

Spectrum: Exploring the Effects of Player Experience on Game Design

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ABSTRACT

Player Experience (PX) concerns how players think and feel when interacting with a game. Although it is intrinsic to all games, few design tools exist that enable designers to approach PX in a directed, intentional manner.

Drawing on existing design tools and experience-related theory focused on emotions, we present our tool Spectrum. Spectrum facilitates a PX-directed approach to game design that foregrounds intended player experience. Spectrum can also be used to critically probe people's conceptions of game experiences.

In evaluations of Spectrum with designers, while all were committed to the notion of PX, not everyone was able to translate from emotions into playable scenarios, particularly when those emotions were either visceral in nature or unusual within existing games. In evaluations with players, participants sometimes struggled to fit emotionally-specific language around their game experiences, but also stated that such reflections added post-hoc value to their experiences.

KEYWORDS

player experience, game design, design tools, experience design

INTRODUCTION

Accompanying the growing demand for games and the proliferation of the game making community, a plethora of game design textbooks are now available that seek to make transparent the practice of game design. From focusing on a game's formal elements (Rouse III 2010), all the way to fully-fledged experimentation (Brathwaite and Schreiber 2009), we find codified game design practice with different emphases and flavours.

One common trait that games have, irrespective of design process or genre, is that they are made to be played, that is, *experienced*. The domain concerned with these experiences is

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referred to as Player Experience (PX). Despite its universality, it is rarely examined as a central concern in the extant literature. Whenever it is addressed directly, it is often handled pragmatically and supported by little theory (e.g. Fullerton 2014). While this may equip the designer with practical techniques, it does not shed light on a basic understanding of PX.

Academically, the study of PX has been approached from a variety of perspectives, mirroring the diversity of its nature. Many scholars tackle the subject by focusing on a particular facet, such as immersion (Calleja 2011; Brown and Cairns 2004) and fun (Poels et al. 2007; Lazzaro 2004). While this approach results in rich knowledge within specific domains, it has the side-effect of fragmenting the available literature. This makes it difficult to juxtapose or compare the available research on PX, and as a result, hard to move from theory to practice in a consistent way.

In this paper, we report our findings on incorporating PX into the game design process in a directed, intentional manner. We propose a comprehensive PX-focused game design framework for game design, and examine its effects when put into practice. In addition, we provide ways for designers to focus on PX in specific tangible ways, while also providing vocabulary and structure for designers and researchers alike to reflect on process.

Our work draws on tried and tested methodologies from literature and other similar tools, and centres around a holistic PX-focused design framework intended to be as broadly usable as possible. To examine the consequences of our framework, we share the results of studies conducted with designers and users around its usage. By probing designers and users in relation to the framework, we investigate what PX is useful for, and how its influence is present on either side of the game design process: before and after a game is made.

BACKGROUND

PX is a multi-faceted subject that has been approached in various ways in both the game research and design practice communities. It is given prominence in game design literature, being frequently referenced as one of the main responsibilities of a game designer. In one such textbook, *Game Design Workshop*, Fullerton (2014) makes extensive use of the term “playcentric” to refer to game design practiced as player advocacy:

The role of the game designer is, first and foremost, to be an advocate for the player. The game designer must look at the world of games through the player’s eyes. [...] As a game designer, a large part of your role is to keep your concentration focused on the player experience and not allow yourself to be distracted by the other concerns of production. (p. 2)

Despite this emphasis, we see very little detail given to what being “focused on the player experience” actually entails for the designer. What guidance there is manifests in the form of (general) game design best practice, inadvertently suggesting that prioritising PX is intrinsic to good design, and requires little else besides creating games with some focus testing included.

While this approach to game design is not necessarily flawed or in need of change, it suggests a de facto method of tackling PX – namely, addressing it indirectly, if at all, since it emerges

as a consequence of game design. In contrast, our objective is to provide directed insight into the subject, and to allow designers to approach game design from a PX-focused perspective. This would not replace existing methodologies, but instead would add another tool to the game designer's toolkit.

In order to better understand how focusing on PX can improve game design, we must first establish what we refer to as "Player Experience". Given the diversity of the field, it may be difficult to pin down any single definition used by all beyond an apparently accepted nominal one. For the purposes of this project, we will define Player Experience as follows:

The emotional, behavioural and affective influence that a game has on its player through its gameplay.

In our definition, "gameplay" refers to "the gaming process [or interaction] of the player with the game." (Nacke et al. 2009, p. 1) This definition is not intended to separate or exclude any existing literature that deals with the subject, but rather helps us specify relevant subject matter and scope, as well as under-explored avenues of inquiry. With this in mind, we look to existing literature to see how PX matters are approached, both as part of and independently of game design.

THE SIGNIFICANCE OF THE PLAYER EXPERIENCE

An essential component of PX is the player. PX emerges when the Player and Game interact, so it would follow that we must have a good understanding of both. Nacke et al. (2009) made a clear distinction when discussing this relationship, stating that "playability is the evaluative process directed toward games, whereas Player Experience is directed toward players." Based on this, design textbooks that discuss the topic are more focused on Playability than PX. The techniques they provide are concerned with the design and material features of games, rather than specifically designing them for experiences.

Playability focuses on tangible elements such as the interface, difficulty, and other aspects of the game's design that affect how easy the game is to play or interact with. This can, and often does have an impact on the PX, but not all aspects of PX may be discussed with regards to a game's Playability. This is similarly true of the relationship between Usability and User Experience (UX). Indeed, we can find that certain methods have been adapted from UX to PX (Malone 1980; Jørgensen 2004).

While adaptation approaches provide us with ready-to-hand PX methods, they may lead to exclusion of certain types of experiences that may be desirable within a context of play. Games often intentionally provide "negative" experiences, i.e. ones that are best avoided in the quest for a "good" UX. For example, Nicole Lazzaro (2008) has written about the ubiquity of the emotional experience of *Fiero* in games. *Fiero* is a complex emotion that begins with intense frustration and ends with a profound feeling of triumph. *Fiero* is acceptable and frequently desirable in games, yet much less acceptable or desirable in productivity software. Thus we exercise caution in adapting methods from UX to PX, and vice versa, to avoid unintentionally limiting the range of appropriate experiences in either case.

THE SCOPE OF PLAYER EXPERIENCE

Within game studies, examinations of PX tend to deal with specific facets, such as Immersion, Engagement (Brown and Cairns 2004), Fun, and Flow (Poels et al. 2007). Each of the facets are broad qualities of PX that are associated with a generally positive experience that are usually pursued in the process of game design.

For the most part, these studies make little distinction between the various types of experiences, generally being inclusive of as many as possible. Some refer specifically to emotions ranging from *Enjoyment* and *Control*, to *Suspense* and more general *Negative affect* (Poels et al. 2007), while others discuss their subject matter without focusing on specific types of experiences beyond players exhibiting some level of interest or empathy with what they are interacting with (Brown and Cairns 2004).

We can see this trend exhibited similarly by various game titles that use a broader range of experiences than one might find in software meant for productivity. *Amnesia: the Dark Descent* is one such example, which makes use of fear and calm as a strong contrast over the course of gameplay. At the peak of a player's experience the game is threatening and frightening, but the excitement is broken up with periods of calm, safe environments. Similarly, the puzzle platformer *VVVVVV* uses simple mechanics with punishingly hard level design to provide a game that is easy to learn, but frustrating to master.

It is true that there exist plenty of games that are designed to be a pleasant and easy-going experience, much like software that adheres to UX design principles to promote ease of use. Based on this, however, if we fail to take into consideration experiences that are less than typical or even expected, we immediately restrict our understanding of PX when researching or designing for it.

EXISTING PX DESIGN AND ANALYSIS APPROACHES

Numerous methods and models exist that shed light on PX in relation to design and analysis. Fullerton (2014) delineates the basic design process in four main steps: conceptualization, prototyping, testing, and readjustment. This structure is corroborated by other authors (Brathwaite and Schreiber 2009; Rollings and Morris 2004), and although differing methodologies and structures exist, they tend to rely on the same initial phase of conceptualization (Rogers 2010; Salen and Zimmerman 2004). Various books also suggest making use of existing games to inspire future work (Fullerton 2014; Rouse III 2010). This suggests two major design phases that make sense to consider with regards to PX; namely, conceptualization and analysis.

In the case of game analysis, Sweetser and Wyeth (2005) tackle the subject in a very structured way. In their GameFlow model, they provide a set of heuristics to gauge how well a game may foster Flow in its players. While it is effective at pointing out factors in a game's design choices that would affect Flow, it also suggests that certain kinds of experiences, such as frustration or confusion, are less ideal than others when included as part of a game.

Conversely, Calleja's Player Involvement model (2011) suggests a more freeform approach, by providing categories with which to deconstruct a game's experience within the context of player involvement and incorporation. The model is more descriptive than prescriptive, as opposed to GameFlow, allowing a degree of adaptation to the game that is being discussed.

This flexibility is explored in greater detail by Hagen (2011) in his developer interviews, who discusses PX-related design with professional game designers. In it, he shows how the various abstract concepts are applied in a more practical way. The designers often rely on their own personal experiences, which Hagen refers to as *Autobiographical Design* (p. 3), which is very difficult to accommodate within any formal, strictly delineated framework.

Amongst the more design-oriented approaches, a popular technique is to make use of flash cards. VNA cards (Kultima et al. 2008), the Layers Design Tool (Tajè 2007), and PLEX cards (Lucero and Arrasvuori 2013) all concern variations of flash cards, each of which corresponds to a single term, or in the latter two cases, a single type of experience. In this way, the cards act as seeds for idea generation, while allowing designers creative freedom when interpreting and using the suggestions of the cards themselves. While the techniques used in both the Layers Design Tool and the PLEX cards are good examples of PX design tools, the set of experience types included is quite limited.

RESEARCH QUESTIONS

Building on our aforementioned definition of PX, and reflecting on the existing PX-related research and design approaches, we now clarify our research questions as follows:

- What qualities might a Player Experience-focused design framework need to be theoretically robust and insightful, while supporting flexible use?
- What happens when frameworks like these are embedded within the game design or analysis process?

DESIGN AND IMPLEMENTATION

To answer the aforementioned questions, we adopted a Design Research approach. We avoided direct use of player interviews for building our model, out of concern that player anecdotes would only reflect player experiences that already exist. Instead, we used a bottom-up approach to design our model, establishing its contents by drawing on existing theoretical sources and frameworks.

Our decision-making process for determining what to include in our model was driven by the following three design principles:

1. Focus on players' emotional and affective responses.
2. Be as inclusive of different experiences as possible.
3. Provide a structure for, but allow flexibility in its use.

These principles also highlight certain points of comparison between the different methodologies we have dealt with thus far. Comparing Calleja's Involvement model (2011) to Sweetser and Wyeth's GameFlow model (2005), we can see that while both are effective,

open-ended suggestions provide greater flexibility than specific, quantifiable rules. Prompting the user with simple concepts as opposed to explaining them at length allows users to project their own ideas and opinions, and avoids disagreements with what is suggested.

This is carried out effectively in the cases of both the Layers Design Tool and the PLEX cards, which provide each individual element as a single-word prompt on a card. This methodology is corroborated by Halskov and Dalsgaard (2007), who described such "Inspiration Cards" acting as "anchors" that "clearly guided the processes of ideation and negotiation." (p. 203) This is ideal for our needs, in order to best encourage designers to anchor their ideas on the various experiences found in the model.

We therefore decided that the model would consist of a list of experience types designed to be as exhaustive as possible. This would serve the purposes of both design and analysis similarly to Nicole Lazzaro's Fun Keys model (2008). In the case of design, the individual terms would serve as suggestions to designers to consider in their game concepts, while in the case of analysis, they would act as a taxonomy of emotions possibly found within gameplay.

BUILDING THE PLAYER EXPERIENCE MODEL

In constructing our PX model, we looked to both the PLEX cards and Lazzaro's Fun Keys. While neither presents a complete model of PX, the experience types that they do contain have been well documented and grounded in player studies. To supplement the list resulting from these sources, as well as corroborate the experience types found in other models, we also made use of the complete lists of emotions included in the work of McManus and Furnham (2010) and of Morgan and Heise (1988). Combining these lists with existing ones in PX literature (Lazzaro 2008; Poels et al. 2007; Korhonen et al. 2009) resulted in a total of 178 terms. These were then grouped together wherever there were similar or identical terms, to reduce repetition and redundancy.

During the process of grouping and simplification, dictionary definitions were sometimes eschewed in favour of our own interpretation. This was because a great deal of the terms were defined by dictionaries to have identical meanings, which would have reduced the model's size far too much. This ultimately led to 70 separate groups of terms, each of which could be summarized in a single word. The groups were also seen to follow a pattern of opposites, as suggested by Posner et al's Circumplex model of Affect (2005).

After grouping and pairing, the model was completed as shown in Table 1.

IMPLEMENTING THE CARDS

With the model completed, the cards could then be designed. To this end, we took inspiration from the PLEX cards, noting the reflections of their designers.

PLEX cards consist of a single experience type on each card, accompanied by two illustrations and a detailed description of the experience it corresponds to. In evaluations of their use, participants expressed that these details carried meanings that either diverged or outright clashed with their own ideas of what the terms meant. This resulted in confusion for participants, and became a point of contention in the creative process. From a different

Pleasure	Grief	Expression	Shame
Bliss	Anger	Inspiration	Difficulty
Elevation	Depression	Charm	Heartbreak
Surprise	Pain	Eroticism	Dejection
Joy	Sadness	Love	Disgust
Excitement	Agitation	Passion	Melancholy
Amazement	Terror	Naches	Schadenfreude
Captivation	Fear	Generosity	Cruelty
Curiosity	Anxiety	Gratitude	Envy
Triumph	Frustration	Accomplishment	Overwhelmed
Relief	Boredom	Confidence	Apprehension
Relaxation	Joylessness	Pride	Remorse
Satisfaction	Disappointment	Creativity	Simulation
Amusement	Embarrassment	Subversion	Submission
Humour	Ridicule	Privacy	Publicity
Fellowship	Vulnerability	Control	Spontaneity
Sympathy	Resentment	Sensation	Suffering
Fantasy	Madness		

Table 1: The model’s complete taxonomy of player experience types.

perspective, the details on the PLEX cards led to the terms being front-loaded with context that was not equally relevant to all of its users. Experiences and emotions are intensely subjective, and it is difficult for people to agree on what any given experience entails. In light of this, we decided to keep the design of our cards strictly minimalist, inviting users to supply their own interpretations.

Further to this, we decided to leverage the double-sided quality of cards to highlight and reinforce relationships between opposing emotions. Relating back to Lazzaro’s observations regarding Fiero (2008), opposing experiences can make for complex emotional experiences: Frustration eventually leads to a more intense feeling of Triumph, but if either Frustration or Triumph is not experienced, then Fiero is not experienced. Thus we placed opposing emotions on each side of a single card, with one card therefore corresponding to a pair of experiences.

When finalized, the cards were grayscale, with bold lettering to make them as clear and legible as possible. We considered using colour to make the cards distinguishable from one another, but ultimately decided against this since colours could potentially carry semantic context that might distract or overly influence player interpretation of the cards (Green with Jealousy, Red with Rage, etc.).

The cards present synonyms from the experience groups that they represent, to provide additional terms that were too similar to warrant a new card, but different enough to potentially spark new ideas. The cards also list related experiences present in the deck, to give users an optional way to explore the model from one card to another.

The model was named **SPECTrum**, which stands for **S**imple **P**layer **E**xperience **C**ards¹, but also refers to the spectrum of emotions that it encompasses. This is mainly intended for clarity when referring to the cards as well as any supporting literature intended for its use.

Accompanying the cards, we designed a small booklet to provide supplementary content for the tool. While the cards are simple enough that they can be used on their own, the booklet is intended to provide optional background information regarding definitions of the words, as well as how to use the cards. Since this information is not printed directly on the cards, users can ignore the information provided in the booklet if they so wish.

HOW TO USE SPECTRUM

We now address how to use Spectrum within the game design process. As a design tool, its similarities to the tools it is based on, namely VNA and PLEX, can logically extend to the way that it is applied. Drawing, mixing up, or otherwise handling the cards to randomly suggest concepts as part of the brainstorming process are at the core of Spectrum's design. Participants can opt to select cards entirely at random, or collaborate by putting cards together to build an experiential "palette" of sorts.

Ultimately, Spectrum acts as a facilitator, suggesting possible avenues of discussion in the form of single, or a combination of experience types on the different cards. For example, participants may draw the cards Difficulty, Spontaneity and Surprise (Figure 1). Regardless of how the cards are chosen during use, designers would use the experiences to inform the conceptualization process, which can also be approached in several ways.

We acknowledge that a possible point of tension in the model is the need to maximize both comprehensiveness and flexibility. It may seem that combining the two could result in compromising the integrity of the model, depending on how users choose to interpret the individual experience types. While it is true that subjectivity in PX is inevitable and will affect how the model is applied, our concerns regarding comprehensiveness apply to the construction – and possible limits – of the model. The ways in which the experiences are ultimately interpreted is of no detriment of the model's intended use, since its ultimate goal is to facilitate the incorporation of PX into game design processes in a deliberate, intentional way.

As an analytical tool, Spectrum can be used as a taxonomy or dictionary of terms that a game's experience can be described with. Since each term is atomic, it allows the user to discuss the experience in the simplest possible terms.

As an example, we may take a game that we have previously mentioned, *Amnesia*: we can describe the PX it provides by using the terms *Terror* and *Anxiety* in the peaks of gameplay, which are broken up by periods of *Relief* and *Relaxation* (synonymous with *Calm*) between the chapters of the story. With the experience deconstructed in this way, it is easier to discuss the game's design elements with respect to it, and better understand how the experiences are promoted by the mechanics and aesthetics.

EVALUATING SPECTRUM

With the model and tool complete, we turned our efforts to evaluation of Spectrum in practice. Our aim was not only to validate the model's usefulness, but to explore the effects and

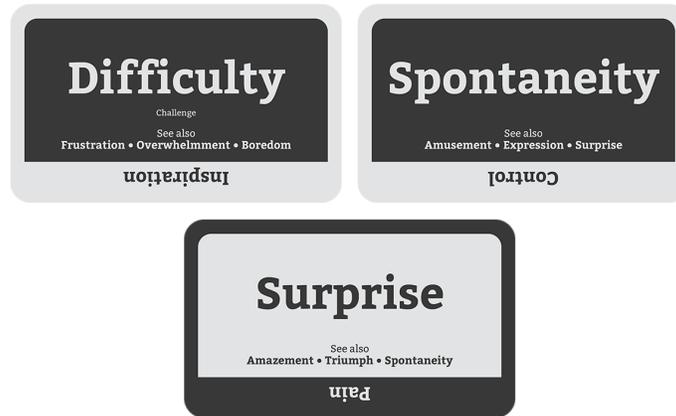


Figure 1: Example of a combination of experiences while using Spectrum cards.

experiences of the tool on designers and players. The Spectrum model acts as a platform for this research to take place, and get our participants to think critically about PX.

DESIGNER STUDY

We conducted workshops with designers using Spectrum as a design tool to explore their reactions and thoughts when encouraged to apply PX as a primary driving force of the creative process. The participants varied broadly in terms of their design experience as well as academic backgrounds. All of them had a background in making games, where some had already designed and published their own board games, while others were hobbyists or amateurs. Around half of the participants had a background in game academia.

We asked our designers to focus on the ideation of analogue games, as opposed to digital games. This decision was driven by two main reasons. Although we have made exclusive reference to digital games as examples thus far, analogue games such as board and card games are more than capable of eliciting very real emotional responses in their players. Furthermore, and usefully for the purpose of our experiment, analogue games are easier to deconstruct and discuss mechanically. They are also much simpler to design in a complete way in a shorter span of time; both in terms of concept as well as mechanics.

Grounded theory was applied when handling the designer interviews to allow for as many possible outcomes as possible; both in terms of the tool's uses, as well as the participants' thoughts and opinions following the workshop. Our aim was not to validate any particular theory, or even the tool itself, but to see the actual outcomes of the experiment.

The workshops were conducted with a sample size of 3 groups, each with 4 participants. The participants were grouped in twos and provided with sets of cards to use. After an introduction to the tool, each group was given 40 minutes to create as many different game ideas as possible. Their ideas were then discussed, following which an interview was held discussing the following points:

- Discussing the games they made, starting with the ones they polished.
- Description of the process they adopted while using Spectrum.

- Discussion of how the process compared to usual brainstorming techniques.
- Discussing the significance of Player Experience to them as designers.
- Taking suggestions of how else they would use the cards.

Reception of the tool was largely positive and also productive: teams managed to come up with an average of four ideas each. The games made during the workshop ranged from typical board and card games to more experimental ideas such as social and player-focused games, or more physically involved games (akin to hide and seek, for example). While working, participants used some of the games suggested in the accompanying booklet, with minor variations.

Post our grounded theory analysis, we observed two major design patterns emerging, which focused on the games' mechanics and themes respectively.

In the case of the mechanics, designers focused primarily on how the experiences reflected on the cards directly inspired a mechanic of play. In these situations, cards were interpreted very literally in terms of game elements.

Some of the cards were *Confidence* and *Privacy*, so you have to keep your cards private. – D1

In the case of themes, the cards were used to inspire the dynamics, aesthetics or narrative of the game above all else. These elements manifested as a result of some form of internalization or synthesis between the emotions presented by the tool, and the personal experiences of the designers in question.

We had *Melancholy*, *Sadness*, *Surprise* and *Sensation*...So basically, we kind of thought of routine and how to break it and come out of that. – D2

In both of these approaches, it is interesting to note that neither references the experiences directly, but rather sets them aside in favour of more actionable, tangible design elements following a period of internalization. This is related to Hagen's findings (2011), wherein the experiences guide the creative process, but the language itself is grounded in the game's formal elements.

Some participants stated that they never focus on the experience during their usual design process, while others explained the role of PX in their overall process, describing it as being subsumed into various other aspects of the game concept.

I shifted between thinking about the cards as maybe the narrative stuff, or the... Who's gonna play it; like for example, if it was *Love* and *Relaxation* may be a game that couples will be playing. So it shifted from mechanics, to narrative, to the environment in which it would be played. – D3

This was further corroborated in the way participants described moving on from the initial experience provided by the cards, abandoning it fairly early on once an idea emerged.

Once we'd come up with a game idea, we started to ignore the cards and iterate on the previous idea, and build up. So [the cards] created the idea, and from then on these didn't make a difference any more. – D4

This process seemed to be automatic and was not done with any specific intent. While some tended to prefer focusing on either mechanics or themes, some would settle on whichever suited the experiences best. This might indicate that designers do not feel equipped to incorporate experiences directly into their process, instead preferring to find relationships between the abstract experiences and some kind of idea or external inspiration.

When discussing the influence of PX on game design, participants agreed that it is an important factor to consider. However, when discussing the subject further these experiences were often abstracted, participants explaining that games should be “fun,” “enjoyable,” and other similar generalized terms. Only after being encouraged to elaborate did they use terms similar to those in the Spectrum model. This implies that designers' acknowledgment of the player experience can be mainly superficial, much like textbooks that otherwise emphasize its importance. It also indicates a lack of appropriate vocabulary for Player Experience, since they were able to elaborate on their initial statements when pressed for detail.

Despite this common trend, there was some controversy when the interview moved on to the notions of implementation and actualization of the player experiences during gameplay. Various arguments were brought up against games inspiring more visceral experiences, such as *Terror* and *Love*, particularly when discussing analogue games like board and card games. Amongst these arguments, participants brought up freedom of choice and a lack of vivid imagery as possible hindrances to achieving certain player experiences as intended.

A board game, a traditional game, I think is very difficult to do that unless you are in complete control of what happens[...]If it's a video game, by all means, where you're in complete control. – D5

This observation is true in the case of some games, mainly those that make extensive use of cutscenes. However, this brings with it the strong implication that in order to design for evocative experiences, games must be brought closer to less interactive media, such as movies.

This attitude is prevalent in the gaming industry, where moving images are valued greatly as an important part for the players experience (Nutt 2013; Corriea 2013). Although moving images may be better suited to evoking more powerful reactions in the player, this does not necessarily preclude the possibility of analogue games creating equally potent, albeit less visceral responses.

The discussion ultimately led to two main observations brought up regarding PX in game design, particularly with regards to the role of the player in their own experience and what constitutes an intended player experience.

Some argued that certain emotions in games are basic and common across all games, such as experiences of competitiveness or satisfaction, making them a redundant factor in design.

Furthermore, anything beyond that, such as a player getting angry at a series of unfortunate events, is either the fault of the player, or the result of bad game design.

If you are playing with a group that gets angry at you at the actions you have done in a game, then you need new board game players[...]If that anger is as a result of the game, then that's bad game design. – D6

You play to win, and when you play to win, it's competitive. Because of that, you could get angry — it's like that with any game. – D7

This was indicative of a dismissive, restricted mentality regarding PX. It implies that the vast majority of supposedly “unusual” experiences fall outside the scope of gameplay experience, and are attributed to the player's hangups or a failure of design. In other words, if the game should be played in a certain way, then it should be *enjoyed* for it.

This is grounded in the concept of the magic circle (Consalvo 2009), drawing a dividing line between the game and the real world. This implies that the player's personality and background are extrinsic to the gameplay, since their predispositions influence the ultimate experience. There is indeed a valuable distinction to be made between the influences of the game and the player on the emergent experience when the two interact, but this interpretation devalues the intricacies that come about when the two are brought together.

This point of view is related to the arguments put forward regarding control and narration in games, wherein the need for a player is effectively mitigated; relegated instead to the level of a viewer or reader in the case of a movie or book. Since analogue games require more of a substantial input on behalf of the player, it would follow that the experiences resulting from them are held in a lesser regard.

In a similar way, some also expressed the impossibility of certain emotions being achieved by games, since the emotions are so primal and visceral.

It's so difficult to bring out *Terror*, dread, in a board game...It's...I'd say it's almost impossible[...] On a board, I don't think it can be done. Not *true* dread.
– D6

Herein lies the crux of the argument that the disagreements stemmed from: that any given experience is immutable and can only exist in a single state. This likely leads to a strict, all-or-nothing approach, where any experience that is even slightly short of what can be considered, say, “*true* dread” is therefore a different experience entirely.

Given the subjective nature of experience, this approach is revealing of how designing for PX may seem improbable, or downright impossible to some. It is unlikely for any game to elicit the exact same emotion from every player, but to some designers it may seem as though designing for PX means achieving just this.

Another designer pointed out a different approach, however:

The most we can do, as designers, is set up a situation where it is more likely to evoke a certain feeling. – D6

This succinctly sums up what would be a constructive approach towards designing for PX, i.e. acknowledging the subjectivity of experience. Players will seek out those experiences that are relevant to them first and foremost based on their preferences.

Rather than discussing what constitutes a positive or negative experience, it may be more worthwhile for designers to focus on what is more or less relevant to their target audience instead. Understanding and appreciating the part that their own players have on the resultant player experience is just as valuable as discussing a game's constituent parts, and offers greater nuance when discussing the subject.

PLAYER STUDY

We were additionally interested in how players related to the components of the Spectrum model. Thus we devised a simple online survey, in which respondents were encouraged to share their personal gameplay experiences as related to experiences from the Spectrum model. The survey had a total of 87 completed responses. Of the 87 respondents, over 60 (i.e. a third) managed to answer five or more of the experience types they were asked to discuss. 57 of the respondents also answered the reflective question at the end of the survey.

The findings from this survey corroborated the findings of the design evaluation. Players were similarly challenged when directly faced with the subject, struggling to relate their past gameplay experiences to the individual experience types within the Spectrum model.

Although several participants made direct mention of this difficulty in their submitted survey, many also stated that it gave value to their experiences retrospectively. Recalling experiences specifically as listed in the framework is difficult since they are generally subsumed into the broader gameplay experience, which is ultimately either enjoyed, or disliked.

This implies that even if certain experiences seem quite unusual or ephemeral, or if players do not notice them directly, they can still be present and play an integral role. It is therefore essential for us, as designers, to acknowledge their importance in the relationship between designer and game, and subsequently between game and player.

CONCLUSION

Player Experience is a subject that, while quite diverse in academia, needs to be approached more as a way of experimentation, exploring games and seeing them from another perspective. Within game design, emphasis is usually given to tangible, measurable methodologies which, due to the subject matter's ambiguous nature, can only get us so far.

Given the relative infancy of PX as a subject, this is to be expected; certain foundations should ideally be established prior to branching out into more experimental avenues of the topic. However, we can see the side effects when put into practice: there is a clear gap in the way we deal with PX, which causes a disconnect between the game designers and players. We must address this gap, and provide the necessary information for designers to be better equipped to understand the significance of PX to their craft.

As we have argued, PX is a broad and subtle aspect of games. It is both affected by every element of a game's design, while also exerting influence over every element of a game's design. It is what motivates a player to interact with a game, but is nearly imperceptible without deliberate scrutiny.

Player experiences can be esoteric and difficult to directly translate into interactions, thus we understand why many designers choose to design around mechanics, dynamics, and aesthetics. More generally, game design best practice is rife with references to generic PX goals, such as pursuing concepts that are "fun" and "enjoyable", while avoiding ones that are "boring". Yet for designers, being able to navigate PX in a nuanced manner is a valuable asset. By using Spectrum, they may inquire into different types of experiences that they may not have considered, but which could be ideal for certain demographics.

Through a combination of existing techniques and the introduction of new ones, we constructed a comprehensive framework of player experience that incorporates as many of these experiences as possible. This was intended to facilitate designers to take PX into consideration as part of their design process. In our experiments, the model was effectively applied in both the design and analysis of games, and offered insight into designers' and players' views on the topic as well as how it affects their interactions with games.

These experiments revealed that designers can be held back from applying PX in an effective way. This restriction can be attributed to a form of circular logic based on their personal experience, or lack thereof. In simple terms, their reasoning was such that the lack of existing games designed for specific player experiences precludes the possibility of there ever being any. This was further enforced by the notion that designing a game for an experience was equivalent to guaranteeing that experience for every one of its players. This caused a very problematic situation that very quickly stifled the PX-based design process.

Although the Spectrum model was designed to accommodate the subjectivity of experiences, the workshops demonstrated that even the designers' self-imposed definitions of these emotions may be a limiting factor while they are using the tool. We can help designers to break out of this cycle by providing the right tools, while also informing them about how PX influences their craft and to use it in an effective way.

Spectrum is just one example of how we can break new ground in approaching PX, offering practical means with which to challenge old assumptions, as well as a vocabulary for analysis. In this paper we dealt with existing PX-related literature from a more design-oriented perspective. While the topic is extensive, rich and diverse, this diversity can be seen as a hindrance to most practitioners who are in need of practical techniques to apply the subject to their craft. PX is an essential aspect of games that should be acknowledged both in theory and in practice. By focusing on PX holistically and deliberately, and seeing how it can improve the way we make games, we may better understand its role and influence.

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ENDNOTES

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