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PHANTOM AFFORDANCES IN VIDEO GAMES

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Abstract

In this paper, I am looking for the common ground to judge video game's formal qualities, such as its interface, the rule system and game goals, which would include and explain both intentionally and unintentionally subversive games labeled as 'bad' and 'not games'. I start with two cases of games that subvert expectations to the degree when players actively refuse to recognize them as games. Such games have inspired a variety of research and critique, but there is surprisingly little agreement on what makes them "bad" or subversive, as opposed to typical genre-conforming violent games, which are supposed to be subversive or "bad" but rarely produce the same disruptive experience. Relying on existing analysis of subversive and violent games, I apply user-centered, goal-oriented approaches of UX design (Norman, 1998; Cooper, 2007) to games and complement this framework with a new category, 'phantom affordances': perceived formal properties of a game that actively afford an action but do not deliver the expected outcome. This category can be productively applied to describe and design subversions in games.

Keywords

Videogames; Computer Games; Interface; Phantom Affordances; Subversive Games

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ФАНТОМНЫЕ АФФОРДАНСЫ В ВИДЕОИГРАХ

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Аннотация

В данной работе автор ищет общий подход к оценке формальных качеств видеоигр (таких как интерфейс, система правил и игровые цели), который бы охватывал и объяснял как преднамеренно, так и непреднамеренно субверсивные игры, оцениваемые как "плохие" и " не игры". Автор начинает с двух примеров игр, которые подрывают ожидания до такой степени, что игроки активно отказываются воспринимать их как игровой продукт. Такие игры стали источником разнообразных исследований и критики, но при этом наблюдается удивительно мало согласия в отношении того, что делает их "плохими" или субверсивными, в отличие от типичных жанровых игр с применением насилия, которые создавались как субверсивные или "плохие", но редко порождали такой же деструктивный опыт. Опираясь на существующий анализ субверсивных и агрессивных игр, автор применяет ориентированные на пользователя, целевые подходы к UX-дизайну (Norman, 1998; Cooper, 2007) к играм и дополняет эту структуру новой категорией "фантомных аффордансов ": воспринимаемых формальных свойств игры, которые активно позволяют действие, но не приносят ожидаемого результата. Эта категория может быть эффективно применена для описания и проектирования субверсий в играх.

Ключевые слова

Видеоигры; компьютерные игры; интерфейс; фантомные аффордансы; субверсивные игры

"BAD GAMES": EXPECTATIONS AND REALITY

What makes a game good? A renowned game designer Wolfgang Kramer starts his short but influential article on this question with the exclamation: "Games are a matter of taste!" (Kramer, [2010] 2015, 84) before listing most important design qualities of good games. He also warns that even good games are not necessarily successful (Kramer, [2000] 2015, 85). Carlo Fabricatore, an engineer and a researcher of human-computer interaction, begins with customer satisfaction (Fabricatore 2007) and arrives at meaning-making during play (Fabricatore et al, 2019) to evaluate the quality of games. These, and many other researchers put their analytical and practical knowledge into the definition of a good game but pay little attention to its opposite, which is, a bad game. In this paper, I propose to take a closer look at the games which are not just disliked, but actively perceived as "bad".

"Bad" games are not necessarily the games with the lowest score on Metacritic (see Greenwood-Ericksen, Poorman & Papp, 2013, on assessing video games on Metacritic), although they tend to sink lower in such ratings than they formally deserve (see Rudenko & Shirokov, 2018 for an example). For the purposes of this analysis, I turn to the games that subvert expectations to the degree when players literally start shouting: "This is not a game!" Such games have been in the focus of many studies, approached with different research toolkits, and while a good game is relatively easy to recognize, numerous "bad" games treat their players in very different ways.

Our first example is a 'serious' indie game *That Dragon, Cancer* (2016), which was met with negative reception from players (Felzman, 2017) even though its underlying message gained critical acclaim (Schott, 2017). In his talk "Aptum, Agency & Aggressions — Player Reactions to *That Dragon Cancer* given at the FROG Conference in 2017, Sebastian Felzman approaches the problem from the principles of game design. He suggests that "scripts", or certain scenarios in the game are broken: "A script can be defined as a learned set of actions that have to be used in combination for achieving a specific outcome, so you don't have to think about every single step" (Felzman, 2017). As a result, players never arrive at their goals no matter how much they try, and get irritated. This game mechanic is somehow similar to the infamous *Depression Quest* (2013) by Zoe Quinn (Quinn et al, 2013), as well as polarized critical assessment of the game.

The second case is *No Man's Sky* (2016), a much anticipated indie game which has set high expectations during its development but was met with negative backlash after its initial release. To explain low assessment

of the game, Shirokov and Rudenko conduct review mining on Youtube and already mentioned Metacritic. They apply the notion of 'de-monstration' to explain why the imaginary version of the game created by Youtube videos outperformed the first playable version in such a devastating manner for both players and developers. Authors come to the conclusion that promotional videos for the game "do not tell what is allowed in the game and what is not", so players hope for much interaction with demonstrated in-game objects, while many of these objects are rarely interactive or even present (Rudenko & Shirokov, 2018). To sum it up, the game world is perceived as brimming with opportunities which never materialize for players. Ironically, it still possesses most qualities of a good game from Kramer's list (originality, replayability, surprise, equal opportunity, winning chances, uniformity, quality of components and so on), while it definitely used to have problems with one of the last items on this list - its target group.

The described two approaches to assess game quality can be characterized as "game-centric" and "player-centric". As Fabricatore et al. demonstrate, human computer interaction can become a much needed common ground where these two approaches meet (Fabricatore et al., 2019). Human–computer interaction as a practice, embodied in principles of user experience design, can be particularly helpful for formal analysis when the problem cannot be located neither in the game nor in its players.

What made players call aforementioned games "not games"? In both cases players possessed enough ludic literacy: they knew what the game is, and their expectations were set long before starting. Players of *No Man's Sky* were already aware that most videos and presentations normally show a better version of a game. In the case of *This Dragon, Cancer*, as Schott writes, "There is no win state" and a player approaches the game with full knowledge of its circumstances (Schott, 2017, p. 8). On the level of common knowledge, it may be argued that these games were not fun enough, but Felzman rightfully notes that neither fun nor joy are mentioned in any accepted academic definition of a game (Felzmann, 2017). These games could also be called boring, but players generally tolerate inactivity and even periods of boredom in games if they see it as an important part of the game experience. Wolfgang Kramer names "reasonable waiting times" as the eighth criterion of a good game but also provides a counter-example of chess (Kramer [2000] 2015, 84).

The general question is: if the game is broken, what exactly is the problem? Where is the 'cancer'? Is it in the game rules, in its presentation, in expectations of players? It appears that players were provided with enough prior knowledge but got frustrated after they "put their hands on"

games and started interacting with them. So let us situate the problem in complex relationships between players and games through their interfaces.

GAMES AS SETS OF AFFORDANCES

Felzman claims that “the influence of new experiences on players is always mediated by players’ past experiences, values, beliefs and attitudes” (Felzman, 2017). This comes very close to general understanding of affordances according to Don Norman (Norman, 1988), who built his work on the theory of ecological perception by James and Mary Gibson. Affordances are perceived properties of objects in a specific environment (Gibson, 1986; Norman, 1988; Cooper, 2007). They afford actions, which means, invite users, or players, to interact with them to achieve a goal, or just to explore and experience the opportunities that the environment provides.

Are affordances real? They are perceived qualities by definition, which moves the debate about their ‘realness’ to the epistemology department of philosophy. Orthodox Marxist-Leninists would stress once again that "matter is the objective reality given to us in sensation" (Lenin [1908] 1977, p.46), which is generally debatable but still describes rather accurately how affordances work. We sense particular qualities in objects and then confirm their material presence in our version of reality by actively interacting with them. In Gibson’s own words, affordances belong neither to the world of matter nor to the world of mind: “For affordances as distinguished from values, the debate does not apply. Affordances are neither in the one world or the other inasmuch as the theory of two worlds is rejected” (Gibson, 1986, p. 137). This is why affordances cannot be “ethical”, as Miguel Sicart suggests, - ethics is abstract reasoning and assigning values to objects and events, and affordances are discovered by immediate perception and interaction before assigning values or labels. Finally, Gibson’s affordances are always relational, which makes them incompatible with virtue ethics of Sicart. As Gibson writes, “positive and negative affordances are properties of things taken with reference to an observer but not properties of the experiences of the observer” (Gibson, 1986, p. 137).

As Gibson writes, the theory of affordances “implies that the “values” and “meanings” of things in the environment can be directly perceived” (Gibson, 1986, p. 127). These “values” should not be understood as ethical values, but as understanding that comes before judgement. Sicart is prone to this mistake: in his version of affordances, they mostly are mentioned together with constraints, and are shaped by the rules of the game. He

writes, for example: “Rules create affordances and constraints for interaction”. (Sicart, p. 56). Rules cannot create affordances because they are executed, not visually perceived. Constraints do not belong to the theory of perception altogether - even in a more general Gibson’s theory, objects afford pleasure or displeasure, which he describes as positive and negative affordances (Gibson 1986, p. 137). Further, Sicart writes: “In the context of ethics, affordances have to be understood as those design elements that narrow any action the player can take” (p. 56). In ecological theory of perception, as well as in human-computer interaction, affordances always add to experience and enhance the opportunities to interact with the environment, not limit the user's options for it. If something cannot be done, it means - in the classical version of this theory, at least - that there has never been such an affordance. We will return to constraints in the final part of this paper.

There are differences in understanding of affordances by the Gibsons and Norman, and the clearest comparison between them can be found in the analytical summary by McGrenere and Ho (McGrenere and Ho, 2000).

Gibson’s Affordances	Norman’s Affordances
Offerings or action possibilities in the environment in relation to the action capabilities of an actor	Perceived properties that may or may not actually exist
(In natural environments, there are no designed clues or user guides — actors perceive and interpret the environment by interaction with it — A.S.)	Suggestions or clues as to how to use the properties
Independent of the actor’s experience, knowledge, culture or ability to perceive	Can be dependent on the experience, knowledge, or culture of the actor
Existence is binary — an affordance exists or it does not exist.	Can make an action difficult or easy

Table 1. Comparison of affordances as defined by Gibson and Norman (McGrenere and Ho, 2000)

To put it shortly, in our ‘natural’ physical environment, Gibsons’ ‘ecological’ theory of affordances is applicable. A digital environment accessed through a visual interface is better described by Norman’s theory of affordances. Also, in the usual understanding of the theory and especially in Norman’s version, affordances are either present or absent. If an affordance does not lead to goal completion, then it is simply not an affordance.

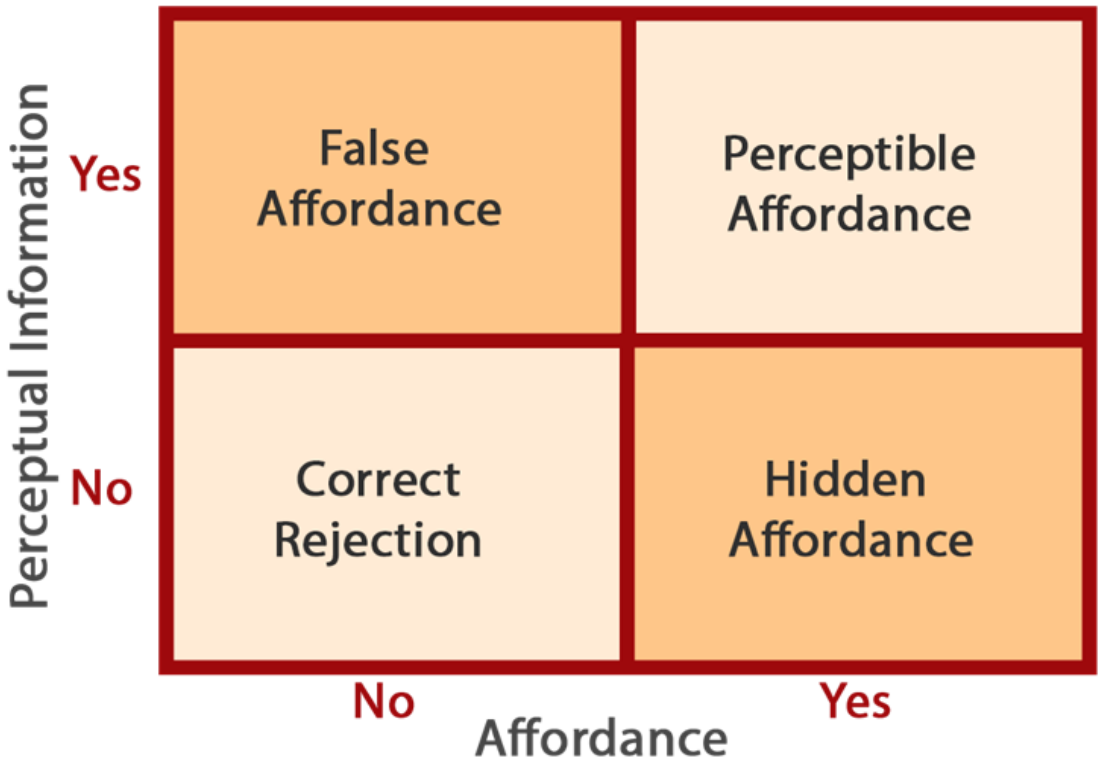

Table 2. False affordances are the same as no affordances, according to Gaver (1991), as quoted by Cardona-Rivera and Young (2013)

This is logical in software design: there is no reason to spend valuable resources on designing intentionally misleading elements, and unintentionally faulty interfaces normally get corrected in later versions. Still, we can find enough examples of deceptive affordances in wild nature: for example, seadevils have lures on their bodies to attract prey.

Theory of affordances in its both versions has been continuously and productively applied to digital games. Even games themselves, and the process of playing them, have been conceptualized as sets of specific affordances. One interesting example is the application of affordances to ludic narratives by Cardona-Rivera and Young (2013) (Cardona-Rivera and Young, 2013). Sometimes affordances are easily recognizable in

descriptions of game systems, even though the word “affordance” is not mentioned. Jesper Juul describes “fun” as pleasure from afforded interaction in “A Casual Revolution” (2009). “You can imagine the satisfaction of moving the final piece, of finishing the puzzle. The jigsaw begs you to complete it” (Juul 2009, p.2). Affordances are not mentioned here, although Juul obviously loves the jigsaw metaphor, and reuses it, together with a similar stock image from Fotolia, in another essay “The Magic Circle and the Puzzle Piece”, with a different moral attached to it.

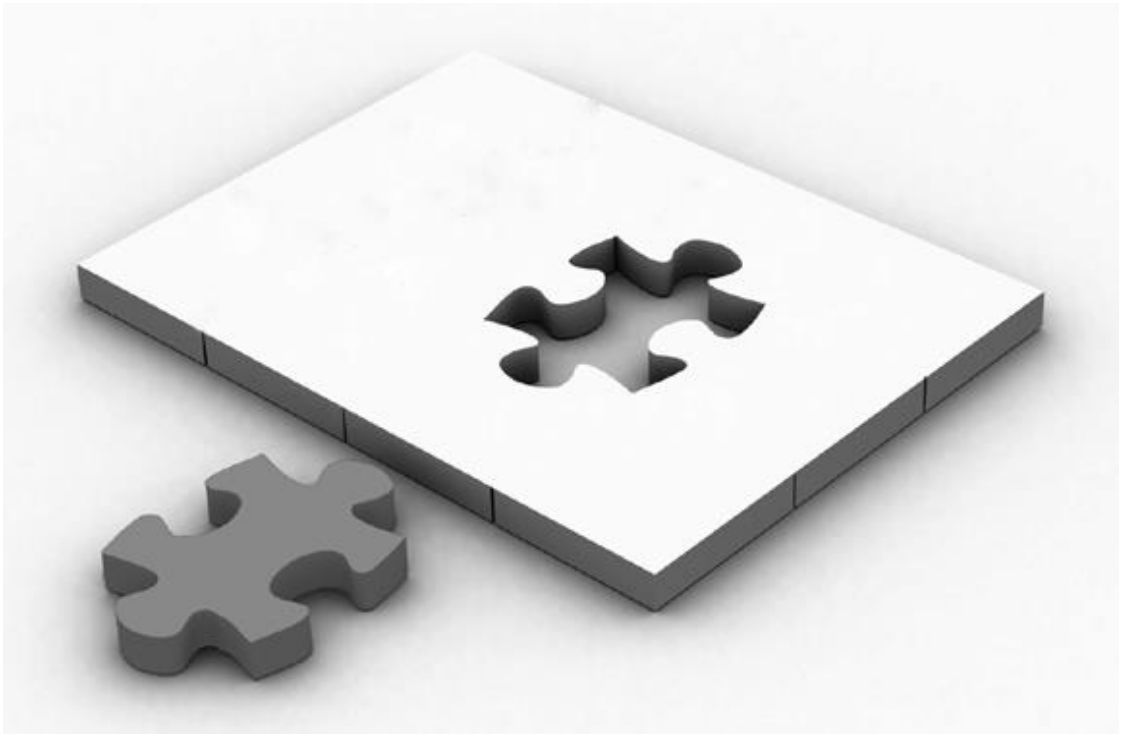

Figure 1. A jigsaw puzzle affording to put it in its right place. Source: Fotolia

Discussion on affordances in games is linked to definition of genre by a significant number of authors. Here I rely on meticulous literature review by Gareth Schott (Schott, 2017) on interfaces of first-person shooters and their interpretation by players and researchers. If we analyze first-person shooters as genres, they all share a specific generalized interface with game-specific affordances, such as the usual position of a weapon in the frame and the crosshair. A crosshair which turns red when it overlaps with the projection of an enemy is consistent with Linderoth’s example of ‘highlighting’ as affordance in the interface of a game (Linderoth, 2010). This is suggestive behavior of an element in the digital interface which affords a certain action in a virtual world but is not present, and that much helpful, in the real world.

From this perspective, a first-person shooter is not an educational murder simulator, even though it can be intentionally used as one. Yet again, mediated violence is not the same thing as violent media. This is also the perspective of Stephan Günzel on specific mediality of computer games. Günzel argues that, just as one can "play with things that are not meant to be played", games can also be used for non-ludic purposes: "One could certainly use it, for example, to train to kill people, as some people believe to be the case when video-game-playing youth commit school massacres" (Günzel, 2012, p. 34). Still, the question of skill transfer persists; as Schott demonstrates once again, weapons in games tend to be stylized representations of real-world guns with cardinally different affordances and enhanced effects. (Schott, 2015).

I have paid so much attention to violent games here because, theoretically, they make ideal candidates for 'bad' games: what could feel worse for a sane human than simulated killing? Games with such themes are supposed to be 'bad' and disruptive based on their graphic content and morally questionable goals, and yet, both research and common knowledge show that their effects are principally different. Most players see first-person shooters as sleek, familiar and well-adjusted sets of affordances organized to create a certain experience, visceral and sometimes shamelessly fun, but too specific to be projected back into the real world, which they simulate. In addition to that, a typical first-person shooter needs a major subversion in its design or narrative to problematize death and killing, to estrange it from the genre conventions and make it feel 'real' (Schott, 2015; 2017).

GAMES AS VIRTUAL ECOLOGIES

As we have seen from the example of first-person shooters, relationships between games and reality become particularly complicated in the case of training simulators and simulation games. This opens the never-ending debate about skills transfer in games, as well as gamification of education and personal development. No strong evidence has been found on positive effects of so-called brain-training games on healthy adults (Bainbridge & Mayer, 2017). Unfortunately, science has not confirmed personal experience of Jane McGonigal: games may make us better, based on our self-reports, but objective measurements are ambiguous at best, and actual reasons for improvement would lie outside of the game system, and probably include socialization, increased self-awareness and self-control, the placebo effect or more interesting and meaningful learning experience

in general. However positive, these factors are not game specific, and specific affordances of games may be to blame.

Naturally, playing games is usually more fun than doing tests and exercises. Simulators with a higher level of perceived realism, such as flight simulators or military-level shooting simulators, make better educational tools than books and slideshows, and even films. Still, Gibsons' version of ecological approach would deny skill transfer in digital simulators, and Norman's approach would only expect it in simulators with the most realistic interfaces — and empirical researchers generally agree on the latter (see Bainbridge & Mayer, 2017 for literature review). One methodologically reliable example is a series of studies of situation awareness in highly realistic large scale simulators to train situation awareness. These studies have been conducted in Norway by Saus et al. (2006) and Saus et al. (2010). Military cadets consistently demonstrated improvements in both self-reported and objective situational awareness, but also, the results have pointed at the importance of perceived realism. This means that affordances in the simulator should be as similar to affordances in real life as possible to enable learning.

So, current state of research suggests that skills learned from video games are domain specific and transferrable only in very detailed simulators. Skills gained exclusively within games can be applied in the same type of games but cannot improve performance in common real life situations. Bainbridge & Mayer put it in the following words: "If you learn to play chess in a park and then discover you can play chess on your computer, your prior knowledge of chess will benefit you, but that prior knowledge will not meaningfully benefit you in any other context" (Bainbridge & Mayer, 2017). In case of a digital game or even a training simulator, a virtual environment will offer a fixed set of specifically designed affordances which can only be operated in the ways prescribed by the system (say, a knight in chess can only make L or Γ moves), while in the real world, the opportunities are endless and continuously explored by ongoing situated cognition.

According to ecological approach, properties of objects which are learned in a certain environment belong to this environment only and in relation with this specific agent. This constitutes the main argument of Jonas Linderoth against James Paul Gee in his seminal talk "Why gamers don't learn more" (Linderoth, 2010). Linderoth argues against taking didactics of educational games literally and procedurally, as if doing something in the virtual world would unquestionably make us better at performing the represented task in the real world. If we continue this popular line of thought without acknowledging the specifics of both

worlds, we will find violent games and educational games at the same board or, at least, at different sides of the same coin.

The principal ecological difference between ludic and non-ludic affordances allows us to decouple mediated and real-world violence, although it becomes more difficult in cases when real-world violence is enabled through digital interfaces, such as in the case of military drone pilots. Anyway, there is still a higher level of general goal-setting: goals in games belong to their fictional world only, however violent those games are. An intent "to kill people" is predefined by basic moral choices (or lack thereof) of a sociopathic individual, and not by the means they employ to act on this intent.

	Perception mode	User goals	Designer's goals	Application to games
Visceral level: how a user wants to feel	Pre-conscious or subconscious immediate perception	Experience goals: have fun, feel cool, remain focused and in control	Designing for affect	Fun, joy, playfulness, other emotions derived from play (paideia)
Behavioral level: what a user wants to do	Operational perception through direct interaction	End goals: perform specific tasks with best possible outcomes	Designing for efficient and positive experience, enabling the user to achieve their operational goals	Functional interface of the game, interactions with in-game objects
Reflective level: who a user wants to be	Conscious consideration and meaningful reflection based on memory	Life goals: live the good life, be popular and respected by peers, prosper and succeed	Designing for long term relationships with the product, for conscious meaning-making, setting and achieving general life goals	The end goal of the game, the bigger meaning of the game for the player, its influence on their life and vision of self

Table 3. Three levels of cognitive processing for usability, based on Norman and Cooper (Cooper, 2007), and applied to games by the author of this paper

Similarly to ‘personas’, also a technique invented by Cooper, these levels are conventional and somehow schematic: perception itself is a much more complicated process. Still, this technique helps to address different kinds of needs and achieve overall better usability when designing a digital product. All three levels should be taken into account in UX design: “The user experience of a product or artifact, therefore, should ideally harmonize elements of visceral design and reflective design with a focus on behavioral design” (Cooper 2007, p. 91)

Here we are talking about games that produce disruptive or frustrating experiences. This framework allows us to decompose and analyze play as a meaningful, goal-oriented process of active perception and interaction with the game. Now we see that this process can fail at any step: sensation, interaction or meaning-making, and failures at one layer also affect the adjacent layers. The game that does not “spark joy” is no fun; the game that is too difficult to play can be too demanding for a wider audience. Finally, failing in the game at its reflective, meaning-making level can be threatening to our conception of self and even the world view, or 'objective reality', if you wish.

As long as we have a readymade three level model of affordances from Norman and Cooper, we can compare it to other models in game studies. Still, we do not find much overlapping, which could mean that this framework is actually a new development in game studies and design. There are, for example, canonic three frames for every game action offered by Juul (2009). Frame 1, which is “Desire to win”, belongs to our third layer of reflective goals. Frame 2, “The game as experience” could be associated with the affective first level and natural curiosity, but also, the second layer of behavioral goals. The third frame is questionable: how many of us feel a “desire of management of social situation” when they are playing a digital game? It could be associated with another reflected aim of being popular and respected by peers, which is also connected to “desire to win”, but why are Frame 1 and Frame 3 disconnected then? Isn’t the desire to “normalize” the situation fraught with negative consequences for the gaming community? Finally, where are fun and joy, the ultimate qualities of a good game? Their absence in formal analysis of games should be compensated by bringing in other ideas and disciplines, such as user experience and human-computer interaction.

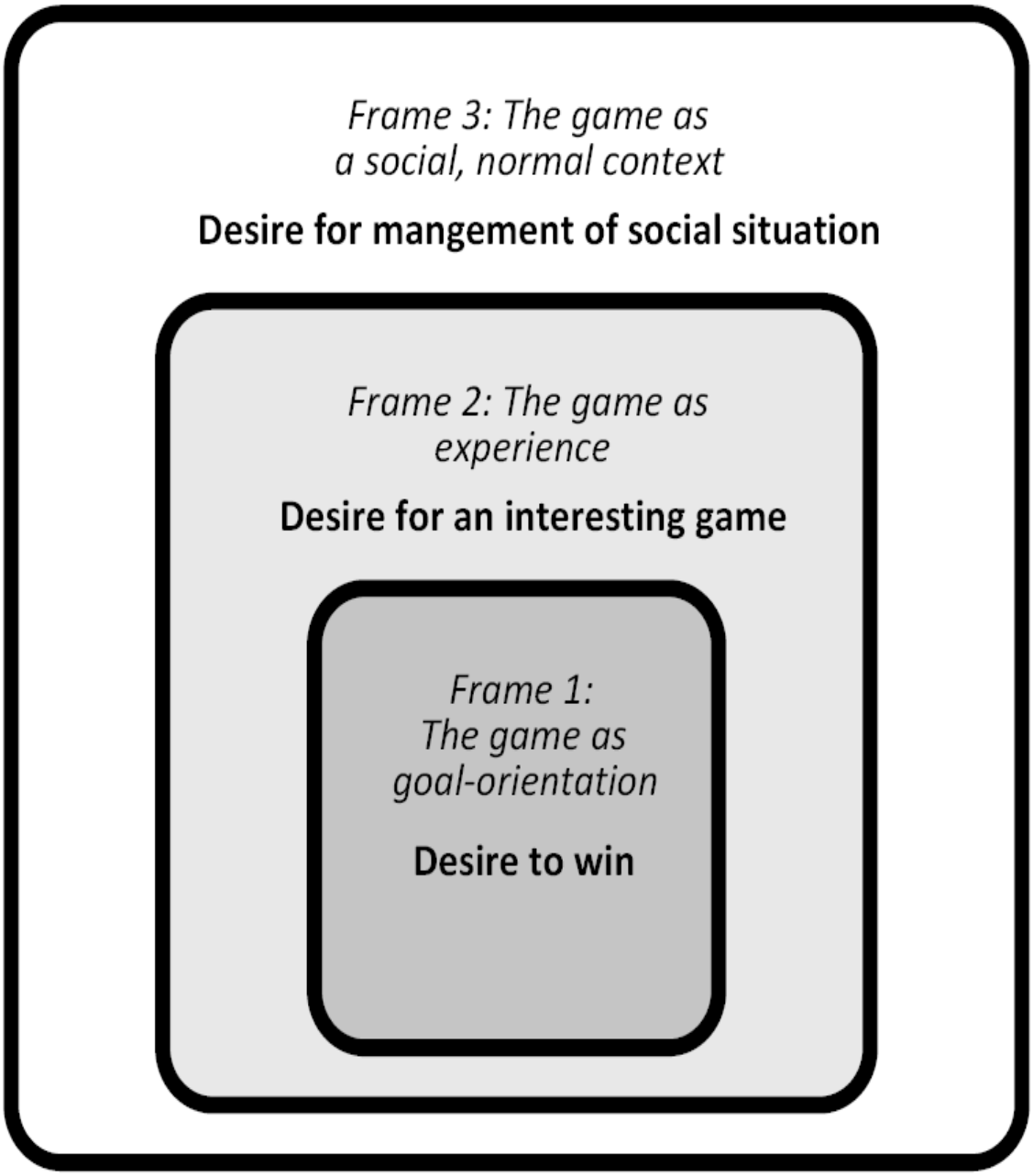

Figure 2. Three frames for every game action by Juul (2009)

"PLAYABLE UI" VS "PLAYFUL INTERFACES"

In the previous paragraph, I called for more active use of UX research and design practices in game studies and design. In this paragraph, I will point out at difficulties in marrying UX design and game design. In theory, as has been shown above, these are very similar occupations which deal with comparable tasks. Games can be seen as sets of affordances organized towards their end goals, quite similarly to systems design in general.

Similarly to any software solution in general, a digital game is also a goal-oriented activity (Salen & Zimmerman, 2004; Juul, 2008) and both game designers and UX designers design behaviors that are goal-oriented.

In practice, UX designers and game designers have different goals themselves, even when they are working on the same project. To a game designer, the game's goal should not be easily achieved, because it constitutes the challenge of the game. This approach is theoretically grounded and practically proven to an almost universal level both in game studies and game design: see, for example, Sicart: "A game is a device created with the intention of providing a user or users with a series of challenges and the tools to conquer those challenges, limiting them by a set of rules hardcoded in the design" (Sicart 2007, 46). In many cases, conquering game challenges may include dealing with a problematic game interface, because the total merit of a gamer is often seen as the sum of all difficulties mastered.

To the contrary, the mindset of a UX designer is usually shaped by human-centered design concept as prescribed by Don Norman, Alan Cooper and their followers. Their mission is to assist the diversity of users as much as possible in meeting their most important goals. Conceptually, it can clash with a game designer's mindset, which is, to create the most interesting challenge and leave it to players to overcome it.

The first potentially problematic situation is the application of game design principles where user experience design methods should be applied. Sometimes game designers extend this approach to game interfaces by creating 'playable UI". One example is *Toto Temple* (2015), a creative multiplayer indie game which enjoyed positive reception at game fairs but appeared to be a commercial failure. Among other original and distinct features, its designers introduced innovative playful menu design to 'secretly' teach new users to play (Langlais, 2014). However creative and playful this menu is, according to my own experience, it presents a challenge to the player instead of an easy means to achieve their goals such as selecting the game mode to start playing. Developers have acknowledged their mistakes in the end: "We should either have made the controls simpler, or aimed at a more "experienced" crowd from the start" (Langlais, 2016).

The second possible situation is when user experience design substitutes game design to a prevailing degree. This is often the case of casual social games, such as *Farmville 2* (2014): their interfaces are overflown with enticing animations, flashy highlighting and "Click me!" messages which remind of "Alice in Wonderland". Many interactions are available at once, in any order, and neither of them leads to victory or

failure, which made some researchers label them “challenge-free games” (Bogost, 2010). I would prefer to describe these games as “playful interfaces” which allow interaction with a high degree of freedom, and also, periodically offer difficult time management challenges (Serada, 2017).

Figure 3. Nicolas Bourges. FarmVille 2 - User Interface. A “hungry” combination of a cow, a donkey and two chicken in the centre is probably a glitch. Source: Behance https://www.behance.net/gallery/7274877/FarmVille-2-User-Interface

These games are actively disliked by many professional game designers and researchers, starting from Bogost and his parody critique *Cow Clicker* (2010). Still, it usually does not create a problem to players: millions of them wholeheartedly enjoy games that offer no explicit challenge and constantly prompt them on what to do next. On the other hand, such games confuse game researchers and many game developers, as they undermine their understanding of a game as a challenging goal-oriented activity. It appears that casual social games do not require an ultimate goal, and endless chains of so-called behavioral goals provide enough satisfaction to their players. It can be argued that abundance of affordances in casual games provides positive feelings of comfort and safety to players, which they appreciate.

PHANTOM AFFORDANCES AND THEIR VALUES

In Norman's version of the theory of affordances, they either meet individuals' expectations or they don't. In Gibson's version, positive affordances lead to positive outcomes, and negative affordances bring negative consequences. What I propose is the introduction of a phantom value for an affordance - a value which is supposed to be there, but is materially absent, like a phantom pain in an absent limb. If we revisit the Table 2 from this point of view, neutral "absence" of affordance will be replaced with negative "lack". In this position, a false affordance is not just absence of affordance, but the presence of a negative affordance. In a very common mode of exploration, affordances are often confirmed negative if they are misrecognized or not relevant to the player's goal. In case of a jigsaw puzzle, it would be a piece which does not fit but still belongs to a different place in the same puzzle. But sometimes, something is actively lacking, which was "promised" to be there. In this case, frustration and anger are caused by a critical failure to confirm 'reality' of an affordance or its 'betrayal' of the general purpose.

The jigsaw puzzle analogy can be even more productive if we explore it with more obsession. There are plenty of transgressive jigsaw puzzles, such as solid black jigsaw puzzles (*Krypt Black*, n.d.) and even color changing jigsaw puzzles (*1000 Changing Colours*, n.d.). "This is not a jigsaw puzzle!" — one might say; still, I would prefer to call such obscurities "borderline cases" of jigsaw puzzles. The most suitable (and painful) example of *a phantom affordance* would be a jigsaw puzzle where one element has been lost, or even worse, was never present in the package. This is betrayal and deception of the game system, not just its inability to function as it was expected. As in the mentioned example with Marxism-Stalinism, which promises never-coming Communist future, a phantom affordance promises fulfilment at first and then diverges from it halfway. Anyway, such affordances have also been used as tools to create new and meaningful experiences by game designers, and not only in *That Dragon, Cancer* and *Depression Quest*. Felzmann also mentions *1378 Kilometer* (2010), a controversial game about crossing the border between East and West Germany (Felzmann, 2017), and many more examples could be mentioned. Serious games with frustrating outcomes are so common they should be recognized as a separate genre.

This is where the original Gibson's version provides an important insight once again - affordances are designed for everyone but come into play differently for each player. Phantom affordances can become negative affordances for some players and positive for others - when lack of

interaction is seen as relaxing and meditative in *No Man's Sky*, and helplessness resonates with real life experiences in *That Dragon, Cancer*. There is no frustration if the game is simply no fun. Frustration comes when the game affords a players' goal at any of the mentioned levels and then never takes them there. Diverse encounters are promised in *No Man's Sky*, but they never happen. A player approaches *That Dragon, Cancer* with hope and proactive attitude, and it proves to be a wrong attitude for a game about cancer. In both cases, frustration of a player is caused by lack of control: "Nothing is more boring for a player than the feeling that he or she is being 'played by the game' instead of the other way round" (Kramer, [2000] 2015, 84)

In some cases, we could speculate about setting a goal at one level and delivering it at another, which is still subversive. In the early version of *No Man's Sky*, more objects to interact with were promised but not delivered — but it failed to be fun at a visceral level. In *That Dragon, Cancer* interaction does not bring resolution because it is supposed to happen on a higher analytical level. The purpose of this game is bigger than completion of behavioral goals, but it was taken by some players at face value. We might say that this is where 'procedural rhetoric' fails to deliver the message, because the intended message is not 'literal'. It requires a higher level of abstraction, and readiness to connect to bigger meanings and priorities outside of the game.

CONCLUSION

In this paper, I have argued that there may be a third option in addition to positive and negative affordances in games, and I call it 'phantom affordances'. Phantom affordances occur when an affordance is present and perceived, but it does not assist the player in reaching their goals. Besides, this affordance is so inviting, active or obvious that the player cannot confirm it negative; it is also different from a negative affordance, which affords negative outcome, and absence of affordance, which may be ambiently perceived but does not afford anything. Phantom affordances are almost never present in utility apps: it makes no sense to intentionally design misleading clues in practical software interfaces. Even 'dark patterns' of UX design still lead users to a certain goal, which is usually the up-sale.

Phantom affordances create disruption in game experiences. Lack of perceived quality of the environment, its incompleteness or uncooperativeness leads to frustration of the player and is perceived as the treachery of the game. In this way, it is different from the situation when

the game is simply boring, underdeveloped or not fun. Anyway, like 'normal', or 'full' affordances, phantom affordances can be directly related to higher or lower level goals and understood according to Norman and Cooper. The lack can be located at to the level of visceral satisfaction, the ultimate goal of the system or even the player's own life goals and aspirations. Phantom affordances have been repeatedly used to create 'serious' games, and their understanding in practical terms of UX design can help create more meaningful and granular subversive experiences by use of ludic media.

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