

Lingering Serious Experience as Trigger to Raise Awareness, Encourage Reflection & Change Behavior

Tim Marsh¹ and Brigid Costello²

¹James Cook University, QLD, Australia
tim.marsh@jcu.edu.au

²University of New South Wales, Australia
bm.costello@unsw.edu.au

Abstract. While work in interaction design, human-computer interaction (HCI) and the games literature begins to address experience beyond positive, it just scratches the surface. By turning to drama, literature, music, art and film that has shaped experiences and emotion beyond the positive and fun for many years, we describe what experience beyond positive looks like, show how it is not always “uncomfortable” and argue for the more appropriate term “serious experience”. We discuss the importance of the take-away message / serious experience in persuasive technology, persuasive games and serious games to linger or resonate post-encounter for user/players to encourage reflection, affect attitudes and change behaviors in order to fulfill a persuasive purpose. Finally, we describe associated ethical concerns and make recommendations for designers, evaluators and practitioners in order to safeguard players/users.

1 Introduction

Like drama, literature, music, art and film, we argue that experience from interaction or play with persuasive technology and games shouldn't exclusively be positive nor always have a happy resolved ending. Instead we propose that persuasive technology and games may aim to fulfill their purpose by evoking less fun positive experiences. For example, where the purpose is to provoke thought, provide a message or an experience on a particularly difficult, uncomfortable or unsettling subject or issue. In addition, we argue that experience with persuasive technology and games needs to resonate or linger with the user/player after an encounter to encourage reflection, affect attitudes and change behaviors in order to fulfill a persuasive purpose.

This paper is organized as follows. We review the literature on experience in interaction, HCI and games, and identify limitations with this work. We then turn to other media and art forms including drama, literature, music, film and interactive

art to show how these limitations can be addressed. Next we propose the categorization *serious experience* to encapsulate experience beyond positive and fun, and to provide necessary and appropriate experience to linger or resonate post-encounter for users/players in order to encourage reflection and change attitudes and behaviors to fulfill purpose. Finally, we briefly talk about the associated ethical concerns and make recommendations for designers, developers and practitioners in order to safeguard players.

2 Experience in Play and Interaction

In computer, video and digital games, *experience* has been the main driver for design since their inception. The term *player experience* is used to frame experience that players get from playing games and specifically, player experience is widely described under the broad term *fun*. According to Salen & Zimmerman [38] “Good games are fun. Fun games are what players want”. Fun is “central to the process of making good games” [14]. Strong support for these claims is provided in an Entertainment Software Association¹ survey that reported 87% of the most frequent game players cited fun as the first reason why they play video games [13].

Likewise, in the design discipline of HCI, much work has attempted to shed light on the composition and foundational elements of experience and user experience in interaction design. This is demonstrated in proposed theories, levels, threads, frameworks and design research and thinking that emphasizes the pleasure [27], hedonic [19], ludic [16], emotional [35], enchantment [49] and fun and enjoyment [5] qualities and value in interaction experience.

However, HCI has struggled to reach a common understanding and consensus definition [e.g. 20, 29] demonstrating the multifarious and elusive nature of experience. While there is little doubt that work on experience in HCI has been instrumental in providing a language and in refocusing interaction and product design towards a broader experiential perspective, two major criticisms can be attributed to much of this work.

First, it is invariably restricted to positive, fun and aesthetic experience [21, 40]. Second, HCI has largely been concerned with the moment of experience and tends to ignore things that “outlive the moment experience” that people really “value” and “find worthwhile” [10].

¹ ESA: Entertainment Software Association, US trade association for video games whose members include Atari, Electronic Arts, Microsoft, Square Enix et al.

2.1 Experience Beyond Positive and Fun

We argue that for designers to focus on fun means that they might take a shallow or cursory approach to the design of negative affect rather than advocating design and development of alternative and deep experiences and emotion beyond fun in games. Consider for example a persuasive game like *Darfur is Dying* which has been very successful in raising awareness on the plight of starving people in Darfur and the everyday risks and fear they encounter from armed militia, and in persuading people to take action. However, as the game itself is fun to play, it can create a level of unease because of the tension between, on the one hand, the fun gameplay, and on the other, the serious subject matter it portrays. For the informed player this tension is awkward and discomfiting and can appear disrespectful of the suffering, misery and distress endured by the people the game is intended to help.

Ian Bogost, co-founder of Persuasive Games, in an interview with Gamasutra [15] similarly argues for the development of human experiences beyond fun in games:

*“For 30 years now we’ve focused on making games produce fun”
 “Isn’t it about time we started working toward other kinds of emotional responses?” “I know that comparisons to the film industry have grown tired and overused,” he says, “but indulge me in this one: When you watch the Academy Awards this year, how many films in the running for awards are about big explosions and other forms of immediate gratification, and how many are about the more complex subtleties of human experience? “Someday, hopefully someday soon, we’ll look back at video games and laugh at how unsophisticated we are today”.*

The games literature is increasingly identifying that designing exclusively for the experience of fun in games is too limiting. Hunicke, LeBlanc and Zubek [24] argue for a move away from words like *fun* towards a more appropriate vocabulary to describe “the desirable emotional responses evoked in the player, when she interacts with the game system”. Similarly, Calleja [9] identifies limitations with the term fun applied to games arguing that “pinning motivation for game-playing on the notion of fun risks missing important dimensions of the game experience”. While work in games proposes experience beyond the positive, for example as shown in the claimed “comprehensive categorization of digital game experience” [36], with two categories, out of nine being associated with “negative experience” (*negative affect*: frustration, disappointment, irritation, anger; *suspense*: challenge, tension, pressure, hope, anxiety, thrill), the title however, appears to identify the authors’ point of view that whether or not game experience is positive or negative, “[i]t is always a lot of fun!”.

So while the HCI community of ACM SIGCHI finally opens-up shop on experience other than positive, fun and aesthetic, as elegantly captured in Benford et al.’s

[4] work on "uncomfortable interaction", and the game literature increasingly identifies the importance of moving beyond the fun game experience, much work is still largely tentative, and is only just beginning to scratch the surface.

Looking to other media, drama, music, art and film that provide powerful and deep experiences and emotion to inform user and player experience provides some leverage to these discussions. In music compositions that create variations in feelings, moods and emotions beyond the positive – it would be quite limiting and tedious if all music was restricted to just positive and fun. In drama, literature, film and storytelling in general, experience beyond positive is necessary to portray suffering, struggle, conflict and adversity, etc. For example, in typical drama and story structure such as the 3 or 5 act play, to set-up a rising action or conflict, that is typically followed by a resolution, but not necessarily a pleasurable one (e.g. Shakespearean tragedies). Grodal [18] has looked to film experience in an attempt to understand video game experience and building on Zillmann's [43] work on the psychology of suspense in drama and film, Klimmt et al. [28] identified suspense in video games.

In addition, much work in HCI and games adopted Boorstin's [6] three Vs foundational elements of experience and emotion from film: voyeuristic (new and the wonderful), visceral (thrills, spectacle and suspense) and vicarious (empathy and emotional transfer). In HCI and interaction design, the three Vs also played a prominent role in proposals for shifts "from usability to user experience" [42] and in informing underlying foundational elements for experience and emotion in interaction and product design in popular HCI texts [32, 35]. However, again the emphasis in this work has been on positive and fun experience to inform HCI, but which largely disregards the power of the three Vs to describe experience beyond positive [33]. While Norman [35] acknowledges the importance of negative emotion in design as suggested in the sub-title of his book, "Why we Love (or Hate) Everyday Things", he offers only a cursory discussion on the negative.

While the three Vs experience continues to be adopted and applied to video games, again this work largely focuses on fun experience. For example, [14] identifies the three Vs as "corresponding" to his framework of fun in "Natural Funativity's Physical, Social, and Mental fun"; and [37, 39] adopt the three Vs to help talk about the fun and experience of playing a game. However, the beauty and power of the three Vs is in its ability to frame a broad range of experience and emotion - both "positive" and "negative" (frightened, disgusted, nauseated, tense, sad, angry, weak, tension, cowardly, serious) as shown in study results from survey and interview approaches experienced by almost all players with our test education and first-person shooter games [30, 31].

Other work in games that aim to create an experience beyond fun by capturing and expressing "difficult emotions with a games mechanic", that linger after the game has finished, comes from Brenda Brathwaite and her well-known GDC 2010 talk [7] and her "works" within the Mechanic is the Message [8] series of non-digital games. These include: *The New World* (2008) about the Middle Passage and slave trade, *Síochán leat* aka "The Irish Game" (2009) about the Cromwellian Invasion of Ireland, and *Train* (2009) a game about the Holocaust and the transportation of people to concentration camps [8]. Participants of these games learn about, and are

complicit in, difficult subjects that either emerge during gameplay or are revealed fully after the game (e.g. Train), and the associated difficult experiences and emotions linger after the game has finished.

Although often using similar interactive technology and games, interactive art has never shied away from creating uncomfortable or unpleasant experiences. Artists might use exaggeration, shock or disorientation to create experiences of alienation. They might also create works that ask their audience to subvert or resist common uses or purposes of a technology [26].

For example, in *Pin Cushion* [41] the audience is invited to distort a representation of a human female face by pricking it with large acupuncture needles. However, they have less control than they think. As a participant touches the needles the artwork reads her or his body's electrical conductivity, resistance and charge. It is this intimate reading that impacts the lifespan and well-being of the character.

Working against the usual excitement of interactive technologies, *Perversely Interactive System* [25] uses a biofeedback device to measure tension levels in the participant, with the character in the artwork only responding when tension levels are low. As the artists describe, this was uncomfortable for the participant because it meant that "getting what one desired required controlling or denying that desire". In each case, the audience unease or discomfort is used to provoke interpretative reflection.

Finally, we identify examples in interactive art and games where the user/player takes pleasure from negative experience. Early 20th century conceptions of play included experiences of physical pain and mental suffering. The pleasure that we might take from probing a sore tooth or experiencing the sadness of a tragic artwork being described as a form of playing with emotions that stems from a need to "satisfy our craving for intense impressions" [17].

Recent frameworks from games and interaction design researchers also include experiential categories that go beyond common conceptions of fun. For example, Bartle's [3] model of player types in MUDs includes *killers*, a type of player who derives pleasure from bullying and/or manipulates others.

Costello and Edmond's [11, 12] pleasure framework includes the category of *subversion*, which describes the pleasure that can be had by behaving against the norm, by breaking rules or of seeing others break them. Building on this framework and with a focus on game experience, Arrasvuori et al [2] have added the categories of *cruelty* and *suffering*. Cruelty is the playful experience of acting to cause physical or mental pain in others. Suffering they describe as encompassing the emotions of "boredom, stress, anxiety, anger, frustration, loss and even humiliation".

While these examples demonstrate that experiences and emotion beyond the positive from interaction and play is an area that continues to be enthusiastically explored in games and interactive art, the negative and potentially extreme experiences from encounters suggests that precautions must be taken to ensure the safety and well-being of players/users.

3 Serious Experience

As shown in table 1, we argue that experience from an encounter (interaction or play) with persuasive technology, persuasive and serious games is framed within two main categories: positive and serious; and propose that design should be an appropriate rhythm between these two.

Serious experience encapsulates experience beyond positive and fun, and is composed of two sub-categories. The first category generally identifies experience that is neither exclusively positive nor negative/uncomfortable, but falls somewhere in-between. These are entertaining, likable, or where user/player takes pleasure from negative experience. For example, interaction or play that is thought-provoking, informing, raises awareness on issues, or where the user/player takes pleasure from negative experience, variously described in interactive art as “pleasurable sense of unease” and “pleasurable thrill of danger” [12], in games as “positive negative experience” [23, 34], and in learning games as “pleasant level of frustration” [22]. This categorization of experience is *entertaining without being exclusively fun*.

Table 1. Between Positive and Serious Experience

Experience		
Positive	Serious	
Fun	Thought-Provoking	Negative, Uncomfortable, Unpleasant, Provoking
	Positive-Negative	

The second category is “uncomfortable” and “negative experience”, as discussed above. These extreme experiences and emotions are disturbing, discomfoting and provoking, and in persuasive technology and games the user/player unease or discomfort is used to provoke interpretative reflection and encourage changes in behaviors in order to fulfill a persuasive purpose.

We acknowledge that an encounter with persuasive technology and game may be experienced differently at different times by the same user/player or can be experienced differently by different users/players. This depends not on the experience itself but on the perception of the person who experiences it. For example, fun at one time and thought-provoking the next or one person experiences a negative and

unpleasant experience while another experiences it as thought-provoking. One theory that may help provide some leverage in further investigations is Apter's [1] reversal theory where the exact same type of high (or low) arousal experience could cause one person to experience it as unpleasant and the other as pleasant.

4 Ethics and Code of Practice in Serious Games

Our concern is not only with the moment-to-moment and in-game experience per se that has dominated work in video games and interaction design, but also on experience that lingers or resonates with users/players after an encounter. This is similar to the idea of bleed in games where a weakening of the protective frame of play allows emotion and experience to bleed out from the game and influence the player outside the game beyond the magic circle [28]. As it is these lingering and resonating experiences that users/players take-away that often provide a measure of success of purpose in serious games, as designers and developers we must be aware of the potential danger and harm that serious games could cause.

While drama, performance, literature and film have portrayed similar extreme and difficult topics, perhaps similar age/rating systems should be introduced. We recommend that developers of games with such extreme topics are aware of the ethics surrounding their development, that guidelines should be drawn-up to inform design and development and, in some cases, they are used only under rigorous procedures and are followed by debriefing sessions (similar to those used in psychology experiments and HCI studies) to safeguard and protect players from harm.

5 Conclusion and Future Work

As discussed, much of the literature on interaction and game experience has tended to focus on positive and fun experience. While emerging work in interaction and video games also identifies "negative" experience as being crucial to provide deeper experience and emotions, discussions are either cursory, don't go far enough, and/or are about the temporary sensations used to set-up a rising action or conflict, and is typically followed by a more pleasurable resolution.

Like drama, literature, music, art and film, we have argued that experience from interaction or play with persuasive technology and games shouldn't exclusively be positive nor always have a happy resolved ending. Instead we are proposing that persuasive technology and games may aim to fulfill their purpose by evoking less fun positive experiences. For example, where the purpose is to provoke thought, provide a message or an experience on a particularly difficult, uncomfortable or unsettling subject or issue. In addition, we have argued that this experience needs to resonate or linger with the user/player post-encounter to encourage reflection and help change attitudes and behaviors in order to fulfill a persuasive purpose.

In order to frame experiences and emotions, we propose *serious experience* – being, thought-provoking *and* negative / uncomfortable / provoking – as well as *positive experience* (fun) are essential for informing the design repertoire for interaction and play in persuasive technology, and persuasive and serious games.

Finally, as it is important for serious experience to linger or resonate post-encounter for users/players in order to encourage reflection and fulfillment of persuasive purpose, we propose that designers, developers and practitioners are aware of the ethical concerns and content rating systems are in place in order to safeguard and protect players from harm.

We are currently exploring ways to utilize the idea of *serious experience* in simulations and games. One example is an analogue game to help participants learn about and understand the environmental conditions of the Great Barrier Reef. Typical scenarios are represented in the game mechanics and through play/interaction participants learn how sensitive ecosystems operate and the impacts humans have on them. As the game unfolds, participants become aware that their game-play/interaction is having a harmful effect on reef and marine life. Awareness and experience of having been complicit in its destruction is intended to resonate and linger on after the game has finished. The degree to which this experience lingers and how it may change behavior to fulfill a persuasive purpose will be investigated in planned studies. On-going work is currently being undertaken to transpose the Reef awareness analogue board game into a digital persuasive gaming simulation.

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