilemmas concerning the inclusivity and equity of our project design that extend to pervasive gaming and discomfort design at large. In this paper, we discuss the theoretical foundations and ethical considerations that have guided our design process.

Background

Discomfort Design

Recent research in the realm of human-computer interaction has explored the role of discomfort design in promoting higher levels of reflection. Benford et al. suggest how uncomfortable interactions in cultural experiences can support users in attaining enlightenment by establishing an appropriate tone for engaging with dark themes and provoking interpretation through the deliberate use of ambiguity [2]. Bopp et al. find that players of digital games appreciate emotionally challenging experiences significantly more than experiences predicated on more conventional types of challenge, such as physical or cognitive [4]. Gowler et al. report how discomfort experienced in digital games contributes to a richer gameplay experience and acts as a catalyst for reflection in players [8]. Wilson and Sicart propose that abusive gameplay experiences can construct a dialogic relation between player and designer, making for more provocative, productive, and personal play [21]. As interest in serious games and other forms of critical design grows, these probes into the reflective experiences yielded by uncomfortable interactions offer designers and scholars a tantalizing new frontier in design.

There are multiple levels at which reflective thought can occur, with the higher levels of transformative and critical reflection being much more rare [7]. The difficulty of triggering high-level reflection is corroborated by studies like Mekler et al.'s on instances of reflection prompted by digital games [14]. Given that engagement in transformative or critical reflection is the most impactful in terms of perspective and behavior change, we became interested in studying whether higher levels of perceived discomfort could invoke higher levels of reflection among players.

Pervasive Games

A promising avenue for inducing high levels of discomfort is through the creation of a pervasive game, or “a game that has one or more salient features that expand the contractual magic circle of play spatially, temporally, or socially” [15]. These expansions of the game’s boundaries which blur the line between game and reality offer fertile ground for discomfort exploration. When the space of a game does not stop at the edge of the screen but bleeds into a player’s everyday environment, uncomfortable in-game occurrences become inseparable from lived experience. When the sociality of a game is intercut with non-player bystanders, the very notion of being a ‘player’ is called into question and game-induced social discomfort becomes intertwined with personal identity. If the architecture of an uncomfortable interaction can be mapped onto Freytag’s five-act dramatic structure [2], a temporally expanded game that considerably lengthens the rising action or climax phases could yield far greater intensity.

While several studies have addressed the use of uncomfortable interactions in short-form pervasive games [2, 15, 18], little research has tried to explore the intersection of discomfort design and temporally pervasive games or other methods of effecting long-form discomfort. In addition, studies examining the relationship between uncomfortable gaming experiences and player reflection tend to interview subjects in dis-

tant hindsight, where the extent of reflection may have since been forgotten, or across a wide array of games, where researcher insight into design choices and gameplay is severely limited [4, 8, 14, 20]. Thus, we utilize an interdisciplinary practice-based methodology as our team of game designers, artists, and engineers closely collaborate in the creation and analysis of a two-week pervasive mobile gaming experience.

Design Process

Drawing on Bogost’s concept of procedural rhetoric [3], we originally designed a game in which the experience of discomfort is built into the very mechanics of the game. We conceptualized *Under Watch* as a paparazzi-themed version of the game *Assassin* [15], asking players to stealthily capture photos of their targets while avoiding photographic capture themselves. The resulting pictures would then be uploaded to a private social networking group and shared amongst players, simulating a tabloid’s circulation of celebrity photos. Successful uploads in which the target is identifiable in the photo would award the photographer with points.

This design sought to induce discomfort on several levels. From a player’s perspective, the knowledge that another player may at any moment be stalking and photographing them yet being unable to identify ‘assassin’ from bystander gives rise to the persistent pressure of uncertainty [8], a feeling prolonged by the temporally pervasive nature of the game. When paparazzi pictures of a player begin to circulate without their permission or awareness, they may experience “discomfort through control” [2] as they surrender control of their privacy to other players. Moreover, the visual impact of seeing one’s own likeness through the lens of a stealthy stranger induces “cultural discomfort” [2] in which players must confront the disturbing feelings invoked by the culturally-charged imagery resembling surveillance footage or stalker photographs. Finally, the voyeuristic mechanic of secretly pursuing and photographing others forces players to face the “emotional challenge” of taking on difficult decisions [4] as they choose to forsake their own ethical values or upstanding reputation and villainously invade others’ privacy.

Pervasive Gaming and Equity

Concerns of equity and player safety are essential considerations for game designers, but the stakes are magnified when designing for pervasive games. In a roundtable with the authors of *Pervasive Games: Theory and Design*, Stenros acknowledged that “if we think about who is the envisioned player in this book, it is mostly a middle-class person” [13], pointing to how a presumed player’s socioeconomic status can bias design standards in the field. The same sentiment can easily be extended to factors such as gender, race, sexual orientation, and more. For example, in the wake of the release of Niantic’s *Pokémon GO* [16], multiple accounts were published concerning episodes of harassment experienced by players from marginalized populations [12]. Location-based mechanics may place players in neighborhoods where they are subject to racial profiling; repetitive motions or unusual behaviors encouraged by gameplay may cause players—particularly minority players—to be marked

as ‘suspicious’ by bystanders and authorities. As pervasive games blend game mechanics with real-world interactions, it is critical for designers to consider how different populations may have or lack options for performing such actions safely.

An early internal design test of *Under Watch*’s gameplay highlighted a significant player safety concern: several playtesters reported that the stealth photography mechanic incentivized them to disregard typical social constraints and hide in bushes, peek through windows, or loiter around building lobbies. From the final scoring, it quickly became evident that the types of actions our game design encouraged would put players from marginalized populations at real risk, while refraining from using these strategies would substantially disadvantage them against other players with less to fear.

There exists an argument grounded in discomfort design for embracing unfair gameplay: the potential for prejudiced social surveillance introduced by real-world onlookers and inherent strategic disadvantages faced by minority players within the game could serve to elicit critical reflection on how systemic inequities are perpetuated in reality. However, in a pervasive game, we must consider the current realities of our location; when recalling local fatal incidents in just the past year related to racially-influenced police brutality [19] and a hate crime targeted at LGBTQ visibility [6], the necessity of altering our initial design becomes indisputable.

New Design

In light of the safety risks encountered in playtesting, we chose to perform a fundamental reconsideration of the project plan. We shifted our focus topic from camera surveillance and physical privacy to social network analysis and data privacy, in tandem with a significantly altered game design addressing concerns of well-being and equitable play.

Our new iteration revolves around what appears to be a gamified social-networking mobile app called SnapGram that simply encourages participants to find and take selfies with fellow players, meeting new people in the process. Here, we replace the stealth mechanic of furtively photographing fellow players with the taking of selfies, a behavior generally recognized as friendly and consensual which gives bystanders little cause for suspicion. We believe this change effectively addresses the most serious safety concerns of the previous design; yet, it also eliminates the mechanics-driven sources of discomfort that defined the initial design, necessitating a major revision to reinstate the uncomfortable nature of the game.

Although the opportunity for mechanical persuasion is lost, research has shown that narrative causes and particularly narrative reveals are the most common catalysts for “perspective-challenging moments” in games [20]. Keeping in mind our ultimate goal of examining critical reflection, we turned our attention to crafting a narrative world and thought-provoking plot twist for the *Under Watch* experience. We set up an unsettling turn of events by “lying to the player” about the true nature of the study, a practice associated with abusive game design [21], initially presenting it as innocent research on social media networking interactions. However, over the course of the game, disquieting in-app experiences related to SnapGram’s insidious practices will slowly reveal to players the negative consequences of their online actions. For instance,

‘sponsored content’ interspersed in the SnapGram feed will become increasingly microtargeted to each user, eventually featuring manipulated images of their own face or explicitly referencing their recent location data. The culturally resonant aesthetics of the app interface and embedded advertisements, modeled to closely resemble current reigning social media platforms, will create a sense of realism and induce cultural discomfort [2]. Frequent updates to SnapGram’s ‘terms and conditions’ will progressively escalate the company’s claims to user data, while occasional announcements about ‘data breaches’ will expose weak privacy protections. Additionally, the incorporation of AI facial recognition technology into the app will introduce concerns around biometric data and surveillance. This worldbuilding around SnapGram’s unscrupulous practices asks players to take on the emotional discomfort of confronting difficult themes [4].

Through these narrative devices, we seek to evoke pervasive feelings of discomfort in players regarding the security of their own data, thus promoting critical reflection on the subject of commercial mass surveillance and data privacy. It is our hope that the *Under Watch* experience will educate participants on the consequences of unchecked data surveillance paradigms and inspire advocacy for more sustainable privacy practices. The SnapGram mobile application is already under development, and our research team plans to recruit subjects and conduct the study during our university’s freshman welcome week at the start of the 2024-2025 academic year. If the pilot study yields interesting pedagogical results, there is potential to implement the project in other venues to reach a wider audience. However, the process of adapting the experience for new sets of players raises further ethical questions.

Ethics of Designing Discomfort

By forfeiting the attempt to introduce discomfort through game mechanics, we greatly reduce the risks that operating in a real-world environment demands from marginalized players. However, looking beyond straightforward safety measures, a closer examination of our project approach reveals a more nuanced debate about what discomfort design means for a fragmented audience with drastically different past and ongoing experiences of hardship. On one hand, the argument exists that reflection only occurs in the midst of discomfort and that an overly safe game environment can result in a perception of irrelevance to the real world that limits reflection and learning transfer [11]. On the other, research has shown that closer proximity to real life is not always desirable, as in the case of projective identification where playing as a character from a third person perspective can better facilitate reflection than playing as oneself in the first person [10]. Balancing distance and proximity becomes ever more complicated in the case of pervasive gaming, where regardless of any fictional worldbuilding or role-playing elements, the player still operates in their own body and within the material world.

The themes of surveillance and tracking prompted our research team to contend with the question of designing for discomfort without re-traumatizing individuals for whom surveillance is already a longstanding concern in their daily lives. Theories on the benefits of uncomfortable interactions can often be informed by a position of privilege which treats

discomfort as a novel and contained episode with educational value. For populations who have already experienced such discomfort, designed discomfort is not only unnecessary but can be actively harmful, especially in the case of issues which are systemic, intergenerational, and ongoing [9]. As we continue to contend with these ethical questions, we aim to spark extended conversations among artists and researchers working in the space of discomfort design.

Conclusion

As we pondered problems of equity and responded with revisions, our project fundamentally transformed. The resulting experience can no longer be identified as an uncomfortable game, but is better described as an uncomfortable transmedia storytelling event. The injustice of being unable to offer an interesting and informative pervasive gaming experience due to concerns of violence against players with marginalized identities is lamentable. However, *art is an act of memory*, and the stories we tell in future versions of *Under Watch* reflect the difficulties encountered in past iterations.

Our examination of reflective gaming through the lens of discomfort design raises questions: Is it possible to design a pervasive game that ensures safety and equity when players exist in a world that is inherently unsafe and inequitable for marginalized populations? What are the implications for the accessibility of pervasive games, and reflective design practice in general? How can uncomfortable interaction design be reconciled with a diverse body of players for whom the experience of certain discomforts is not an educational exploit but an existential fact? The challenge of addressing these issues will continue to guide us as we move forward in the *Under Watch* project and future works.

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