

Experience in Serious Games: Between Positive and Serious Experience

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Abstract. This paper discusses the conceptual, practical and ethical considerations towards the development of a framework of experience to inform design and assessment of serious games. Towards this, we review the literature on experience in interaction design, HCI, and games, and identify that the dominant focus for design has been, and still remains, on positive and fun experience. In contrast, anything other than positive experience is often loosely and sometimes inappropriately lumped together under the broad label “negative experience” which can imply bad experience and something to be avoided, while at the same time suggesting it’s not useful to design. While work in HCI and the games literature begins to address experience beyond positive, it just scratches the surface. By turning to drama, performance, 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 how it can be classed as entertainment, and argue for the more appropriate term “serious experience”. We propose that the focus for design of interaction and serious games should be an appropriate rhythm between positive and serious experience. Finally, we discuss the importance of the take-away message and positive and serious experience in serious games to linger or resonate post-encounter for players in order to encourage reflection and fulfill purpose, and describe associated ethical concerns and make recommendations for designers, evaluators and practitioners in order to safeguard players/users.

Keywords: Positive Experience, Negative Experience, Serious Experience, Framework, Design, Assessment, Linger, Resonate, Reflection.

1 Introduction

The term serious games encapsulates or frames an array of technologies, platforms, applications and environments that can be identified along a continuum from video games through simulation, to interactive art, mixed reality/media and experiential environments [45]. So identifying a framework or categories of user/player experience in serious games needs to be broad enough to be applicable to and encompass the above.

The serious games community has gone to great lengths to argue that while serious games are for serious purposes (learning, training, education, persuasion, informative, health, well-being, etc), they can also be fun and entertaining [50, 61, 69]. After all, it has been widely argued that positive fun and entertaining characteristics are intended to provide motivation for players to learn [38, 39]. Even further, arguing that fun *and* learning are inextricably linked [20, 46, 47] at least in childhood learning and development.

But what exactly is entertainment in serious games? Is it the same as entertainment in video games? Also, are there any other types of experience in serious games beyond entertainment?

In serious games there may not be a happy or resolved ending at all. Many serious games 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 in serious games may need to resonate or linger with the player after an encounter in order to encourage reflection and so in turn fulfill a serious games' purpose.

While work in the games literature and HCI has long acknowledged experience beyond positive and fun, this largely comes under the broad term of "negative experience" or "negative emotion" [13, 44, 29, 60]. While this work makes great strides in drawing our attention to experience beyond the positive, it only scratches the surface of the possible rich and deep experiences and emotions from interaction, game and serious games play. Furthermore, the term negative experience or emotion suggests the opposite of "positive" which may, intentionally or not, imply bad experience and suggest it is not useful to design. More recently, HCI and CHI has opened shop in a big way on experiences beyond positive and fun as elegantly captured in Benford et al.'s [4] work on "uncomfortable interaction", and how they inform design for overall positive "cultural experience" from techniques in interactive art and drama with rising action followed by denouement.

There are many crossovers with this work and our own in serious games, interactive art and storytelling. However, there are also distinct differences. Most important is that experience beyond positive and fun doesn't have to be "uncomfortable". So while further developing the argument that experience beyond positive and fun is important and can inform design for "cultural experience", including everything under the broad term "uncomfortable" doesn't go far enough and appears to connect more to earlier arguments on "negative experience" or "negative emotion". We argue that as well as "uncomfortable interactions" or "negative experiences" that are beyond positive or fun, there is a further categorization that is neither exclusively positive nor uncomfortable/negative experience, but falls somewhere in-between. For example, interaction or play that is thought-provoking, informing, raises awareness on issues, or where the user/player takes pleasure from negative experience, previously described in interactive art as "pleasurable sense of unease" and "pleasurable thrill of danger" [11], in games as "positive negative experience" [28, 52] and in learning games as "pleasant level of frustration" [27]. This additional categorization of experience is *entertainment without being exclusively fun* and we argue is essential for informing the design repertoire, exposé/portrayal for "cultural experience" beyond "uncomfortable" and "negative" experience.

We propose the new term “serious experience” to frame a broad range of experiences and emotion from interaction/play that encompasses both the thought-provoking and positive/negative categorization and the uncomfortable and negative experience/emotion.

This paper discusses the conceptual, practical and ethical considerations towards the development of a framework of experience to inform design and assessment of serious games. Towards this, we first review the literature on experience in interaction, HCI, and games design, and identify limitations with this work. Next we turn to other media and art forms including drama, performance, literature, music, art, and film to show how these limitations can be addressed. We then propose that design of interaction and serious games should be an appropriate rhythm between positive experience and serious experience, and propose that experience in serious games should linger or resonate post-encounter for players in order to fulfill purpose. Finally, we discuss associated ethical concerns and make recommendations for designers, evaluators and practitioners in order to safeguard players.

2 Background Work: Experience in Play and Interaction

Experience is recognized as a key driver for commerce, retail, leisure and entertainment, etc. [58, 59]. As experience is relatable to everything lived, the appropriate framing and design for emergent experience in specific services, sectors and industries has become a competitive necessity. In interaction design for example, the term *user experience* is widely used to frame experience and emotions associated with product, appliance and interaction design – from both users’ and designers’ perspectives.

But what exactly is user experience? Much work attempts to shed light on the composition and foundational elements of user experience in interaction design. For over a decade in the design discipline of HCI, we have observed a shift in focus in our design and assessment approaches from being informed exclusively from a usability-centered functional and engineering perspective, towards a user experience-centered design perspective [e.g. 5, 26, 68]. This is demonstrated in proposed theories, levels, threads, frameworks and design research and thinking that emphasizes the pleasure [33], hedonic [24]; ludic [19], emotional [55], enchantment [49] and fun and enjoyment [5] qualities and value in interaction experience. However, while the notion of user experience has been widely adopted in HCI, we have struggled to reach a common understanding and consensus definition [e.g. 25, 36] demonstrating the multifarious and elusive nature of user experience. While there is little doubt that work on user experience 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 [66, 26]. 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].

Similarly, 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 [63] “Good games are fun. Fun games are what players want”. Fun is “central to the process of making good games” [15]. 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 [14]. While there have been some attempts that aim to take a closer look at experience in serious games, nonetheless this work focuses on positive experience [e.g. 53].

But what exactly is *fun*? Fun is an abstract and elusive concept that defies easy definition. The Oxford English dictionary [56] describes fun as “light-hearted pleasure or amusement”. According to Schell [64], “fun is pleasure with surprises” and Thomas Malone’s [38, 39] often cited work on intrinsic motivation - “what makes an activity fun or rewarding for its own sake rather than for the sake of some external reward” - identifies three broad categories: *challenge, fantasy and curiosity*, in an attempt to identify what makes computer games fun. Koster [35] argues that “designing for fun is all about making interactive products like games highly entertaining, engaging, and addictive”.

But does it always have to be fun? Or is fun too limiting a term, categorization or label that is not able to describe all potential experiences and emotion from gameplay and may potentially inhibit design and development of games?

2.1 Experience beyond Positive and Fun

For many in the games industry, the shaping of deep and powerful entertainment experiences and emotion, in addition to fun, has been and still is a main driver for design. Consider for example the goal Electronic Arts (EA) set for itself and announced to the world in the well-known advert in The LA Times (1984) and captured in the title “Can a computer game make you cry?” According to Bing Gordon, ex-long term exec of EA, we still haven’t reached a point where we can develop games that provide powerful and deep enough experiences and emotion to fulfill this goal. He argues that limitations in models of narrative and characters have something to do with this.

In an interview in Gamasutra [18], Ian Bogost, co-founder of Persuasive Games, similarly argues for the development of more powerful human experiences and emotions 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 [30] 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”. More generally, Seymour Papert proposed the idea of “hard fun” to describe a special kind of fun when words like “pleasure” and “fun” seem inappropriate or inadequate [57].

More recently, work in HCI has begun to look beyond positive experience as typified in Benford et al.’s [4] work that looks to drama to inform design of “uncomfortable interaction” and four primary forms of discomfort: visceral, cultural, control and intimate.

While the HCI community of ACM SIGCHI finally opens-up shop on experience other than positive, fun and aesthetic 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. Consider for example the claimed “comprehensive categorization of digital game experience” [60], that identifies two categories, out of nine, associated with “negative experience” (*negative affect*: frustration, disappointment, irritation, anger; *suspense*: challenge, tension, pressure, hope, anxiety, thrill). However, the title 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!”. 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 deep experiences and emotion beyond fun in games.

Looking to other media, performance, 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). In film, Grodal [23] has looked to film experience in an attempt to understand video game experience. Building on Zillmann’s [70] work on the psychology of suspense in drama and film, Klimmt et al [34] 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” [68] and in informing underlying foundational elements for experience and emotion in interaction and product design in influential texts [55, 48]. However, again the emphasis in this work has been on positive and fun experience, as for example captured in the term

“enchantment” to inform HCI, but which largely disregards the power of the three Vs to describe experience beyond positive [49]. While Norman [55] 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.

Interestingly, the three Vs were originally proposed as a potential candidate to inform HCI approaches for design and assessment of experience in games, simulations and virtual environment/reality², as well as being an alternative to considering the experience of presence - the dominant experience of the day [40 – 44]. While the three Vs experience continues to be adopted and applied to video games, again this work largely focuses on fun and pleasurable experience. For example, [15] identifies the three Vs as “corresponding” to his framework of fun in “Natural Funativity's Physical, Social, and Mental fun”; [65] adopt the three Vs to help talk about the fun and experience of playing a game; and [62] work directly corresponds to the three Vs to talk about categories of pleasure in games. 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 [41, 44].

Although often using similar technology to 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 [32]. For example, the artwork *Run Motherfucker Run* [54] repurposes a treadmill as a device for navigating an onscreen city, an experience that becomes uncomfortable when the participant realises they cannot stop the treadmill once it has begun. In *Pin Cushion* [67] 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* [31] uses a bio-feedback 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.

In her well-known GDC 2010 talk, Brenda Brathwaite [7] talks about the design process of her “works” within the Mechanic is the Message [8] series of non-digital games that aim to create an experience beyond fun and “capture and express difficult emotions with a games mechanic”. 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.

Our next examples take the idea of negative experience to the extreme by focusing on difficult and dark topics of rape and murder in analogue role-playing “games” in which participants take the role of offender or victim [28, 52]. In debriefing sessions, participants reported feeling extreme negative experiences and that some experiences continued after the game had finished. While it was not the sole reason for developing these games, the authors had fulfilled one purpose, to show that experience beyond the positive or fun can be created in games and there was a weakening of the protective frame of play that allows emotion and experience to “bleed” out from the game and influence the player outside the game [52].

While these examples put into question the idea of play and games - is it still correct to describe taking part as *play* and does the seriousness of the topic make it no longer a *game*? - they show that difficult topics can be designed in an emergent game, that powerful experiences and emotions are felt by participants, and that these experiences and emotions can linger or resonate after gameplay.

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” [22]. 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”. Arrasvuori et al. [2] see these experiences as acting to provide a negativity that, through contrast, makes subsequent positive experiences all the more intense.

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. We return to this discussion in a later section.

3 Serious Experience

As the term serious games encapsulates or frames an array of technologies, platforms, applications and environments that can be identified along a continuum from video games through simulation, to interactive art and mixed reality/media, and experiential environments [45], identifying a framework or categories of user/player experience in serious games needs to be broad enough to be applicable to and encompass the above.

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

Table 1. Experience and Emotion in Serious Games: Between Positive and Serious Experience

| Experience & Emotion in Serious Games | | |
|---------------------------------------|-------------------|--|
| Positive | Serious | |
| Fun | Thought-Provoking | Negative, Uncomfortable, Unpleasant, Provoking |
| | Positive-Negative | |

As identified above, the dominant focus for design in the HCI and games literature has been on positive and fun experience. In contrast, 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, previously described as “pleasurable sense of unease”, “pleasurable thrill of danger” [12], “positive negative experience” [28, 52] or “pleasant level of frustration” [27]. This categorization of experience is *entertaining without being exclusively fun*. The second category is “uncomfortable” and “negative experience”, as discussed above. These extreme experiences and emotions are disturbing, discomfoting and provoking, and in serious games the user/player unease or discomfort is used to provoke interpretative reflection.

We argue that serious experience, both thought-provoking *and* negative, uncomfortable and provoking are essential for informing design of interaction and play of “cultural experience” in serious games beyond positive and fun.

We acknowledge that an encounter with a serious 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 serious game as negative and unpleasant 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. Boyle and Connolly (2008) also identify the potential value of reversal theory to help explain the sometimes paradoxical emotions that players experience during gameplay and “the apparently contradictory statements of gamers that gaming is relaxing but also exciting”.

4 Ethics and Code of Practice in Serious Games

As discussed, 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 Discussion and Conclusion

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.

In the serious games community we have gone to great lengths to argue that while serious games are for serious purposes (learning, training, education, persuasion, informative, health, well-being, etc), they can also be fun and entertaining. After all, it has been widely argued, that positive fun and entertaining characteristics are intended to provide motivation for players to learn. Many serious games, however, aim to fulfill their purpose by evoking less positive experiences. In serious games there may not be a happy or resolved ending at all. 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 order to frame experiences and emotions, we propose *serious experience* (thought-provoking *and* negative / uncomfortable / provoking) as well as *positive experience* (fun) are essential for informing the design repertoire for interaction and play in serious games. We argue that design in serious games should create an appropriate blend or rhythm between positive and serious experience.

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

Notes

- ¹ ESA: Entertainment Software Association, US trade association for video games whose members include Atari, Electronic Arts, Microsoft, Square Enix et al.
- ² INQUISITIVE research project (1998-2002), UK EPSRC funded (GR/L53199), HCI Group, University of York & Rutherford Appleton Laboratories, UK.

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