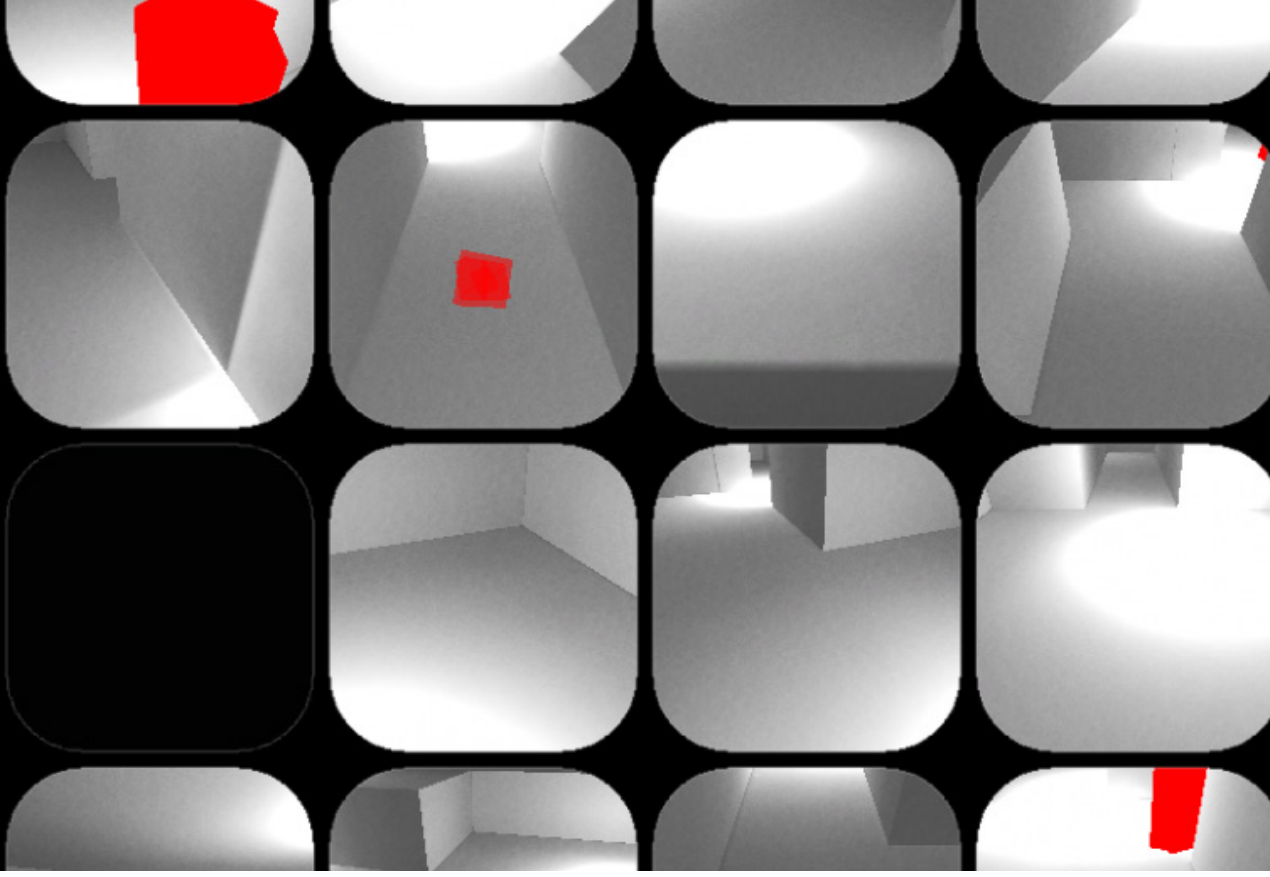

Replay

The Polish Journal of Game Studies

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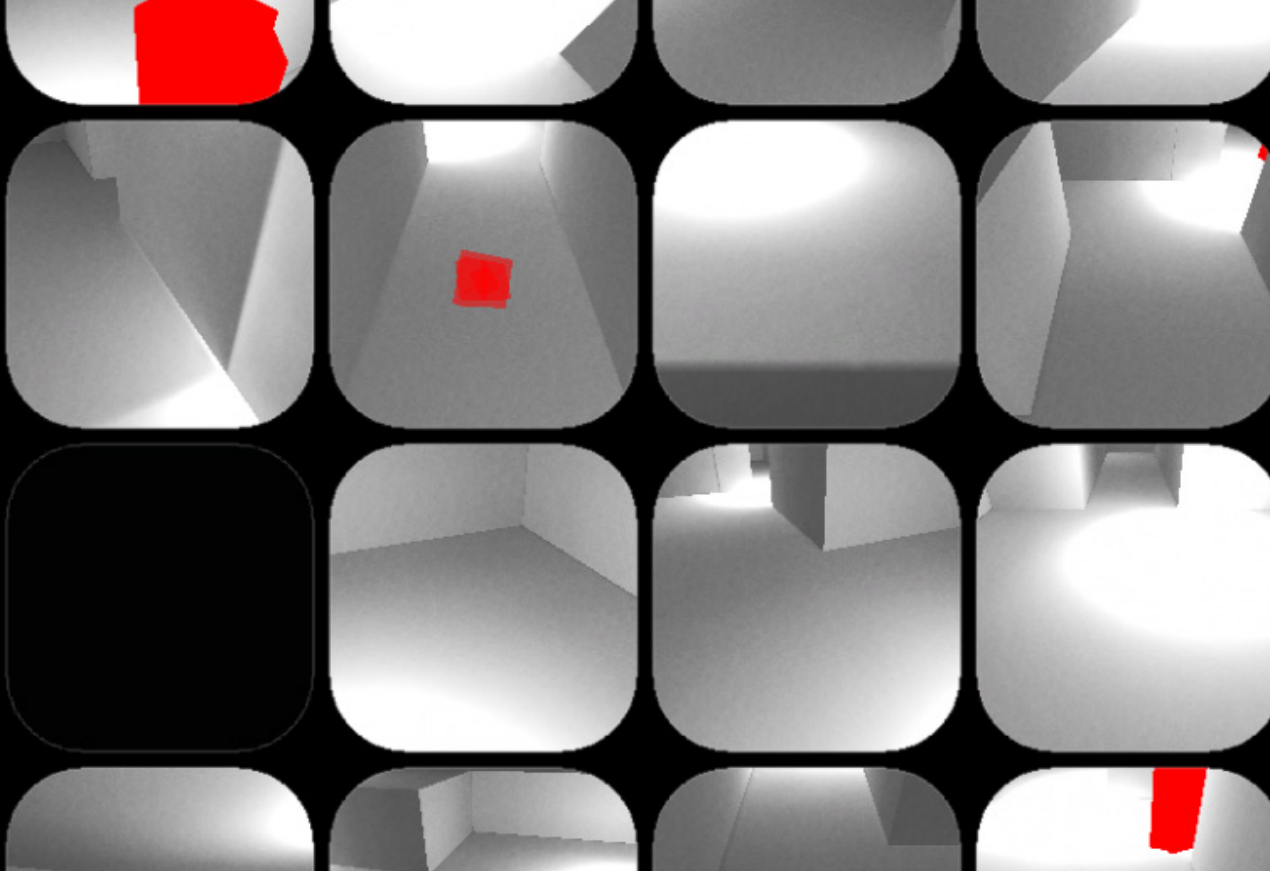

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David Chircop

An Experiential Comparative Tool for Board Games

Introduction

As Booth (2015) states, "we are in the midst of a board game renaissance" (p. 2), and with the increased presence of board games in our daily lives comes the increased worth and importance of their analysis as social, textual, and experiential phenomena. This paper aims to present a comparative tool to help compare and differentiate the traits that make board games different, bringing us a step closer to their understanding through their analysis.

In this work, when I refer to a board game, I think of a game that comes packaged as a branded game product, most often in a cardboard box (but may be packaged otherwise), which contains all the physical components that make up that game and are required to play, and is generally designed to be played on a tabletop in one sitting, at the end of which there is one or multiple winners or losers.

The components generally include one or more of the following: boards, cards, cardboard tiles, playing pieces (pawns, meeples , miniatures, cubes, and dice), cardboard tokens, and some other game-specific components (paper money, player screens, player aids, timers, dice-towers, and so on). This comparative tool takes inspiration from a variety of sources. Aarseth et al. (2003) and Elverdam and Aarseth (2007) have inspired the goals of this tool. Elverdam and Aarseth state that a "typology serves best as a tool for comparison" (2007, p. 4), not as a direct solution to the vagueness and unstructured nature of other comparative modalities such as genres.

Elias, Garfield and Gutschera's *systemic analysis* (2012, p. 71) was also an inspiration in terms of determining how the model is structured. Similar to Elias et al.'s (2012) systemic analysis, this model will isolate a number of characteristics that affect the general board game experience for the player. These characteristics are each scored separately and objectively to form the *board game experience profile* of the game. Although Elias et al. (2012) go in depth into no less than 31 different characteristics that could make one game different to the next, it is not presented as an analytical tool which can be practically used for typological analysis, and it is not specific to board games. In this vein, this paper takes inspiration from Elverdam and Aarseth (2007) in creating a tool focused on the ability to compare and highlight differences, with a structural makeup inspired by Elias et al.'s (2012) systemic analysis, as well as an increased focus on usability and practicality.

This model is based on how four different traits of board games generate different experiences for the player. The four traits are as follows:

1. Rules
2. Randomness
3. Representational Backdrop (or Theme)
4. Interaction

Each of the dimensions operates as a *continuum*; that is, the trait has a minimum and a maximum, and an infinite number of possibilities in-between. For the sake of simplicity and practicality, each of the traits is scored as *low*, *medium*, or *high*, as this is most often sufficient to highlight explicit differences from one game to another. If need be, however, more specific markers along that continuum may be used (such as medium-low, medium-high or 0–10).

Rules

Before the player is able to play a board game, they need to familiarise themselves with the system. All board games feature some sort of a ruleset. This ruleset will display varying complexities which will affect the player's experience in terms of the time, effort, and investment needed from the player before she is able to play the game. In this model, the effort that the player needs to put in before gaining access to the game is measured through the dimension of *rule complexity*.

Rule complexity refers to the length, difficulty, and intricacies of the rules. A game like *Mage Knight Board Game* (Chvátil, 2011) with its **two** 20-page rulebooks full of intricate rules and rule exceptions cannot be compared to *Dixit's* (Roubira, 2008) 2-page simple rulebook in terms of rule complexity. *Dixit* can be explained to experienced

players and non-experienced players alike in less than five minutes. *Mage Knight* is known to take hours, if not days, to understand its rules properly.

Mage Knight has *high rule complexity*, *Dixit* has *low rule complexity*. The complexity of the rules will greatly vary the experience of the player, not only in the initial phases of learning, but also in the investment and effort the player will need to maintain throughout the play of the game, for which social situations the game is suitable, and which players are best to play the game with.

The rules on their own do greatly influence experience; however, there is another experiential dimension related to the relationship between the rules and the players. I call this dimension: *player reliance*.

Many games, especially Eurogames, feature interactions with the rules where the experience of the players mostly involves making choices from a set of available options. This exemplifies a game with low *player reliance*. Other games, however, greatly rely on the input from the player to be able to function. Some mechanics, such as auctions and trading, although always rule-bound, involve multiple nuanced layers of communication between the players that go above and beyond the rules. In some games, players need to use conversation to be able to build trust in each other and convince the other player that they are on their team, such as in *Battlestar Galactica* (Konieczka, 2008). Other games, such as *Spyfall* (Ushan, 2014) and *Once Upon a Time* (Lambert et al., 1993), require players to make up and use sentences, phrases, stories, and questions around which the experience happens. The generation of this player content is often still rule-regulated; however, the players are using input which has been generated by the players, often regulated by pre-existing social rules, to be able to move gameplay forward.

It is important to differentiate between *low player reliance*, *high player reliance*, and Roger Caillois' (1961) concepts of *ludus* and *paidia*. Whilst *paidia* is mostly focused on the absence of rules, *player reliance* is focused on the need for the player to generate inputs which are outside the game as object. The rules that govern this generation of content, be it trust, a hint, or a story, may seem not to be as strict as the rest of the game's rules; however, this is because the responsibility of regulating these inputs is often transferred to the rules of social construct of the group, instead of the game system itself.

Randomness

In *Dice Games Properly Explained*, Knizia (1999) explains the effects of different types of randomness in the clearest and most understandable of formats. He states that the

different types of games, when it comes to luck, mostly vary with regard to how much *control* the player has on the outcome of the game. After describing a set of games which he calls "Games of Luck", he states that these games "all have one thing in common: essentially you had no influence over the game. You could hope and cheer for your desired results, but there was little point in pondering about how to play best" (p. 59). He then follows to introduce the next chapters by stating: "This is now going to change. […] Although the outcome of these games still depends on luck, you have the choice on which bets to place. *And that makes a difference*" (p. 59, italics in original).

The keyword here is choice. The player's experience shifts considerably by introducing *agency* (Murray, 1998). As Murray states, agency is "the satisfying power to take meaningful action and see the results of our decisions and choices". Randomness directly affects how meaningful a player's action is within the gamespace, and that directly affects the player's experience of satisfaction. Knizia (1999) describes odds and the "choice of which bets to place" (p. 59) as the factor that is giving the players *agency*. This choice provider is, of course, specific to the types of games that Knizia proceeds to describe, namely casino dice-based betting games – the main concept being that "more often than not, some bets will offer better returns than others […] and better chances of winning your games" (p. 59).

This "provider of choice" that Knizia describes translates to many modern board game designs and is a fundamental factor in segregating the two types of luck. Having better odds is simply one of many mechanics that could provide the choice and therefore generate some *agency* for the player, but this will vary greatly according to the board game mechanisms specific to the game being discussed.

The two main types of randomness, however, remain the same: the randomness that makes decisions for the player, and the randomness that *generates options* for the player to make decisions on. I call these two types of randomness *decisive randomness* and *productive randomness*, respectively.

Greg Costikyan (2008) differentiates between *games of skill* and *games of chance*, stating that very few games are really in those extremes (referring to roulette and chess) and that "almost everything else is some mixture of the two" (Costikyan, 2009, para. 20). Although he does point out that the common dichotomy between skill and chance is a false one, he mostly attributes that falsity to the fact that it is more of a spectrum rather than a binary decision.

Game designer and academic Richard Garfield, in his talk *Luck in Games* (2011) and later in his book *Characteristics of Games* (Elias et al., 2012), takes this a step further. He similarly admits that the luck versus skill dichotomy is a false one, but mostly

attributes this to the fact that they are not even on a spectrum. Essentially, *they are not opposites*. He argues that there are possibilities of games which factor high skill and also high luck at the same time.

In this classification, randomness is seen as a separate and unrelated factor to skill. The skill required for playing is a resultant of all the different factors discussed in this classification. A game can require skill in that it has high *rule complexity* and, therefore, a steep learning curve. Another game may require skill congruent to its player reliance in that it requires the player to draw or sing, or potentially memorise a sequence of events, or even be familiar with a specific universe. Highly player reliant games often also require skills of social interaction and emotional intelligence, where agreements need to be made between players and the ability to convince other players is crucial in winning the game. Randomness on its own is still regarded as a continuum. A game can vary from a high dependence on randomness to no randomness whatsoever.

Let us look at a few examples of types of randomness, starting off with the classic roll and move mechanic. The player rolls a six-sided die and then moves the pawn or playing piece that number of steps on the board. This is an example of **decisive** randomness through overt luck. The dice make a decision for the player with regard to how many spaces he/she can move. The player has no possibility to influence that die roll, and even if he/she does, that would not change the fact that the dice make the decision, which is final, onto where the player will be able to move. This could be mitigated through the use of a board. For example, in *Snakes and Ladders*, the track is linear – therefore, the decision of the die immediately dictates the exact space to which the player will be able to move.

Let us imagine a hypothetical move mechanic where the player, instead of rolling 1 die, rolls 3 dice, and the player then gets to choose which of the three dice he/she would like to use for his/her move. This is a case of **productive** randomness. The dice generate a set of three options for the player, and the player makes a choice, selecting the best out of a set of available options to best suit her current game state.

The difference here is that the dice's decision in *Snakes and Ladders* is unique and final, while in the above example of productive luck, the dice create further choices for the player, instead of making a decision for the player.

These two types of luck can also be used in different combinations of each other in a single game. It is true that decisive luck is generally regarded within the game design community as "bad randomness"; however, designers have managed to use it in different ways to either conceal it or use it to create an experience where players still feel that they are able to exert their agency in the game.

Decisive randomness is a common feature in many modern board games, even Eurogames. In modern board games, however, these mechanics rarely feature without some sort of *mitigation* (Knizia, 1999). If they are unmitigated, they are generally used for a global effect, affecting all of the players equally without a specific advantage (or disadvantage, for that matter) to any single player. The popular board game *The Settlers of Catan* (Teuber, 1995) features unmitigated decisive randomness in deciding which resources are produced each turn. The 2014 Kennerspiel des Jahres winner *Istanbul* (Dorn, 2014) features unmitigated decisive randomness in selecting where certain non-player controlled characters appear and move to on the board. The adventure game *Mage Knight Board Game* features partly-mitigated decisive randomness in the random drawing of a monster, and unmitigated decisive randomness in the use of the "dummy player" mechanic when playing with less than four players.

The Representational Backdrop

The game's theme is a selling factor in most games. When one describes a game to another person a short description of the theme often ensues: "you travel with camels across the desert" or "you build spaceships and then watch them as they are broken apart by meteors". A game tends to capture your attention because it sounds compelling, simply through the theme. Most games have a theme; how relevant that theme is to the actual game mechanics is another question altogether. The theme is sometimes used as the basis of the game, creating mechanics that attempt to evoke the narrative or emotions that the theme affords. In other situations, the theme simply works as a container, to act as a context to the art and the game mechanics, which may or may not have been developed with a theme in mind. This section, therefore, presents the dimension of *theme synergy*, which measures the extent of synergy found between the game's theme, aesthetics, and mechanics. "Theme" represents the setting or "what you are doing in the game". Aesthetics is a combination of the visual and physical elements of the game. This mostly includes the art, the representative elements (the cards, the board), and any miniatures or playing pieces. Mechanics represent the mechanical function of the game's play.

A commonly-used phrase within the board game community is that of "pasted-on theme", referring to a theme which was clearly added in the later stages of the development and is pretty much inconsequential to gameplay. For some other players or designers, theme is important, as they may enjoy the narrative elements of the game more than the interaction with the system.

This extent of theme synergy is useful in describing to the player where the focus of the game experience lies. A game where the theme is central to its gameplay will inform

a player that he/she expects to play a game where he/she should be able to play the role, create a story and play the game with the theme in mind. A game with a low theme synergy would create an experience more based around the ludic aspects with specific attention to the mechanics, and how to best make use of them to outsmart an opponent.

Some games, especially paratextual board games, rely on their high theme synergy, as a selling point but also in form and function. Booth (2015) discusses a variety of paratexutal board games and the relationship between the players, and the characters that have been translated from other media. He discusses how paratextual board games and the relevance of the mechanics to the theme in general are capable of opening player dialogue with the media text. Booth also states: "the materiality of the game pieces in paratextual board games facilitates fan interaction with the game as a system while also externalizing the game as an additional episode within the media franchise" (2015, p. 17).

Games with high theme synergy will feature mechanics specifically intended to convey the theme upon which they set out to be based. A game about killing monsters will most certainly involve combat, weapons, characters, and mechanics to afford its own theme. Greg Costikyan (2011) describes Ameritrash games by means of a trait similar to theme synergy, where he states that they focus on a "tight connection between theme and mechanics" (Costikyan & Davidson, 2011, p. 183). A game with high theme synergy is therefore one where, if it were to be stripped from its theme, the experience is significantly adversely altered to an extent that mechanics lose context and imbued meaning, to a point of potential redundancy. Fighting heroes becomes a matter of who rolls higher. Exploration becomes a matter of flipping a tile or card, and hoping for the symbols that you would have liked. Because flipping a tile was a mechanic that was meant to inspire a feeling of exploration, when any connection to exploration is removed from the equation, the generated experience runs the risk of being underwhelming. A great focus on specific representative game pieces and aesthetics, such as miniatures, maps and locations, as well as a good amount of effort in contextualizing specific mechanics as an attempt to simulate meaningful actions within the context of the theme, are often good indicators of high theme synergy. These games often contain rules that are there specifically to evoke the theme and tend to feel less natural or obvious when observed objectively without the contextualization and framing as provided by theme.

Games with medium theme synergy are ones where the relationship between theme and mechanics is still very significant, and removal of theme would have some adverse effects, but not to an extent that specific rules or mechanics appear to be redundant.

In simpler terms, in games with high theme synergy, the rules and mechanics simulate and evoke the theme, while in games with medium theme synergy, the theme complements and elevates the mechanics.

Not all games need to be based on a theme. Not all games have a theme at all. Games with low theme reliance are games where the theme, present or not, is not the main event in terms of the game's appeal and gameplay. The mechanics are not based or tied to a specific event or sequence thereof. From a commercial perspective, they are often still themed, mostly to allow some art to be made, but the game would stand on its own right without the theme. This is more commonly seen in Eurogames, and is also reflected in the aesthetics. While games with high theme synergy are generally accompanied by highly iconic playing pieces – such as numerous plastic miniatures to fit the game world, Eurogames often feature more symbolic wooden pieces, such as pawns or meeples, as although the theme is important, the designer or the publisher would prefer to highlight the mechanical properties. When a game has a less strongly represented theme, less representative pieces and a lessened amount of mechanics directed towards evoking a certain theme, the game is regarded as low theme synergy. In other words, a game with low theme synergy is one where, if it were to be stripped of its theme, the experience would remain mostly unchanged, with little or no adverse effects.

Completely abstract games with no theme whatsoever, such as *Haggis* (Ross, 2010), are scored as having no theme synergy. Theme synergy is one continuum that can frequently be scored as nil.

Interaction

Game designer Lewis Pulsipher talks about the "petty diplomacy" problem (2011). This is a specific situation where, in three-player competitive games with interaction, the leader would always be beat down by the other two players to prevent her from winning, resulting in a never-ending stalemate. He mentions that "this is not usually a problem in games where players can do little to affect other players, such as most race games" (Pulsipher, in Costikyan & Davidson, 2011, p. 17). He continues to state that "many "Euro"-style board and card games (which are often for three or four players) have been called "multiplayer solitaire", a popular style partly because it avoids the "petty diplomacy" problem" (p. 17).

The term "multiplayer solitaire" refers to a subset of games where players have very little possibility to interact with each other from a game perspective, leaving them essentially playing a game on their own, with little need to look at other players' game states. When the game ends, the players often compare points to see who wins the game. Social interaction while playing may still be present, but not interaction through the game itself.

The extent of player interaction is a factor which causes much debate within the board game community. This is evident in an article on the game criticism website and show *Shut up and Sit Down* (Smith & Dean, 2011). The two reviewers argue on the value of multiplayer solitaire and interaction in board games, one of them stating:

> Games where, fundamentally, each player is off in their own world, worrying about their own problems, and not in anything resembling dynamic conflict or co-operation with their friends. I find them dull. But I'd go further than that. I'd actually call them failures of design. (Smith & Dean, 2011, para. 3)

In their arguments, they classify the popular board game *Agricola* (Rosenberg, 2007) as multiplayer solitaire. While one reviewer and game critic classifies it a "failure in design", the game has maintained its position in the top ten board games on *boardgamegeek* for more than half a decade. In fact, if one had to look at the list of the top ten games rated by the worldwide community, five of the top ten have strong elements of multiplayer solitaire. The above quote also introduces two other types of interaction that the said critic finds enjoyable, namely *dynamic conflict* and *co-operation*.

Smith points out specific and significantly different game experiences from one game to the other, based on how much interaction between players the game affords. Whether a game is that of competition or of collaboration is a simple and functional differentiator. Competition and collaboration, similar to luck and skill, are another example of a false dichotomy. Although the two may seem opposite at first, one does in fact allow for another in the course as well as the flow of a single game. A straightforward example would be that of the board game *Diplomacy* (Calhamer, 1959), where a collaborative ally eventually becomes a backstabbing rival. This does not mean that *Diplomacy* is not a competitive game. It simply means that although it is, in essence, a competitive game, it affords some sort of co-operation.

The same applies for two-team games such as *Tichu* (Hostettler, 1991), where the team-mates collaborate with each other to compete against the opposing team, therefore featuring high levels of co-operation as well as competition. Therefore, similar to many of the other factors in this classification, player interaction works on two separate independent spectra: collaborative interaction and competitive interaction.

A game with high competitive interaction and no collaborative interaction would be one where there is a two-player conflict, such as a simulation of a war. For example, the *Commands and Colors* series (Borg, 2006). The two players are in a constant competition against each other and each move is premeditated so as to benefit the player or

damage the opponent, although the players most often attempt to achieve both at the same time. As soon as a third player is introduced, a potential element of co-operation emerges (as in the previously-discussed situation of petty diplomacy) and, therefore, the game is no longer solely based on competitive interactions.

A game with medium competitive interaction and no co-operative interaction is that of the classic Euro-style game. The players have little opportunities for direct attacks; however, they have multiple opportunities to rush ahead of their opponents, mixed in with a few opportunities to *stall* the opponent's progress. If a trading mechanic is introduced, this immediately increases the level of co-operative interaction, as "fair" trades are almost always symbiotic.

A game with high co-operative interaction and low competitive interaction would be that of the semi-cooperative game, such as *Archipelago* (Boelinger, 2012) and *CO2* (Lacerda, 2012). The players play almost the entire game in a co-operative fashion; in most cases, attempting to prevent a specific game condition that would make the players lose collectively. Once the game ends, however, only one player wins the game. The competition becomes understated and almost secretive. In fact, most of these games tend to feature secret winning objectives for each player which are only revealed at the end.

A game with only collaborative interaction would be a fully cooperative game with no traitor mechanic, such as *Pandemic* (Leacock, 2007) and *…and then we held hands* (Chircop & Massa, 2015). These games' only outcomes are that either everybody wins, or everybody loses. All the interactions in such games are towards the collective win.

Depending on the type of game that is being played, interaction will play a more or less significant role. Whatever the case, it should be noted that apart from the interactions that happen between the players' playing pieces, there is an overlying layer of social interaction which the game generates that is present regardless of which type of interaction it exhibits.

Using the Tool

This tool is intended to be a comparative tool, that is, useful mostly to point out differences between two or more board games. When classifying different styles of games, one will notice that similarities and differences will become apparent, and patterns that define a certain experience will emerge.

In this section, I will briefly outline the use of the model and display some examples of games as classified by it. To classify a game, the user should go through all of the seven differentiators and score the game as *low*, *medium,* or *high*. In some cases, although quite rare, some games could have one or more of the traits classified as *nil.* Although

this could occur, it is more common for games to have many of the traits, even if they are classified as low. *Pandemic* (Leacock, 2007), for instance, is one game which features no competition between players whatsoever and, for this reason, scores a nil on competitive interaction. It should be noted that a score of nil is still a score, and should not be omitted from the classification. The typology becomes particularly useful when displayed in a bar-graph format, as a visual representation of the traits creates a clear visual distinction from one game to another and allows for visible patterns to emerge.

An interesting starting point would be to compare two games from the two overarching genres of board games – *Ameritrash* and Eurogames.

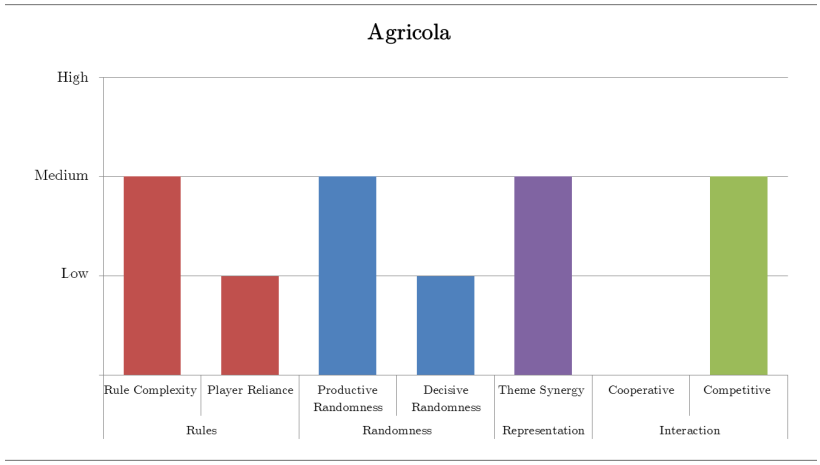

Figure 1. Board game experience profile for *Agricola*

Agricola (Rosenberg, 2007) and *Descent: Journeys in the Dark* (Wilson, 2005) offer two very different experiences. *Agricola* (see Figure 1), as a Eurogame, seems to offer a relatively balanced experience with no high extremes. The scores seem to be close to each other, with more than half the traits scored on medium. There is no single trait that is outstanding, indicating a multi-faceted experience of some competition, thoughtful gameplay and representation, with a moderated dose of productive randomness to keep things fresh from game to game. This moderated game design is a common trait in many Eurogames, as we shall see when we compare two other types of games.

Descent (see Figure 2), on the other hand, has more than half the traits scored as high, and a tendency to the extremes. The game has high scores for randomness (especially the decisive variety), with very high interaction between players both on the cooperative as well as the competitive dimensions. The game has higher theme synergy

than the Eurogame, which is a common trait in Ameritrash-style games. Ameritrash games therefore tend to have traits that generally score higher in the extremes and are generally skewed to the right (theme and interaction).

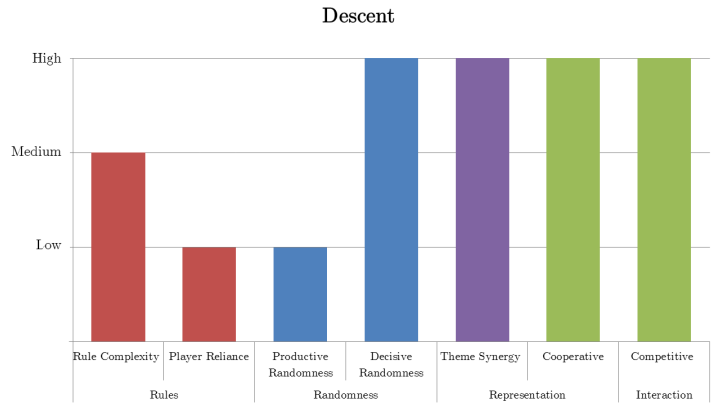

Figure 2. Board game experience profile for *Descent*

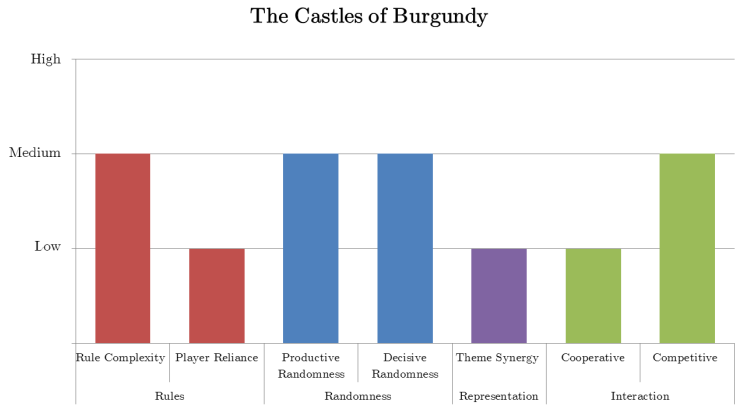

Figure 3. Board game experience profile for *The Castles of Burgundy*

The model is not necessarily only used to compare functionally-opposite board games, but can also be used to isolate experiential differences between similar games.

Agricola and *The Castles of Burgundy* (Feld, 2011) (see Figure 3) are both Eurogames that are well-respected in the board game community. Although one could still fit both of them within the Eurogame category, they do feature slightly different experiences. As one can see, *The Castles of Burgundy* still features the moderation that

we saw in *Agricola*; however, it has less thematic synergy and a greater feature of randomness. This is a product of the use of dice and the use of less representative pieces.

If we look at a completely different style of game, such as the more mass market games, we will notice that the profile will not explicitly feature any of the characteristics or patterns that emerged in Eurogames and Ameritrash games.

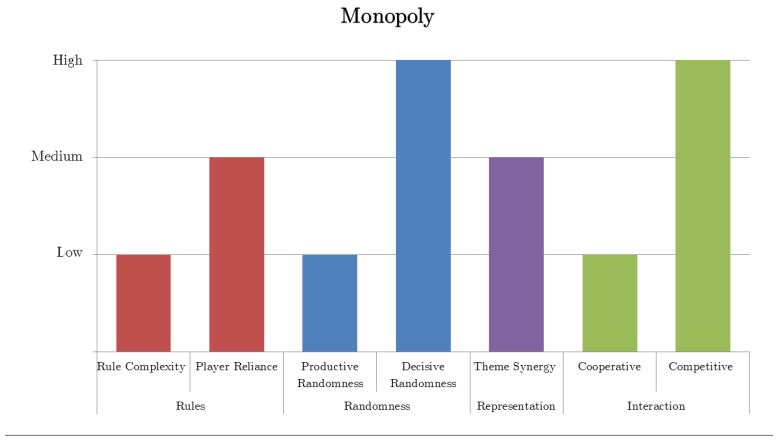

Figure 4. Board game experience profile of *Monopoly*

One would notice that this group of games features a lot less variation from this common formula than the other types of games. As can be seen in Figure 4, the games often feature relatively simple mechanics (roll and move) combined with an overlying loosely player-reliant mechanic. For instance, in *Monopoly* (Darrow & Magie, 1935) (see Figure 4), there is trading as a loose overlay; in *Clue* (Pratt, 1949), the roll-and-move mechanic is overlaid with a deduction mechanic. The games are almost exclusively competitive, with little cooperation. The traits that are found in early mass market games are still featured in some more recent designs; for instance, the game *Exploding Kittens* (Inman, Lee, & Small, 2015) features a very similar experience profile to *Monopoly*, which could explain why the game was well-received by the mass market, raising millions of dollars on Kickstarter, but received a mixed reaction from the more critical and analytical boardgamegeek community.

Another notable experience is that of more social, player-reliant games, such as *The Resistance* (Eskridge, 2009), see Figure 5.

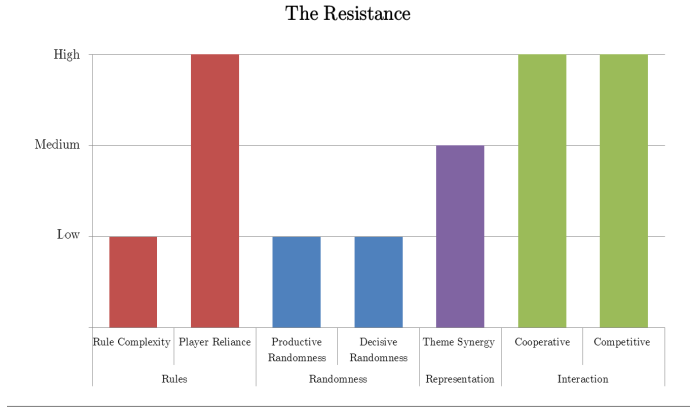

Figure 5. Board game experience profile for *The Resistance*

Here we see an example of game design where there is high priority on extensive interaction. This is reflected by the high occurrence of player-oriented traits; that is, player reliance and interaction, and then a low occurrence on most other traits. This experience is geared towards the social aspects of gameplay and gives the more ludic aspects, such as rules and types of randomness, a much lesser value. This displays a "specialist" profile pattern, in that the game seeks to specialise in some specific traits and highlight them.

Another contrasting profile pattern is that which I call the "maximalist" design pattern. Here the game seems to fully maximise all the traits that it incorporates. An example of this is *Mage Knight Board Game*, a game that aims to be highly thematic, but also highly strategic, giving as much control to the player as possible. This is evidently reflected in the game's experience profile (see Figure 6).

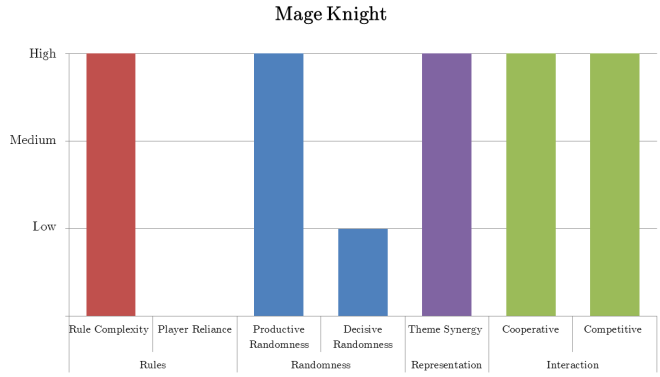

Figure 6. Board game experience profile for *Mage Knight Board Game*

Although implications as a descriptive and comparative tool have been clearly demonstrated in this paper, there are some potential applications as a game design tool that are worth outlining. Perhaps the most practical of its uses lies in its ability to give the designer an alternate perspective focused on player experience, rather than specific mechanics or genres. This applies both proactively, when drafting and visualizing the desired player experience for a prototype, but also retroactively, when analyzing actual player response compared to the expected one. Due to its simple nature and its focus on player experience, the tool has potential applications for data collection, where the players could plot their experience of a prototype using the tool, which could then be compared to the designer's vision of it, visually revealing discrepancies between the player's current experience and the designer's desired effect.

Conclusion

The comparative tool presented in this work, albeit within itself relatively basic, is the first step into the deeper understanding of the board game medium. It is the understanding of subtle differences between the different experiences the medium is capable of generating that will lead us to a greater understanding of its overall cultural significance. Although the above discussed observations are derived from the author's subjective analysis, this paper has showcased the capability of this tool to be able to display diverse combinations of its basic traits and has already allowed to witness a development of how the medium itself changed over the last few decades. Influences and trends could be displayed visually, and evident patterns emerged from the analysis of a few key games within the medium and the different focuses that different designers choose to employ. This comparative tool is a first step towards a much needed thorough typology specifically designed for board games while also providing a framework and direction for future empirical research on the subject, without sidelining the medium's cultural and social circumstances.

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Summary

In the field of game studies, contemporary board games have until now remained relatively unexplored. The recent years have allowed us to witness the emergence of the occasional academic texts focusing on board games – such as *Eurogames* (Woods, 2012), *Characteristics of Games* (Elias et al. 2013), and most recently *Game Play: Paratextuality in Contemporary Board Games* (Booth, 2015). The mentioned authors all explore board games from diverse viewpoints but none of these authors present a viable and practical analytical tool to allow us to examine and differentiate one board game from another. In this vein, this paper seeks to present an analytical comparative tool intended specifically for board games. The tool builds upon previous works (Aarseth et al. 2003; Elias et al. 2012; and Woods 2012) to show how four categories – rules, luck, interaction and theme – can interact on different levels to generate diverse gameplay experiences. Such a tool allows to score games objectively and separately in each of the categories to create a combined gameplay experience profile for each board game. Following this, the paper proceeds to present numerous practical examples of contemporary board games and how it can be used from a design perspective and an analytical perspective alike.

Keywords: board games, analysis, comparison, player experience, typology

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Video Game Navigation: A Classification System for Navigational Acts

Introduction

The young field of game studies has produced a multitude of works regarding matters of space and time in video games (e.g. Gazzard 2009a; Günzel 2010; Nitsche 2008; Tychsen & Hitchens 2009; Zagal & Mateas 2007). Interestingly, these discussions are limited to the environments in which players play. Others, which actually examine videogame navigation, include socio-cultural practices of navigation (e.g. Chesher 2012), or the players' experience of the gameworld through navigation (e.g. Flynn 2008). The question of *how* they traverse space and time has been neglected for the biggest part.

Several studies indicate the importance of navigation for the player experience and the game space. Van Driel and Bidarra state that "[w]hile the game world remains the same, an increase of abilities makes the AI perceive a richer world with more paths" (2009, p. 153). While they are concerned with developing a better method for AIs to navigate and understand space, this statement can easily be applied to human players as well. Alison Gazzard states that "[o]ther vehicles increase this speed and therefore can significantly alter our understanding of the path and the relationship we have with it" (2009a, p. 40). Bernadette Flynn connects Markku Eskelinen's observation that the user function in games is primarily a configurational rather than an interpretational one (Eskelinen 2001) with the act of navigation (Flynn 2008, p. 137). Even earlier, she argues for the importance of navigation in videogames as "[…] it is only through navigation that gameplay acquires a language and this language then operates at the level of a central organizing device" (Flynn 2003, p. 8).

Navigation lies at the core of many, especially contemporary, videogames and has an important impact on the player's experience of the game. Curiously, even though video game navigation's socio-cultural contexts (e.g. Flynn 2003; Chesher 2012), and the player's experience of space through it (Flynn 2008) have been discussed, what is still missing is an examination of the navigation itself. Flynn's (2008) phenomenologically inspired discussion includes, for example, the navigation of *Myst* (Cyan 1993) and *Half Life* (Valve 1998), without further examining whether the acts of navigation in these games are different. As Espen Aarseth argues, every videogame study should be supported by ontological research (2014). Such an ontology, and with it a clearer terminology, is missing for navigation in videogames. This paper examines different types of navigational acts and demarcates them from one another, arriving at a classification system that will support future inquiries into the topic of videogame navigation.

A navigational act is any kind of movement, relocation, or teleportation that transfers a player's avatar from one location to another. The term 'navigational act' was chosen, as other possibilities, such as 'process', did not account for the specificity of this investigation. A 'process', as defined by the Oxford English Dictionary, is "a series of actions or steps taken in order to achieve a particular end" . The problem here is, as will be clearer later, that the definition of relocation as "a series of actions" is questionable. To ensure the specific focus on how the player navigates the gameworld and the limitation to the smallest 'navigational unit', the term 'navigational act' was chosen. The classification of these acts was developed through the analysis of existing theoretical works as well as the critical play of multiple games.

Michael Nitsche distinguishes five planes of video game spaces (2008, p. 15): the *rule-based space, mediated space, fictional space, play space,* and *social space.* The games, and thereby the problem of a missing classification of navigational acts, were examined on Nitsche's third plane, *mediated space*, as the visual (and auditive) presentation of the game's code to the player. Additionally, influences by the game's rules and code (first plane) and on the player's fiction that is developed in her mind (third plane) will be discussed occasionally, when appropriate and fruitful.

First, an overview of important, relevant work in the field of game studies will be presented and some terms that are necessary for the later classification will be developed. After this, the classification model will be explained in a step-by-step manner, including examples from analyzed video games and discussions of pre-existing classifications.

Videogame Spaces

While it has been argued earlier that studies tend to focus on what we navigate in instead of how we navigate in it, it is indeed important to have a basic understanding of the *what* before we can discuss the *how*. One of these environments is game space, which has been examined in game studies before. In their approach towards a game typology, Christian Elverdam and Espen Aarseth (2007) came up with three subcategories for the metacategory *virtual space*: Perspective, Positioning, and Environmental Dynamics. In the context of the present work the subcategory of P*erspective* is negligible, as it describes the player's view onto the gameworld, not the game space itself. The same goes for the category *Environmental Dynamics*, as it refers to the possibilities of alterations to the gameworld. However, the subcategory of *Positioning* will be further discussed.

As described by the authors, the positioning of the player inside the virtual space can be either *absolute* or *relative* (Elverdam & Aarseth 2007, p. 7). In the first case, the player is only able to navigate between locations that are predetermined by the game. A *relative* position, on the other hand, means that the player can navigate freely inside the virtual space and her position would be described depending on other objects or players inside the virtual space. The difference between the two is briefly described thusly: "The pawn stands on C3" in Chess (*absolute*) versus "I am next to the three green boxes on bomb spot B" in *Counter-Strike* (Valve Corporation 2000) (*relative*). It is interesting to see the difference between this typology and the one it is derived from, an earlier approach towards a game typology by Aarseth et al. in 2003. Here the authors state that "A game's topography can be either geometrical, with continuous freedom of movement, or topological, giving the player only discrete, non-overlapping positions to move between" (Aarseth et al. 2003, pp. 49–50).

At first, the shift of focus between the two typologies should be mentioned. In the chronologically earlier typology, Aarseth et al. (2003) actually tried to categorize the video game space itself, whereas in the latter, Elverdam and Aarseth (2007) used a description of the player's positioning inside the gameworld. What is more important are the similarities between the two (one is derived from the other after all): the dyadic relation of *absolute* and *relative* (Elverdam & Aarseth 2007, p. 7), and *topological* and *geometrical* (Aarseth et al. 2003, pp. 49–50), where the former describes discrete restriction and the latter depicts continuous freedom.

A similar distinction was made by Deleuze and Guattari in 1987. In their book *A Thousand Plateaus*, they describe space as *smooth* or *striated* (Deuleuze & Guattari 1987, p. 474). Here *smooth* describes a continuous space, such as a desert or a sea, just

like what was called *geometrical* by Aarseth et al. (2003). *Striated* space is similar to what Aarseth et al. called *topological*: divided areas existing next to each other, and the player can only be inside one or the other.

This dichotomy is a recurring theme in concepts developed in game studies and the more general discussion of space. As mentioned before, Aarseth et al. (2003) describe *geometrical* and *topological* spaces and Elverdam & Aarseth (2007) refine these into an *absolute* or *relative* positioning by the player. Furthermore, Michael Nitsche (2008, p. 182) adopts Deleuze & Guattari's (1987) terms to describe the change of space in *Doom*, when switching between the first-person view and a bird's-eye view onto a two-dimensional map.

These differences, especially the determining character of striated space, will have important implications for the classification of navigational acts.

Time in Videogames

Videogames offer the possibility to navigate not only space but also time. Therefore, it is equally important to briefly examine existing approaches towards game time analysis. Zagal and Mateas' (2007) approach follows a reductionist tradition of understanding time by analyzing time frames through the relation of events in the real world, the gameworld, their organization in coordination frames and the fictive time frames connoted with them. Tychsen and Hitchens (2009), without explicitly stating it, include the platonist view of time into their model, by considering time's continuous flow in the player's engine, the server, and the real world. While these approaches can be subsumed under what Michael Nitsche calls "formalist approaches" (2007, p. 145), we should not forget the subjective role of the player, as added by Tychsen and Hitchens in their "perceived representation of time" (2009), and more thoroughly discussed by Nitsche (2007). However, it is important to note that time – just like space – can be distinguished into topological and geometrical systems. Zagal and Mateas' "coordination time" (2007), for example, describes rounds or turns in games, which are of a similar 'either-or' nature as the topological space in games. The category "server time", on the contrary, describes the continuous (geometrical) flow of time on the server.

These models show that the matter of time in video games is complex. Considering the classification of temporal navigation, the application of one of these models – or even all of them – is unpractical. Such an application would have to include descriptions and analyses of not only the navigation inside of each frame or representation of time, but also how the different types relate to each other between frames or represen-

tations of time. Due to the complexity of such a discussion, it is fruitful to use a more simplified model, which will be developed below.

This model draws from Bordwell and Thompson's terms "story" and "plot" (2008) and Gordon Calleja's term "alterbiography" (2009). In the present, simplified model the first distinction is made between *prescribed story* and *prescribed plot*. The prescribed story describes the game's events in their original, scripted order, while the prescribed plot describes the events as presented to the player. Following Bordwell and Thompson, the plot is "[...] everything visibly and audibly present in the film before us" (2008, p. 16). Opposed to this, the prescribed story further includes events that are not directly visible to the player, but may be part of the game's lore in general. In this sense, the prescribed story cannot be seen as segmented, as it includes all theoretical events from the 'birth' of the game's universe until its last (or future) events. In other words, the game's prescribed story is a continuous stream of events (is geometrical) and the prescribed plot consists of chunks (is topological). Whether these chunks are in chronological order is unimportant, as opposed to the fact that the game forces the player to play chunks of events. The last term that is necessary for the classification's development is *alterbiography of events*. Derived from Gordon Calleja's "alterbiography" (2009), which describes each player's own 'story' while playing the game, the term *alterbiography of events* describes the order of events as they occurred during each individual play-through. While these three terms bring a certain inaccuracy with them, they enable us to describe and understand temporal navigation on a basic level first, before discussing it within the frame of more complex models, such as the ones described above.

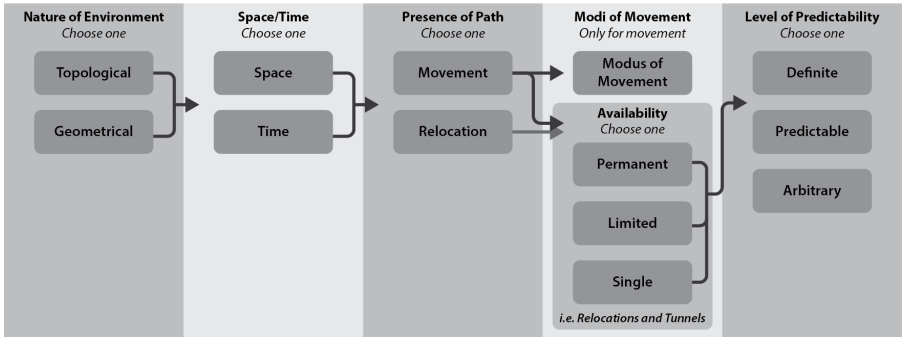

Figure 1. Step-by-Step classification of navigational acts

The Typology

Drawing from the previously described related works, the following sections will develop the classification for navigational acts. Each section consists of one of the typology's five dimensions and the complete model will be followed by exemplary applications of it.

Nature of Environment

As discussed earlier, the main difference in video game spaces and time are *topological* and *geometrical* (Aarseth et al. 2003), *striated* and *smooth* (Deleuze & Guattari 1987), or *absolute* and *relative* (Elverdam & Aarseth 2007) representations of space and time. Stefan Günzel describes the difference between the video game space categories (topological and geometrical) established by Aarseth et. al (2003) as "the difference between continuous movement and discrete movement" (Günzel 2010, p. 174). As he points out, the navigational options in a geometrical (continuous) environment are different from the options a topological (discrete) one offers. Therefore, we have to distinguish between geometrical and topological navigation on the first, superordinate level.

Navigation in Space or Time

After distinguishing between these two overall categories, the second level differentiates between *spatial* and *temporal* navigation. Some video games give us the interesting possibility to not only navigate virtual spaces but also time. Unlike in real life, books, or movies, in video games we can actively rewind time to replay a situation in a different way than before, fast forward it, or navigate to completely different temporal locations. The distinction between spatial and temporal navigation is necessary, as the two do not necessarily occur together.

It has to be noted that certain types of navigation (especially movement) are closely linked to a simultaneous navigation in time, as time automatically passes. However, this only supports the necessity for splitting the spatial and temporal aspects of navigational acts: a spatial *relocation*, for example, can be temporal *movement*. However, for a detailed and accurate analysis of navigational acts a differentiation between their temporal and spatial aspects can be useful.

Presence of Path

On this third level a distinction between *relocations* and *movement* is made. To exemplify this distinction, it is useful to briefly discuss the relationship of time and movement. As discussed earlier, video games can have multiple time frames (Zagal & Mateas 2007) or representations of time (Tychsen & Hitchens 2009). This shows that, if we include time into the definition of movement, we would always have to specify what time we are referring to when analyzing temporal navigation. In videogames, the gameworld time (Zagal & Mateas 2007) does not necessarily proceed while the character is moving. This becomes even more complicated when we include several players or non-player characters (NPCs), who have their own histories or play times. The way to

solve this problem would be to specify the time in the definition of movement as our real time. A second problem remains, though: how do we categorize movement of, for example, very fast avatars or characters?

In the fighting game *Dragon Ball XenoVerse* (Dimps 2015) the player is placed into the world of the Dragon Ball saga. By pressing the buttons 'L2' and 'A' just before the opponent lands a hit, the player uses two of her stamina points to avoid the hit and to reappear behind the opponent. This would generally be considered a relocation. However, fans of the saga would object to this classification, as the move is explained by the characters' possibility to move inhumanly fast. The passing of time is very subjective: while humans experience *Son Goku*'s move as instantaneous, for him there is enough time to move behind his enemy.

To exclude the subjectivity of time, movement has to be understood as transitioning between two locations through a path of adjacent locations in between them. In geometrical navigation, there are nearly infinite possible locations between the start and end locations of movement. Through the absolute nature of navigation in topological systems, these locations are easier to count. Relocation, then, is the act of transitioning between start and end location without passing a path of adjacent locations. Depending on whether we take the game mechanics or the game's lore as the basis for discussion, the dodge in *Dragon Ball XenoVerse* is either movement (lore) or relocation (mechanics).

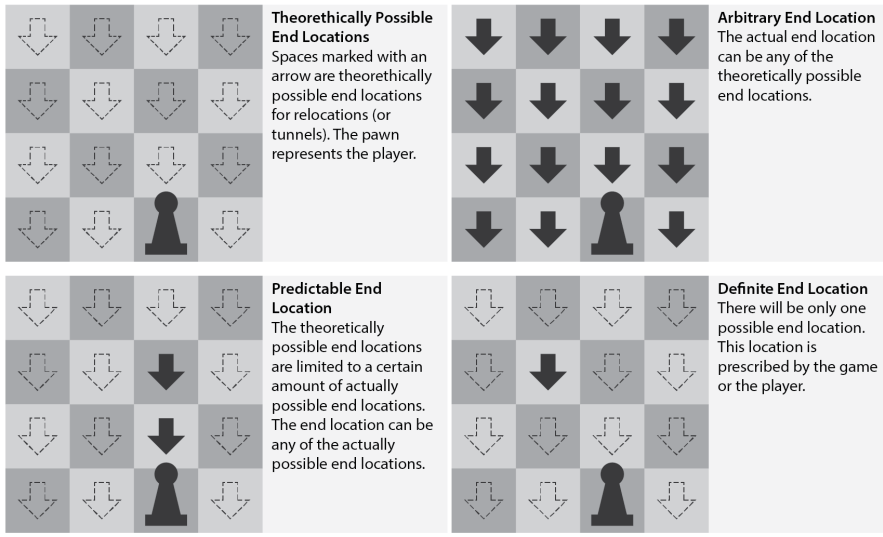

Figure 2. Level of Predictability

Following this distinction, using the *Citadel of Time* in *The Legend of Zelda: Ocarina of Time* (Nintendo EAD 1998) is a *temporal move* in the game's prescribed plot (topological environment) and alterbiography of events (geometrical environment), but a *temporal relocation* in the game's prescribed story (geometrical environment).

Before the typology's fourth level can be described and discussed, it is important to differentiate between tunnels as subcategories of movement, and relocations as acts of navigation that are separate from tunnels. This is because they have identical subcategories on the typology's fourth and fifth level, even though they are two different navigational acts. While relocations were described as instantaneously transitioning from one location to another, tunnels enable the player to do something similar through continuous movement. To understand tunnels it is useful to examine the difference between teleporters in *Torchlight II* (Runic Games 2012) and the portals in *Portal 2* (Valve Corporation 2011). In *Torchlight II* the teleporters are installed devices through which the player can instantaneously relocate to a nearby, isolated area. The portal gun in *Portal 2* enables the player to create portals on surfaces in the game, which function as entrance and exit for a *tunnel*. The main difference is not the possibility of creating the tunnel. More important is the fact that the player navigates the tunnels in *Portal 2* through continuous movement, while the relocation in *Torchlight II* is instantaneous. Following Stefan Günzel's argument (2010), one can also describe the act of navigation in cases of relocation as discrete, while navigation through a tunnel is continuous. This difference enables the player's avatar in *Portal 2* to be partially on both sides of the portal at the same time, while, in instances of relocation, the avatar's position is exclusively on one side or the other.

By creating a tunnel in *Portal 2* the player alters the (game) space to create a shortcut between two locations in the level. Therefore, tunneling is the act of continuously moving through altered (game) space. Technically, one could further distinguish between tunnels which alter the game space in a more general sense and those which alter the space itself. The portals in *Portal 2* create a direct shortcut between two locations in a level that are originally far away from each other. To understand this, we could argue that the portal gun bends space itself in certain locations to turn them into adjacent ones, which is very similar to the explanation of wormholes or warp engines in science fiction. While this is a manipulation of space itself, digging a tunnel through a mountain in a gameworld is also tunneling. However, each act of tunneling through space – in the science fiction sense – is also an alteration of the gameworld. Therefore, this difference will be neglected in the present typology.

The fact that navigating through tunnels is a continuous act of navigation shows another difference between them and relocations. As Alison Gazzard observes, "[t]he warp turns paths experienced by the player into fixed 'tracks', where navigational control is removed whilst in the warp sequence [...]" (2009b, p. 1). While this is true for relocations in the present typology, it is not for tunnels. The player loses control over the avatar during the instantaneous relocations, whereas tunnels do not remove control completely, only restrict it.

Availability and modi of movement

The typology's fourth level describes two things. First, 'normal' movement includes all modi of movement such as walking, running, crawling, jumping, etc., as well as rewinding or forwarding time. Therefore, the final classification of 'running over a mountain' in *Zelda* will be seen here as *geometrical, spatial movement* in the modus *running*. The modi of 'normal' movement are too diverse to list them all, and therefore the reader has to refer to common language to describe them.

Contrary to this, as indicated through Gazzard's work on warps (2009a, 2009b), a further classification of the tunnels and relocations is possible and useful. The concept of warps subsumes the here described tunnels and relocations. Therefore, one option would be to adopt Gazzard's classification into the present typology as it is. However, especially because Gazzard was concerned with the nature of the path and not the navigational act itself, there are certain problems with the direct application of her warp classification to navigational acts. In addition to that, her classification poses some minor, inherent problems. As direct adoption is not possible, it is necessary to first describe her model and discuss the aforementioned problems. Following this discussion, the model will be improved and adapted into the present typology.

Gazzard distinguishes between three overall categories: *Jump warps*, *return warps* and *portals* (2009b p. 4). For her, *jump warps* are unidirectional (ibid.), meaning the player is at location A first and then at location B, without the possibility of navigating back the same way. She further distinguishes between *visible* and *aleatoric* jumps. In the former case, the warp's start and end point are visible to the player, while aleatoric jumps provide the player with no visibility of the jump's end point.

The second category, i.e. *return warps*, enable the player to travel back the same way and are therefore bidirectional (Gazzard 2009b, p. 5). Similar to the distinction of visible jumps, Gazzard describes two subcategories of return warps. *Return to previous* is a warp from location A to B and then back to A. During a *return to other* warp, the player does not return to her original start location, but to a different one: location

C. The town portals in *Diablo 3* (Blizzard Entertainment 2012), for example, are *return to previous* warp devices, while examples of return to other warps are hard to find, as their arbitrary mechanics would likely confuse players (Gazzard 2009a, pp. 153–154).

Gazzard's model's first layer distinguishes warps by 'direction'. Jump warps are defined by being unidirectional, while return warps and portals are bidirectional. The second layer classifies by the 'visibility' of start and end points. It is actually here where *portals* are distinguished from *jump* and *return warps*. This means that the split into three types of warps on Gazzard's first layer is executed by applying the criteria of layer one *and* two to *portals*. Strictly following these distinctive criteria, *portals* should be a subcategory of *return warps*, as they offer a bidirectional use for the player. On the second layer, then, they would be a separate category through their permanent visibility of both their start and end points.

Furthermore, her example for the distinction between *visible jumps* and *aleatoric jumps* are the "inadvertent warps" (Gazzard 2009b, p. 4) of *Super Mario Bros.* (Nintendo R&D4 1985). The designers hid tubes in the game, through which the player can warp to more advanced levels. For Gazzard, these tubes are *aleatoric warps* because "[...] the end point cannot be seen as the new path is determined by the games system" (Gazzard 2009b, p. 4). In fact, the tubes in *Mario Bros* have a number displayed above them, indicating the level they lead to. Additionally, the tubes always take the player to the same location at the start of the level that is indicated by the number. Therefore, the warp's end location is not actually visible, but the player could know where she will arrive if she uses the tube.

This leads us to a problem with the term *aleatoric*. It results from the adoption of Roger Caillois' *alea*, which describes "[...] all games that are based on a decision independent of the player, an outcome over which he has no control [...]" (Caillois 1961, p. 17). In fact, Callois describes *alea* not only as the player's powerlessness to determine the game's outcome, as the aforementioned quote continues: "[...] and in which winning is the result of fate rather than triumphing over an adversary" (ibid.). Further he states that "[p]erfect examples of this type are provided by the games of dice, roulette, heads or tails, baccara, lotteries, etc." (ibid.). Callois' *alea* therefore does not only limit the player's influence on the outcome, it also ascribes this outcome to fate or chance. To be clear: The derivation of Caillois' term *alea* seems problematic due to the exclusion of arbitrariness in Gazzard's concept. Thus, the present model will not use the player's powerlessness over the outcome of the warp as criterion for classification, but the navigational act's arbitrariness – or predictability – to include both parts of Caillois' *alea*.

Alison Gazzard's classification of warp devices is an important pioneering work in the field of video game navigation, and it is fruitful to adapt her model into the present

classification system. As she was concerned with the path's nature and not the navigational act itself, and due to the discussion in the last paragraphs, her model will not be adopted, but adapted in the following.

Finally arriving at the present typology's fourth layer of availability, Gazzard's model's first layer has to be adjusted not by distinguishing between the direction (unidirectional, bidirectional) of warps, but by their availability. The three categories here are *single use*, *limited use* and *permanent use*. *Single use* warps are warps that can be used only one time and, therefore, are similar to but not the same as "unidirectional tracks" (Gazzard 2009b, p. 3). Considering Gazzard's model, when the player uses a unidirectional track, she is not able to use the same warp to move back again. In a way, the warp is only available to the player once, which is where the two models overlap. However, it is also possible that the player uses the same warp again, after moving back to its start point through different means. This is where the criteria of direction (Gazzard) and availability (present typology) differ. *Limited use* means that the warp can be used only a certain amount of times, unlike *permanent use* warps, which are available for the player as often as she wants. Examples are *Zeratul's* 'Blink' ability in *Heroes of the Storm* (Blizzard Entertainment 2015) for *single use* warps, *Pikachu's* 'up + B' move in *Super Smash Bros.* (HAL Laboratory 1999) for *limited use* warps, and the circles of light in *The Talos Principle* (Croteam 2014) for *permanent use* warps.

The advantage of this distinction is that we can distinguish between "return warps" and "portals" (Gazzard 2009b) on the first level, without adding the criteria of the second level to "portals" as well. By adapting Gazzard's approach to further classify warps by their start and end locations, they will be divided by their predictability into *definite*, *predictable* and *arbitrary* warps.

Level of Predictability

For the description of start and end locations the terms 'theoretically possible' and 'actually possible' (end) locations will be used. All locations which are accessible through a certain spell or ability will be referred to as 'theoretically possible (end) locations'. In other words, a hole in the ground is not a theoretically possible end location, while the rest of the area is. 'Actually possible (end) location' will refer to the possible end locations from one specific start location.

The term *arbitrary* is derived from Gazzard's term "aleatoric" (2009b, p. 4). However, as she focuses on the player's powerlessness to determine the outcome of the warp but not Caillois' inclusion of chance into the term, it is fruitful to use the different term *arbitrary* here. The end points of these warps are not only determined by the

game system but they are completely arbitrary. *Definite* warps, on the contrary, have a specific start and end location. This can be either a location coded into the game, which is always the same, or a location chosen by the player. *Predictable* warps are in between *definite* and *arbitrary* warps. Here the player is able to determine the end location of the warp to a certain degree of approximation.

In the game *Magicka* (Arrowhead Game Studios 2011) two different kinds of teleports are available to the player. The spell 'Teleport' relocates the player's avatar to a location several meters in front of the start point. As the distance for this spell is always the same it is a *predictable* warp. The player knows to a certain degree where the avatar will end up if she uses the spell. The item 'Rod of Emergency Teleport' has an ability which also relocates the player. This emergency teleport relocates the player to a random location on the screen. Therefore, the 'Rod of Emergency Teleport' triggers an *arbitrary* relocation.

While *single use* warps have start and end points, *limited use* warps have at least one additional transitional point. Therefore, *limited use* warps could have a *definite* start, *predictable* transitional and *arbitrary* end location. Assuming a *limited use* warp with one transitional location, there are 21 combinations with different kinds of locations, some of which are more likely to occur in video games than others. However, a classification with 21 subcategories, and even more if we add multiple transitional locations, is unpractical. One possible solution for this is to classify a specific *limited use* warp by its *lowest level of predictability*. In the end, this is what has been done by calling a *single use* warp with an arbitrary end location an arbitrary warp, even though its start location is definite. A limited warp with *definite* start and end locations, but an *arbitrary* transitional location is, ultimately, an *arbitrary limited use* warp. If a more detailed analysis of specific warps is necessary, this system still provides the possibility of describing each location on its own, while the 'lowest level of predictability' approach enables a more convenient communication.

While the distinction between *definite*, *predictable* and *arbitrary* locations can be made for *permanent use* warps as well, they usually have definite start and end locations. In the first-person puzzle game *The Talos Principle*, the game's three main levels and 21 sublevels are connected through circles of light. These circles are connected in pairs and they exist throughout the whole play-through, which makes them a perfect example of *definite permanent use relocations* in *geometrical space*.

The typology's application

The typology enables us to classify specific navigational acts in a rigorous manner. This also means that its application is not primarily intended towards games as a whole. To apply it to a game would rather mean to examine all navigational acts in the game.

This can of course yield interesting insights as well. However, for now the model will be applied to seven examples. Three examples will be discussed in more detail. Due to the scope of the paper, the others will just be mentioned in image 3.

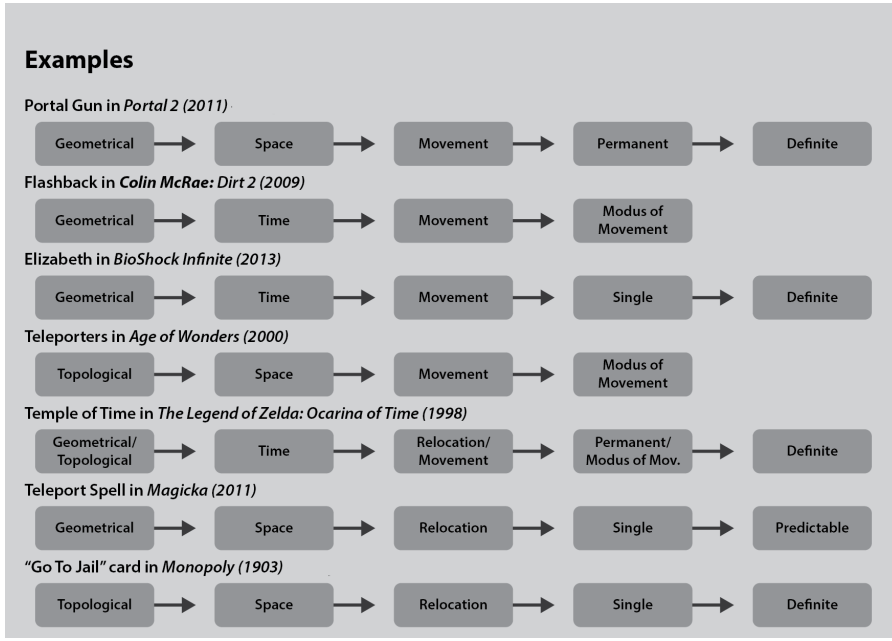

Figure 3. Examples for application[1]

The portal gun in *Portal* 2 creates an entrance and an exit on certain walls in the game. The player can move freely through these holes in a continuous manner. As the game occurs in a three dimensional, continuous space, the navigational acts overall category is *geometrical*. Furthermore, the gun creates holes that enable the player to move between originally distant, spatial locations, thus the classification as navigational act in *geometrical space*. The wormhole-like pathway for the player is navigable continuously. Therefore, this navigational act has to be understood as a *tunnel* that bends the game space, as opposed to a *relocation*, which is a discrete navigation. These portals are *permanent tunnels*, as they are available as many times as the player likes. Finally, the tunnel's start and end locations are

1 The *BioShock Infinite* (Irrational games 2013) example refers to a specific situation in which Elizabeth lifts Booker up a ledge, while simultaneously moving him through a temporal tunnel.

specified by the player (or in special occasions the game) and therefore the portals in *Portal 2* are *definite permanent use tunnels* in *geometrical space*.

Earlier in this paper a distinction between the prescribed plot and story was made. In *Zelda* we have to distinguish between the game's prescribed story as the game world's history, including all events that happened even if not presented to the player, and the prescribed plot as two different times (*Link* as a child and a young adolescent) that are available to the player, as topological organization of the game's time. Depending on whether the analysis aims for the understanding of the Citadel of Time in the game's prescribed story or plot, the navigational act has to be classified as navigation in *geometrical* or *topological time* categories respectively. All further classification relies on this distinction.

To start with the navigation in topological time, there are only these two discrete time zones available to the player. Therefore, drawing the *Mastersword* or putting it back in its place triggers a *move* in *topological time* and the classification ends here as a *modus of movement* between the prescribed plot's two discrete and adjacent areas. Considering the Citadel of Time in the frame of the game's geometrical history, the navigational act relocates Link to a far future or past, skipping all in-between events, making it a *relocation* in the game's prescribed story. Furthermore, the Citadel is always available to the player (after activation) and the temporal start and end points never change. Due to this we ultimately arrive at the Citadel's classification as a *definite permanent use relocation* in *geometrical time*.

An interesting case are the teleporters in *Age of Wonders* (Triumph Studios & Epic MegaGames 2000). In this game *space* is organized *topologically*, giving the player only the choice between discrete locations. In topological environments, all navigation, whether relocation or movement, is discrete (see Günzel 2010, p. 174). Due to this the teleporters are – from a navigational perspective – not relocations, but actually *moves*. As the teleporters connect two 'distant' locations *permanently* and movement in topological space is always discrete, the locations of the teleporters are in fact adjacent. Following the definition of movement as transitioning between adjacent locations, units in *Age of Wonders* are merely moving, not relocating, between the teleporter locations[2]. Following the teleporter's classification

2 Here the teleporters are different from the 'Go to jail' card in *Monopoly* (Magie 1903). This is a single time occurrence, not a permanent connection of two locations, and thereby a *single use relocation* in *topological space* with *definite end* and *predictable start location* (it is impossible to know when the card will be drawn, but the start locations are limited to certain fields).

as a move, the analysis of the teleporters ends here as a *modus of movement* in *topological space*.

This analysis shows that the present model can serve as the basis for new observations and discussions. First of all, the teleporters in *Age of Wonders* would be classified as relocations on a first glance, but through this more sophisticated examination from a navigational point of view, we have to ask the question if that initial observation can stand, or if we have to rethink our concepts of game space completely. Second of all, it also shows that we could – and maybe should – further distinguish between the visual and mechanical layers of navigation in videogames. While the units in *Age of Wonders* are mechanically only in one hexagon at a time, visually they do in fact traverse the game space in a continuous manner. This distinction can be useful for future investigations into the player's perception and experience of navigating videogame spaces.

Conclusion

This paper has dealt with the problem of an indistinct terminology of navigational acts. An overview of important research of space and time in game studies, as well as related work from other fields, has been given and was adapted. Through this theoretical work and the presented examples of video games, it was possible to develop exclusive categories for navigational acts.

The developed step-by-step classification of navigation in video games can be directly used for analyzing certain video game's navigational acts, or as a tool for comparing navigational acts across games. Such an application adds more depth to examinations of space and time in video games by putting an emphasis on the nature of navigational options given to the players inside these environments. This is important as it has been argued that the experience of a certain virtual environment can change, depending on how we navigate within it. In addition to this practical application during studies of games, the typology's development has delivered a terminology for a more sophisticated and standardized discussion of a multitude of aspects of video games and has already raised additional questions of videogame spatiality and analytical methods, through its alternative perspective.

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Summary

Navigation in video games has been a vastly neglected topic in game studies. In this paper a classification system for navigational acts has been developed through theoretical work as well as the analysis of multiple games. The result is an exclusive five-step classification system. Moreover, the development showed that navigational acts are highly dependent on the environment in which they occur. The system is a first step towards a deeper understanding of how the player navigates the gameworld, instead of what she navigates.

Keywords: videogame space, videogame time, game ontology, navigation, typology

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Game Engine Conventions and Games that Challenge them: Subverting Conventions as Metacommentary

Introduction

In recent decades, consumer-grade PC game engines such as *Multimedia Fusion*, *GameMaker* and *RPG Maker* have gained prominence, spawning online communities of users around them. With the advent of indie gaming, their cultural impact has dramatically increased, lowering the entry barriers for newcomers interested in expressing themselves through the medium of games. Coupled with the emergence of the Web 2.0, which has provided an effective infrastructure for promotion and distribution, these tools have helped broaden digital games' reach as a medium. Yet, the specific context of these tools' application, the social dynamics surrounding them, and the ways in which they foster creative expression remain something of an uncharted territory in game studies.

In this paper, I aim to address this lacuna by discussing online communities surrounding consumer-grade game engines. I will examine how conventions and canons pertaining to the use of the engine emerge in these communities—and how they are then challenged and subverted. Building on an autoethnography of my own experience as a hobbyist game developer, I will describe how community members develop games that probe the boundaries of the engine's functionality and will discuss their motivation in doing so.

I will argue that the act of subverting established conventions of using a game engine can be considered a metacommentary on the engine's expressive capabilities and intended use. This metacommentary can provoke wider reflection within the community and contribute to the development of the engine itself.

On a wider level, the question I will address through the prism of game engines is this: how can a creator challenge the constraints imposed by the tool they are using and the community they are part of, and what is the cultural significance of such subversive practices? Before posing this question, however, I will first discuss what kind of constraints are at stake when using a game engine.

1. The game engine and its constraints

Recent decades have witnessed a dramatic transformation in the mediascape, involving the blurring of the dichotomy between producer and consumer and increased accessibility of media production tools. In response, a number of useful, if overlapping, theoretical paradigms have been put forward to make sense of this transformation: "prosumerism" (Toffler 1981), "participatory culture" (Jenkins 2005), "maker revolution" (Anderson 2012), "digital DIY" (McFedries 2007).

In the realm of digital games, consumer-grade game engines (also known as "game makers") are one of the most prominent examples of our changing relationship with media.

A game engine is software that accelerates game development, based on the idea of a "common substructure for similar games" (Bogost 2006: 52). "Substructure" in this context refers to lower-level stock routines, such as video and audio output, player controls, saving and loading functionality, world physics, and so on, which can be abstracted from the game proper. As these routines can be vastly different depending on the genre, hardware platform, and so on, game engines are typically geared towards a specific kind of "similar games".

A game engine is thus a platform (Bogost & Montfort 2007) that enables and simultaneously constrains games made with it. *Adventure Game Studio* is called that because it incorporates most stock routines found in point-and-click adventures: a dialogue system, usable objects and inventory, mouse-controlled playable character, and so on. *PuzzleScript* is so effective for puzzle games because its entire syntax is based on an abstraction of the genre's typical features (two-dimensional tile-based map, four-directional movement, movable objects, etc).

But when one attempts to accomplish something a game engine is *not* intended to do, they are likely to find it difficult or even impossible. You can, for example, create

a platformer with *Adventure Game Studio*. But you would have to manually implement a lot of functionality not covered by the engine itself: gravity and jumping, attacking and taking damage, enemy AI, and so on. At the same time, you would not be taking advantage of many of the tools' built-in routines.

Even more universal tools like *Unity* and *GameMaker* can be challenging to use for purposes not intended by their developers: both, for example, would make it much more difficult to make a text-based game than, say, *Twine*, which is specifically designed for hypertext fiction.

This focus on a specific kind of game is what led Bogost (2006: 56) to conclude that "game engines regulate individual videogames' artistic, cultural, and narrative expression" much more than, say, genre tropes do.

But beyond the "material constraint" of the game engine's functionality there is also an immaterial constraint at play: that of conventions and canons associated with the engine. Some of them derive from official paratexts (Genette & Maclean 1991) associated with the tool, such as the title and the manual. Tools such as *RPG Maker* and *Adventure Game Studio* make it clear what their intended use is through their very titles. This is reinforced and concretized by tutorials and examples shipped with the engine. As a result, many games made with a game engine are either recreations or modifications of examples provided by the developers.

In between paratexts and the functionality of the engine itself are ready-to-use plugins, add-ins, and scripts included in the distribution. While not part of the tool proper, they are likely to be utilized by many of its users. For instance, many platformer games made with *Stencyl* have a very similar control scheme and "feel" because their authors made use of the tool's standard platformer movement behavior.

Equally important to "official" paratexts are those made by community members. Online communities of users play a crucial role in regulating how "game makers" are utilized. Tutorials and examples created by community members and recognized by their peers as successful help establish a "canon" which subsequent contributions are judged against. When a newcomer asks for help, experienced members will often use that canon as a reference point, making adhering to it seem desirable. Sometimes, a failure to conform to the canon can lead to criticism from other community members.

But perhaps even more important are actual games made with the engine. Typically, the first thing you do when you discover a game maker community is play some of the games made with it (usually those that community leaders selected to feature on the website, message board, etc.). Moreover, the more successful games made with a game maker can serve as "ambassadors" for the tool, bringing in newcomers intere-

sted in creating something similar. In such a case, their vision of the tool will initially be shaped by the game that attracted their attention. Thus, for example, if most games made with a certain game engine have been sidescrolling shooters, it can generally be expected that subsequent creations based on the engine will also belong to that genre.

And yet, despite these material and immaterial constrains, there are plentiful examples of game engines being put to unexpected and improbable uses that challenge conventions associated with them. Ben Croshaw's *1213* and *Trilby: The Art of Theft* are platformers made with *Adventure Game Studio*. Both have all the features expected of their genre and then some: gravity and jumping, weapons and combat, stealth… None of these are built into *Adventure Game Studio*, so they must have taken considerable effort to implement. This did not discourage the author despite tools better suited for platformer development being readily available online. Chris Vergilio's roguelike *Dark Woods* may look like a DOS ASCII game (and is in fact a recreation of one), but it was developed with *GameMaker*, a tool known for its limited text capabilities, and seems to use raster sprites to emulate DOS text-mode. Several *RPG Maker* enthusiasts have developed complex scripts enabling the use of 3D graphics despite the engine itself having strictly 2D capabilities.

Similar examples can be found in nearly every online community centered on a popular game engine. But why are people willing to invest time and effort into making them? I will attempt to answer this question through an autoethnography of my own experience as a hobbyist developer.

Autoethnography refers to "research, writing, and method that connect the autobiographical and personal to the cultural, political and social context" (Ellis 2004: xix). As a method, autoethnography embraces the subjectivity of the researcher's experience by recognizing its grounding in wider sociocultural context. Thus, through a reflexive account of their personal experience, the researcher is able to unpack the meanings and complexities of this wider context (Short et al. 2013: 2). The following section is a brief retrospective autoethnography of my engagement with a Russian-language text adventure development tool called URQ.

2. Technological ingenuity in the URQ community: a retrospective autoethnography

I became an Internet user in my pre-teens, shortly after the turn of the 21st century. At the time, dial-up was the dominant Internet access technology in Belarus (where I lived), and my family was no exception. For the following few years, my modem became a narrow peephole into the vast spaces of Web 1.0, a brave new world compri-

sed of personal webpages with inconsistently encoded text, blocky JPEG images, and outlandish GIF animations.

My early experiences of being online were full of excitement, but also filled with frustration and anxiety. Frustration, because there was never telling when the connection would drop, rendering several hours' worth of downloaded data useless as the progress bar stopped short of the coveted 100% mark. Anxiety, because there was no telling how my parents would react to another astronomical phone bill.

Like most kids my age, the thing I was interested in most were games. Yet downloading even old graphical games on a dial-up connection was an ordeal, and contemporary ones were decidedly out of reach. (Most mainstream PC games were still distributed on CDs anyway.) This was when I discovered URQ.

URQ ("Universal Ripsoft Quest")[1] was a Russian-language engine for "Choose Your Own Adventure"-style menu-based text games (also referred to as interactive fiction). While the original version of URQ had been developed for Windows, the newer interpreter was, counterintuitively, a console application originally written for DOS. This meant no graphics were supported. The text-mode games looked no-frills even by the day's modest standards, yet at its peak URQ was perhaps one of the better known game creation tools in Runet (the Russian-speaking Internet community). There were two reasons for the tool's popularity. First, the absence of graphics resulted in very small download sizes. Unlike their graphical counterparts, URQ games could be downloaded by the dozens in a matter of minutes—and the selection, if not necessarily the quality, was good enough. The second reason was the simplicity of URQ syntax, which made it easy even for a beginner with no programming knowledge to make a game of their own. All they needed to do was open a text editor and start typing something like this:

```
:title
pln Welcome to my first game.
btn start, Start the game
btn about, About the game
end
```

1 At the time, the URQ community largely revolved around the now-defunct official site urq.ru. The current official site is urq.plut.info.

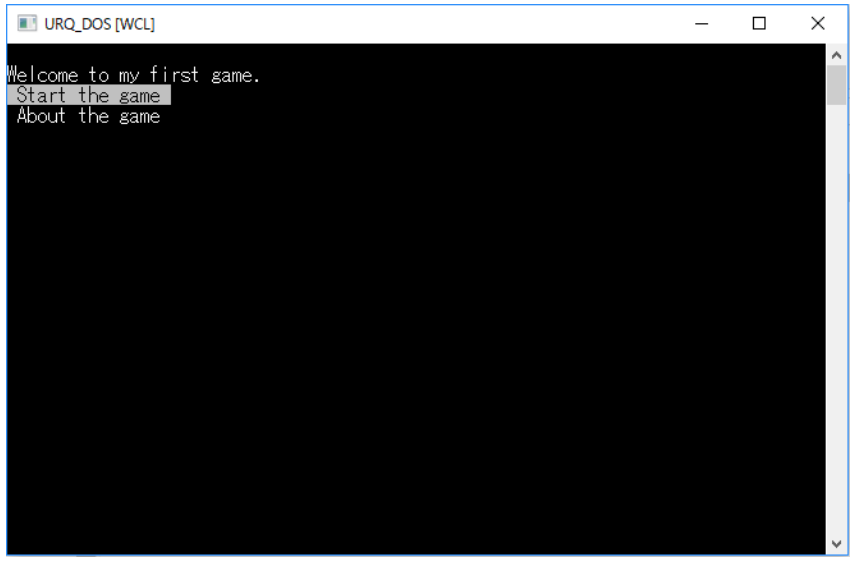

Figure 1. A sample game in URQ

And, of course, URQ was much more than a programming language and an interpreter. It was a virtual community of interest (Henri & Pudelko, 2003: 478) with its own traditions, classics, and celebrities. And its sociality was perhaps what made it more appealing than more advanced game creation tools lacking a full-fledged community.

That said, the enthusiasm of many authors was not perhaps matched by the quality of their output. The gameplay was often tedious, too diligently recreating daily routines such as getting up in the morning and packing for school. Poor writing was exacerbated by poor spelling. On top of that, many authors seemed to take a kind of pride in violating Graham Nelson's *Players' Bill of Rights* (which was already translated into Russian[2]) at every opportunity: many seemingly reasonable choices would unexpectedly lead to death or the game closing off with no possibility to win. At times, the typically short length of URQ games could indeed seem like a relief. In a 2007 interview with SPAG (an English language magazine dedicated to interactive fiction), one of the "old-timers" of the URQ community, a Ukrainian who went by the nick Goraph, reflected on his experience of those early days: "I just did what I liked. The very

2 See the Russian translation here: http://ifwiki.ru/Билль_о_правах_игрока.

process of game creation was fun for me, I had no concerns about whether someone would actually play it (and if he would be able to play it at all)."[3]

The lack of established canon did not help, either. Some players still remembered old Russian Choose Your Own Adventure books by Dmitri Braslavsky and others. The few who understood English would have played some foreign works of interactive fiction. But for the majority of URQ enthusiasts, there was no milestone to look up to.[4] The only standard to judge one's works against were the better URQ games, most of which were still flawed. Oftentimes, it was the sheer volume of the game that won the community's respect, signifying the author's determination and the effort that went into the game. Larger games often prompted comments like: "The filesize is impressive, 400 kbytes of text is no joke"[5]. And if the prose happened to be readable, the game was guaranteed to become an instant classic.

Not that any of these shortcomings mattered. The burgeoning community churned out dozens of games on a monthly basis. A few of them were good, after all. There were a number of official, semi-official, and unofficial websites dedicated to URQ games. Competitions were organized regularly. Community leaders (the "inner circle" whose position was reinforced by their admin status on URQ's official IRC channel) collected and posted reference materials on improving one's writing and storytelling in an effort to raise overall game quality. There was a sense of movement, a feeling that the community was making progress and a vague hope for a bright future which, just possibly, would involve mainstream recognition. In the SPAG interview, Korwin, one of the original members of the community, reminisces about his hopes for the future:

> I was very optimistic about it, wrote articles, warked on two games simultaneously, tried playing English text adventures again: it seemed to me the only problem of the genre was the lack of publicity, and that in our 'world's most-reading country' IF [interactive fiction] was just doomed to be successful.

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3 The full interview is available here: www.spagmag.org/archives/backissues/spag48.html.

4 In the same SPAG interview, when asked about URQ games' perceived lack of quality, one of the community's most prolific authors known as Korwin pointed to "the absence of massive IF [interactive fiction] traditions in Russia".

5 Comment by ifn00b, posted 27.12.05 at http://urq.borda.ru/?1–0-0–00000133–000–0-0–12086 36688. (All the forum comments are translated from Russian by the author.)

For a long time I was a "lurker" in the URQ community: an invisible, passive participant who did not actively contribute to it (Soroka & Rafaeli, 2006). I played URQ games, read others' posts on the tool's message board without creating my own account, and made a number of short, unfinished games, which I never showed to anyone. It was only when I seriously started working on a game of my own that I had to announce my existence: some of my more difficult code was not working and I turned to the community for advice. Gradually, I found myself more actively engaged with the community, first through the message board and then through the tool's IRC channel.

My first released URQ game, an unfinished demo called *Where to Get €300,000?*[6], was mildly unconventional in that it used a fixed set of verb-buttons (*Look, Take, Use, ...*) which then opened a list of objects they could be applied to, as opposed to the default CYOA approach where the choices offered to the player are specific to the situation in the game. This was in part an homage to classic adventure games like *Monkey Island* and partly an imitation of *Captain Blud Chronicles*, URQ's own classic with a similar interface made by a member known as Goraph. The game was moderately well-received by the community, with some players specifically praising the technical features: "in reality, the so-called 'demo' could be a seen as a full-fledged game with some impressive features: custom inventory system <…>, *Blud*-style menus, even rollback."[7]

I then followed it up with *Thoughts Corporation*[8], another unfinished game that featured a more dramatic departure from URQ's built-in interface. It was a parser-like game with no buttons at all, where the player had to use the arrow keys to construct simple sentences out of a set of verbs and nouns. This change meant I could no longer use URQ's convenient *btn* operator and, in essence, had to write a custom engine with its own interface—inside an existing engine. At that point URQ as a programming language stopped being simple and effective and became clumsy and esoteric. What was supposed to be clean and straightforward code ended up looking like this:

```
if curpos1=1 and #%token#y$$_nonlookable=0 then x=x+1&instr menu_le-
v2btn#x$=#%#%token#y$$V$&instr i#x$=#%token#y$$
```

6 https://urq.plut.info/300000euro.

7 Comment by Evgeny, posted 27.12.05 at http://urq.borda.ru/?1–0-360–00000171–000–0-0–1156202216.

8 https://urq.plut.info/corp.

```
if curpos1=2 and #%token#y$$_type=4 and #%token#y$$_openable=0 then
x=x+1&instr menu_lev2btn#x$=#%#%token#y$$V$&instr i#x$=#%toke-
n#y$$
```

Still, I persevered and released a functional demo version. Despite the incompleteness of the story, the game came first out of four entries at the yearly Summer Competition[9], largely thanks to the innovative interface. In fact, one of the more critical comments explicitly stated that in *Thoughts Corporation* there was "an amazing engine but no game."[10]

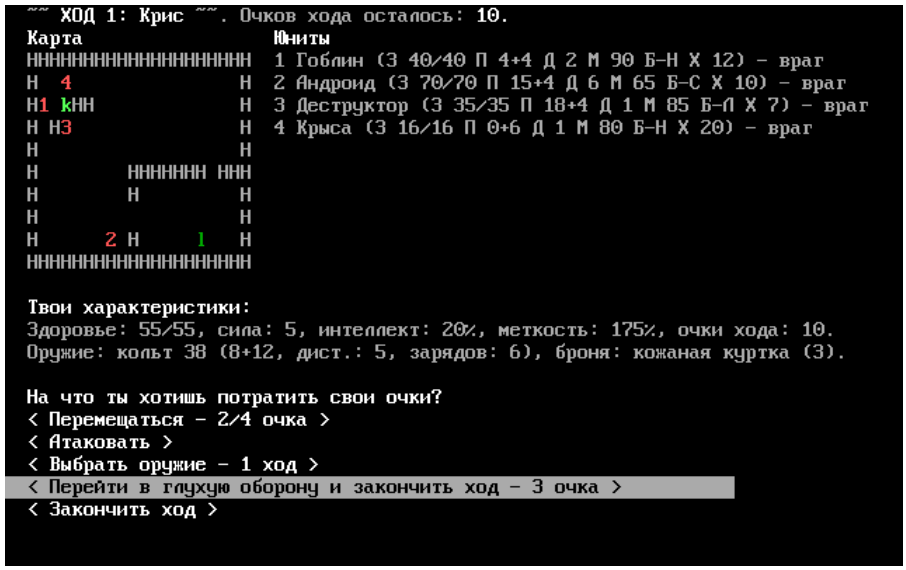

Figure 2. *Xlomidomanad' Experiments:* an experimental game in URQ

The relative success of my technical gimmicks motivated me to go even further. Inspired by roguelike-style walking demo by a user known as Terracon, I decided to use URQ to make something nobody had attempted before: a turn-based tactics game. The game, called *Xlomidomanad's Experiments*,[11] had an enemy AI which used the Lee algorithm (Rubin 1974) for pathfinding. While the algorithm itself is straightforward, implementing it in URQ proved a challenge for both myself and the interpreter,

9 http://urq.borda.ru/?1-0-0-00000210-000-80-0-1212442099.

10 Comment by Borschevsky, posted 02.08.07 at http://urq.borda.ru/?1-0-0-00000210-000-10001-0.

11 Backup copy accessible from http://rilarhiv.ru/urq.htm.

resulting in a delay of up to two seconds before each enemy move. The initial release was warmly received by the community[12] and the feedback prompted me to add more features: multiple playing characters, ranged attacks, improved enemy AI. The experiment never got beyond the stage of a tech demo, but it still became a reference point for what one could do with the URQ engine.[13]

Following the advent of broadband, URQ players started to drift away, switching their attention to the more appealing Flash and downloadable graphic games. The gradual rise in the general quality of URQ games seemed to have hit a ceiling. The erstwhile enthusiasm about URQ's future started to wane as it became increasingly apparent that in the era of fast Internet connections, text adventures were doomed to remain a niche form of entertainment. Even the release of a new Windows interpreter supporting rich graphics and eventually skin customization could not reverse the tide. The ambition of "making it big", which many authors had cherished, led them to other, more popular genres and platforms. Some of them are still part of the community for the social aspect of it, but do not produce any new URQ games. The URQ community joined forces with other text adventure engines in order to survive and in this form still exists in the more obscure corners of Runet.

Personally, I drifted away, despite having been promoted to community and website administrator. I am, however, still in touch with some of the friends I made while active in the URQ community.

It was only years later, when discovering some of the URQ games I had made on an older computer that I (by then a PhD student) asked myself: why had I been so interested in experimenting with the tool instead of using it as intended? Why had I been so willing to write and debug line upon line of unreadable code in order to achieve something I could have implemented much more easily with a better suited tool?

3. Subverting the game engine's conventions

The same question can be asked of games discussed in section 1, such as Ben Croshaw's *1213* and Chris Vergilio's roguelike *Dark Woods*, both of which were developed using game engines ostensibly impractical for the task at hand.

From a utilitarian perspective, this does not make sense. If you use a sledgehammer to crack a nut, you most likely do so because there is no nutcracker at hand. Yet, with game creation software, this is clearly not the case. There are hundreds of tools

12 Full discussion available here: http://urq.borda.ru/?1–0-0–00000200–000–0-0–1191393926.

13 For example, it was cited as such in this thread: http://urq.borda.ru/?1–0-0–00000384–000–0-0–1316245957.

readily available, and it is usually possible to find one specifically tailored for the type of game one has in mind. So why would you, presented with a choice between a nutcracker and a sledgehammer, still choose to crack a nut with the latter?

When I started to reflect on my own experience in the URQ community, I could think of three main reasons.

3.1. Social aspect

Creating a technologically ingenious game is a way to gain recognition in the community and establish yourself as a "tech guru." This allowed me to circumvent the traditional path to recognition in the URQ community: create an engaging full-length game. My entire URQ output was shorter in terms of text length than some of the more ambitious games for the platform and it mostly comprised unfinished demos. Yet, technological creativeness was a social currency in its own right, quickly elevating my status in the community. Soon, other members were seeking my advice on how to implement this or that feature. (The same way as I had previously sought advice from the experienced "gurus" who had written technically complex games before.) This connection to less experienced members enables continuity within the community: newcomers are inspired by existing technically ingenious works and can learn from trying to recreate or better them.

This also leads to a level of expectation on the part of the community for one to keep coming up with new ideas. When a member of the English-language *RPG Maker* community presented an early demo of a 3D-enabling script for the tool, the first response they got on *RPG Maker*'s message board was: "Awesome. If anyone would do it, it would be you."[14]

This is not to say the response to experiments with the engine's functionality is universally positive. Consider, for example, the following comment I received for my turn-based tactics game: "Folks, let us not forget that our games should emphasize the literary aspect."[15] To this, another commenter immediately responded: "Why's that?"[16] This goes to show that the "appropriate" uses of URQ were a contested terrain. On the one hand, URQ was positioned as an engine for interactive fiction, leading to the valorization of the literary dimension of games in the community. From this

14 Comment by meustrus, posted on 21.04.2009 at http://www.rpg-palace.com/categories/game-maker-s-guild/projects/full-3d-rmxp-already-works.

15 Comment by Belial, posted 11.01.07 at http://urq.borda.ru/?1–0-0–00000200–000–0-0–1191393926.

16 Comment by Goraph, posted 11.01.07 at http://urq.borda.ru/?1–0-0–00000200–000–0-0–1191393926.

standpoint, games with little writing were bound to be seen as marginal. On the other hand, there was a discourse of URQ as a flexible engine with richer capabilities than were immediately obvious. This discourse became particularly prominent when the advantages of URQ were preached to outsiders, such as users of game engines seen as URQ's rivals. And what better demonstration of the engine's power than proof it can be used to make a technically complex game in a very different genre? I believe a similar tension between the normative discourse and the spirit of experimentation is at play in most game engine-centered communities.

Insisting on using a certain tool regardless of its suitability for the task is also a sign of loyalty to its community. After I released *Xlomidomanad's Experiments*, at least two players questioned the choice of the engine for the game. One of them (who was largely positive about the game itself) wrote: "I would obviously suggest you rewrite your experiment in C, but you would obviously refuse."[17] I had, in fact, learned C before discovering URQ and could probably rewrite my games in it, which would likely be more efficient both in terms of computational resources and my own effort. Yet I chose not to do so, because it seemed that making URQ games was the surest way of staying in the comfort of the familiar community where I had already established myself. Even the comment itself implicitly recognized that my choice of URQ was deliberate ("you would obviously refuse").

Contribution to the tool's development

Probing the boundaries of a game engine's functionality can be the author's way to enrich the tool with capabilities they feel it is missing. In my early URQ days, a member of the "inner circle" called Evgeny released a set of animated text effects for URQ (one, for example, mimicked movie-style credits) that could be reused in any game for the platform. As URQ provided no animation capabilities out of the box, this was a quick way for authors to jazz up their games visually.

Several years later, when URQ got a new Windows interpreter that supported graphics, I joined forces with Evgeny to create a game with a custom graphical user interface which did not use any of the interpreter's built-in GUI capabilities. The game, called *Peanut Orchestra*[18], was somewhat clumsy to control—but we did not mind. This was our way of putting pressure on the interpreter's developer (who was initially

17 Comment by Goraph, posted 10.01.07 at http://urq.borda.ru/?1–0-0–00000200–000–0-0–1191393926.

18 The game was called *Peanut Orchestra* and is available at http://ifwiki.org/index.php/Peanut_Orchestra.

skeptical) to include skin support, which would make interface customization much easier. Eventually, he did agree to add this feature.

Similarly, above-mentioned scripts enabling *RPG Maker* to display 3D graphics may be a response to the developers' insistence on sticking with retro 2D visuals. Sometimes, such subversive ideas can give birth to a whole new game engine.

Consider the example of *ZZT* (1991), a "construction set" game which allowed players to make their own text-based games using a simple scripting language called ZZT-OOP. While the original focus had been on ANSI characters (that is, regular letters, numbers, and punctuation marks), users almost immediately started experimenting with ASCII graphics, using DOS' entire set of 255 characters to create complex visual representations. The limitations of ZZT-OOP (only boolean flags, no persistent variables between levels, lack of functions) soon became obvious, requiring the more ambitious developers to come up with sophisticated and ingenious ways around them. Three years later, Alexis Janson released *Megazeux*, a *ZZT* clone which responded to the community's needs by including two major improvements: a more powerful scripting language and customizable character sets, where each symbol could be substituted for a custom "sprite" or part of a bigger "sprite." This enabled *ZZT* enthusiasts to produce more complex and visually appealing games while maintaining a sense of loyalty to the original game's spirit.

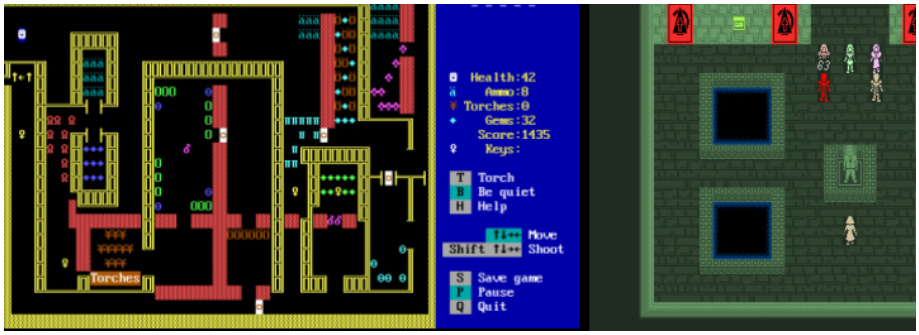

Figure 3. Comparing *ZZT* (left) with *Megazeux* (right)

Self-expression and meta-play

As the Rube Goldberg machine demonstrates, being impractical can be expressive. Similarly, probing the boundaries of a game engine's functionality is a valid way of self-expression. In this context, the game maker's functionality becomes the ultimate creative constraint, prompting the developer to look for hitherto unknown ways around the tool's limitations. I found a lot of enjoyment in thinking how to trick URQ into working the way I wanted it to—and not the way it was designed to. I was not the only one: there

was, for example, a user who initiated a discussion on the URQ forum about "Various tricks and contrivances with URQ code"[19] where users were invited to share their technically ingenious code.

It is perhaps this process of creative negotiation of a platform's technical constraints that most clearly illustrates why programming can be regarded a form of self-expression (Schulte 2013: 21). This view also problematizes the distinction between the artist (whose work is attributed aesthetic value by virtue of belonging to a recognized art form) and the artisan (whose work is based on the application of skill, with the expressive properties of this work seldom given consideration).

Intrinsically connected to the creative aspect is the ludic dimension. The main reason hobbyists put time and effort into developing games in the first place is that they enjoy playing games. Experimenting with a game engine is itself a form of play, or more precisely meta-play, which builds on play's close link to curiosity and exploration.

Conclusion: probing the boundaries as metacommentary

There are at least three ways to understand game engine functionality: the range of uses envisaged by the tool's developer; the range of uses the engine is actually put to by the community; and the entire possible spectrum of what can be (but not necessarily is) done with it. Any game made with a specific engine would fall under the last category, but it may miss the first two. This failure to conform is usually deliberate, as deviating from established conventions requires not only awareness of said conventions but also considerable skill in using the game engine.

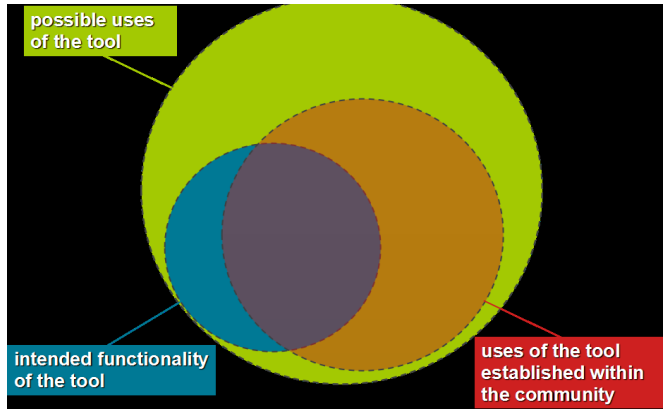

Figure 4. Ranges of game engine functionality

19 http://urq.borda.ru/?1-0-0-00000384-000-0-0-1316245957.

The deliberate choice to push the envelope of the engine's functionality and the conspicuous refusal to follow established conventions can be seen as a form of metacommentary on the engine's capabilities, limitations, and "idioms of practice" (Gershon 2010: 6) associated with it. I refer here to Huhtamo's (1995: 84) understanding of metacommentary as a "practice which continuously de-mythicises and de-automates prevailing discourses and applications [...] 'from the inside', utilising the very same technologies for different ends". Such metacommentary "probes (and sometimes anticipates) technological breakthroughs" (ibid.): even if many technologically ingenious games are forgotten and discarded, and even if they are not universally lauded by the community, they still enrich the community's understanding of what the engine can be used for, "conquering" previously uncharted territory and placing it on the map of the tool's uses. And some of such experiments can directly contribute to further development of the tool.

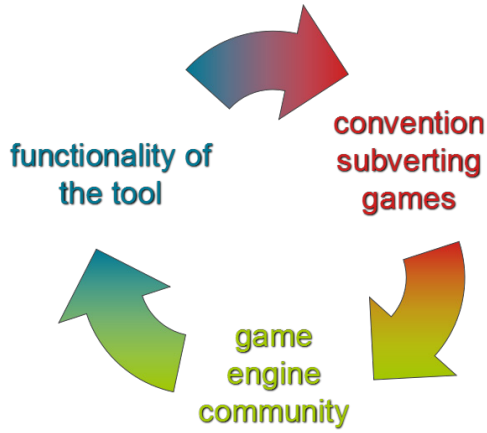

Figure 5. The impact of convention-subverting games on the community and the game engine

This metacommentary, however, predicates on not only the author's but also the player's awareness of the original tool's conventions. And such awareness is generally only found in the narrow circle of the game engine community. When Ben Croshaw's *1213* and *Trilby: The Art of Theft* gained recognition outside the Adventure Game Studio community, their "meta" dimension was largely overlooked, with reviewers focusing on the more conventional metrics of game quality such as gameplay and storyline. My own URQ experiments found little appreciation beyond the URQ community,

as outside the context of the tool's capabilities and conventions most of them were just unfinished games with gimmicky interfaces.

The probing of boundaries discussed in this article is far from specific to the realm of digital games. In fact, it mirrors observations made by anthropologists studying the transfer of knowledge and innovation in traditional communities. Hosfield (2009: 49), for example, discusses how innovation in traditional pottery resulted from a conscious selection and "adventurous" use of tools. In a similar vein, Ingold and Hallam (2007) also make a case for creativity as "cultural improvisation" rooted in a particular social context. Ingold (2001: 17) also argues against the division between "art" and "technology," which he demonstrates is a modern Western construct, pointing out that both are parts of the same continuum: that of "skilled practice" (ibid.: 20). The practice of subverting game engine conventions, which defies categorization as either purely "artistic" or purely "technological," perfectly illustrates his point.

In her seminal *Cyborg Manifesto* (1991: 164), Donna Haraway wrote that "the boundary is permeable between tool and myth." I understand the "myth" here to refer to the conventions and assumptions surrounding the tool. Taken a step further, this idea can be extended to a McLuhan-esque "*the tool is the myth*." That is to say, our understanding and usage of a tool is never independent of the beliefs and values surrounding it. But the "myth" of the tool is not static: it evolves overtime thanks to innovation originating from within the community of the tool's users. This article, I believe, instantiates this point.

In an age of technological determinism, we need to remember that while technology has undergone dramatic changes in recent decades, the mechanisms of technological innovation in communities of practice have not in fact changed that much. We thus should not ignore the broader social and historical contexts when discussing digital media communities and innovation therein. But we should also look at their specificity and localize them in narrower contexts. Experiments with game engine conventions can (and should) be linked to such practices as modding and homebrew development; they can be considered through the ideological prism of indie games; they can be linked to wider contemporary practices such as remixing. It is by establishing these connections and learning more about the practices they bring together that we can start to fill in the voids on the vast canvas of contemporary digital media production.

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Summary

Consumer-grade game engines such as *Multimedia Fusion* and *RPG Maker* have dramatically extended the reach of digital games as a medium. They have also spawned online communities, where conventions and canons of using these tools have evolved. These partly stem from the functional constraints of the game engines themselves and are institutionalized through manuals, examples, tutorials, and games made with them. However, some members of game engine communities actively seek to challenge these conventions by experimenting with the engines and finding ingenious ways

to put them to unexpected uses. Such experiments can be regarded as a form of meta-commentary on the engines' capabilities and limitations. While arguably impractical and inefficient, they enrich the scope of what can be done with the engine and can contribute to its further development.

Keywords: game engine, game development, hobbyist games, participatory culture, platform studies, creativity, innovation, autoethnography

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TRI Soft

Natural User Interface for Education in Virtual Environments

Introduction

Over the last five years we have witnessed a rise in natural human-computer interactions (Dimitropoulos, Manitsaris & Mavridis, 2008, Bontchev & Vassileva, 2006, Whitton, & Moseley, 2012, Freitas & Liarokapis, 2011, Galland, Gaud, Demange & Koukam, 2014, Gaming and simulations, 2011, Wagner, 2012). This tendency allows researchers to experiment with different devices on the market, such as the Microsoft Kinect and Hololens, Asus's Xtion sensor, Leap motion, Google glasses, Oculus rift, Playstation VR. These devices can also be used as input for controlling three-dimensional avatars in simulated environments, such as computer games. Playing has always been a natural way of examining the world around us, especially in our early years of development (Dawley & Dede, 2014, Gaming and simulations, 2011). It was our motivation to build a virtual platform that enables young children to learn in an easy and natural way. The domain we focused on – safety of street crossing and movement – is both interesting and applicable to meet young children's needs. The virtual platform uses Microsoft's Kinect sensor for capturing gesture input. It then turns these gestures into interactions within the virtual environment. There are two types of interactions / gestures – the directional movement of a 3D avatar and manipulation of the in-game menu. The software that we used is C# and the Unity game engine.

The main purpose of this research is to show that a VR environment can be used for teaching young children vital habits, regulations, and skills for moving safely on and near the streets. As we discuss in this study, the main advantage of VR is that it

is safer when compared to real-life learning. We also show that learning in a VR is accepted by children and that they can perform and interact well in it via a natural interface. The rest of the paper is organized as follows. Firstly, we describe the role serious games play in education. Secondly, we make an overview of existing input sensors and motivate our choices of one. Thirdly, we describe in detail the platform that we developed. Fourthly, we discuss the empirical evaluation process during the testing of the platform and discuss the results. Finally, we draw conclusions and mention future aspects of this research.

List of terms:

- Natural user interface (NUI) – it is a user interface that is effectively invisible and remains invisible as the user continuously learns increasingly complex interactions.
- Physical world – the world that we, humans, live in
- Virtual world – a computer-based simulated environment. It is usually populated by one or more users.
- Avatar – it is a representation of the user in a virtual world. The avatars can be textual, two, or three-dimensional graphical representations. In this paper we refer to an 'avatar' as a three-dimensional graphical model of the user.
- FPS – frames per second

Serious games in education

Some researchers refer to the virtual educational environments as "serious gaming". The term is used for the first time by Clark C. Abt in his 1970 book *Serious Games*. He includes in the term both board games and digital games. Serious games serve a clear educational purpose and are not intended as entertainment. That does not mean they cannot be entertaining. The modern understanding of the term "serious games" originates from *Origins of Serious Games* by Sawyer and Rejeski, which manages to inspire a great interest in the idea that public and private educational institutions should utilize modern communication and information technologies to produce video games and simulations that target and research real-world problems (Sawyer & Rejeski, 2002). The most widely accepted definition of the term belongs to one of its creators – Mike Zyda. The formal definition is – "Serious game: a mental contest, played with a computer in accordance with specific rules, that uses entertainment to further government or corporate training, education, health, public policy, and strategic communication objectives" (Zyda, Mayberry, Mccree & Davis, 2005).

There are various examples of virtual reality research. One such example is the work on distance education on the web, where the emphasis is on running the virtual environment in real-time across large number of clients (Dimitropoulos et al., 2008). Another is the work of Stephen Bronack and Robert Sanders. They are developing an educational platform called "AET Zone". According to the authors (Bronack, Sanders, Cheney, Riedl, Tashner & Matzen, 2008), learning occurs in several parts of our brain and is thus distributed. The researchers show that learning in immersive virtual worlds can lead to the activation of one or all of these areas and is advantageous when compared with traditional educational means. Others (Dawley & Dede, 2014, Active Words, 2008) research learning in VE from more general settings. Virtual collaboration rooms for college students are researched by (Bronack et al, 2008). Some researchers prefer to use a well-known client-server platform *Second Life* (Aebersold, Tschannen & Bathish, 2012) because it has a simple and easy frame to work with. On the other hand, it lacks the immersive element when it comes to real-time integration with sensors. Some researchers prefer to build their own framework from the ground up (Barbosa, 2014, Dawley & Dede, 2014, Galland et al., 2014, Avancini, 2012). Although this is a more resource-consuming method, it gives them the possibility of implementing special customization features that are otherwise unavailable in *Second Life* and other popular platforms.

Virtual platform description

Game and level Design

To meet our goal, we developed a 3-dimensional urban environment (Bhattacharya, Paul & Goon, 2012, How to use 3D content in simulations, 2014). The VE does not correspond directly to any actual place on the map. It was designed to meet specific goals –situations diversity, obeying traffic rules, giving appropriate signals on and near the road.

The environment itself is a small city "sandbox". It is comprised of urban buildings – private houses, block apartments, administrative public service buildings – schools, kindergartens, libraries, a sports center and a shopping mall. In addition, we put together a working and realistic traffic system. Furthermore, we developed a simple vehicle artificial intelligence (AI), which contributes to the immersion and realism of the simulation. Finally, we designed a player's avatar and the way it interacts with that environment.

The visual style that we picked is not a realistic-looking one. It is rather cartoon-looking because our target are young children and we wanted them to have fun and feel

more like playing a game, rather than training in a virtual environment. To achieve this goal we not only had to use cartoonish color palettes, but also design the 3D objects and the avatar to look attractive to children in terms of size and proportions. For instance, the avatar's head is unusually large compared to its body. This serves an additional purpose as well. While the user is looking left and right in front of a crosswalk for incoming traffic, the classroom and teachers are able to better distinguish which way the avatar's head is rotating. This feature allows for a better understanding of the child's behavior and timely corrections of any misbehavior. Brain research scientists (Knickmeyer et al., 2008, Johnson, 2005) have shown how important learning how to properly check for traffic is in the early years of one's development – 85% of the human brain develops during the first 5 years of our lives (National Research Council and Institute of Medicine, 2000).

We have designed and implemented a total of 10 gameplay situations (levels) including a tutorial level for using the NUI interface. The gameplay levels are modeled as possible scenarios of a child's everyday life – getting from school home, going to the library to get a book, waiting for the bus at the bus stop, cycling to the gym, etc. Each learning situation has a different level of difficulty. We begin with simple and short routes with a walking avatar and move to a cycling avatar and more complex routes. In the main game menu each level is represented by a number (from 1 to 10). In addition, there is a different number of star icons next to each level indicating its difficulty. The notation is: the more stars, the more complex the level is. Another indication on the main menu is whether the level is a walking or a cycling one – we have put cycling icons next to the bicycle levels.

Navigation

The navigation system we implemented inside the game is pretty straightforward. We got ideas from other games (such as GTA), Google maps, and GPS systems. The user follows in-game markers [Figure 1] and on reaching each of them the user is shown the next one on the route. Since the goal was to make the game appealing to children, the last marker is in the form of a league cup [Figure 2]. In order to provide additional insight of where the user was in the level, we implemented a mini-map showing the user their exact location and the outline of the whole route. The mini-map is accessible via the pause in-game menu [Figure 3].

Figure 1. User interface and explanation of gameplay elements

Figure 2. End game marker is a league cup!

Figure 3. In-game pause menu. The mini-map is drawn at the center of the menu, showing also the player's position and route

Scoring system

For evaluating children's total performance we developed a point-based scoring system. Every time the user behaves in a safe and appropriate manner, their actions are rewarded with positive points. Misbehavior and dangerous actions are discouraged by taking points away. The total accumulated score a user can get by the end of a level equals 100. a score of 80 and more is considered a pass, i.e. the child is capable of moving safely in an urban traffic environment. If a child's actions are done by the book – they have collected all the rewards and no negative points were assigned – the child receives a special reward, applause, at the end of the level.

Visually, the points can be seen in the upper-right corner of the game screen. To make them more appealing to young children, we put them inside a star. At the end of a level, another screen appears [Figure 4] – the so called *end game screen*. It summarizes the performance of the user throughout the level and shows the final score.

Figure 4. End game screen and total score

Artificial Intelligence

In order to make the game more realistic, we added a simple artificial intelligence to the street vehicles. Vehicles are able to "see" some meters in front of them. They react to traffic lights, crosswalks, or other vehicles in front of them. If, for instance, an avatar is on a crosswalk, an approaching vehicle will decelerate and stop by the crosswalk [Figure 5]. On the other hand, if the avatar crosses spontaneously or on red lights, an approaching vehicle will still stop but will force its engine and honk its horn as a symbol of disapproval of the avatar's actions. Even though such vehicle behaviors are hard-coded, they add to the overall user experience and bring realism to the simulation.

Figure 5. Vehicle AI – a car stops while the avatar is on the crosswalk

Sensory inputs

Humans are not designed to work with devices such as a mouse and a keyboard. Yes, we have learned and adapted but it still feels "unnatural" to most of us. Fortunately, in the last 5–7 years, both proprietary companies and independent researchers are pushing our interactions with machines further towards creating a more natural and human-like interfaces. That "push" has led to the appearance of new devices that tend to shorten the gap in human-computer interactions. Examples of heads-up-displays that help create virtual and augmented realities are Microsoft Hololens, Google glasses, Oculus Rift, and Sony's Project Morpheus. There are some other sensors that focus more on capturing and processing human gestures. Such devices are Microsoft Kinect, Asus's Xtion sensor, and Leap motion. Although these sensors employ different approaches (in terms of how they work), their general purpose is the same.

A decision was made to use Kinect as the sensor for processing natural user gestures. This choice of technology was not an arbitrary one. The capture range of Kinect is from 2 to 6 meters (Avancini, 2012, Kinect – Windows app development, 2016), which is far greater compared to the Xtion and Leap motion sensors. In addition, Kinect has a vertical tilt motor, which allows for automatic calibration and an additional degree of freedom, compared to the Xtion. Although Xtion has a slightly better infrared depth camera, its API is not as widely supported and integration with a gaming platform was not going to be trivial. On the other hand, Kinect had a plug-in that can be directly integrated into the game engine we used.

The data that Kinect provided could not be directly used for our avatars – we could not simply map the skeletal tracking data to the 3D rigged skeleton of the avatar.

A different approach was chosen – instead of directly moving the avatar's skeleton, we decided to use pre-recorded avatar animations and 'trigger' them at the appropriate time. For instance, walking on the spot triggers a 'walk' animation; taking a step backwards triggers 'a step backwards' animation and so on. The only notable exception was when we implemented the looking left and right before a crosswalk. For that to work, we had to use the raw position of the user's head because it was changing very rapidly. Another tweak we did was to cap the avatar's head rotation to a certain degree, since the avatar's head was able to rotate to a greater angle than the user's. That trick saved us from visually abrupt and unnatural 3D motions.

In addition to the core movement gestures, we added several helper ones. Pausing the game, for instance, is achieved by making a "safe haven" gesture [Figure 6]. Our empirical research has shown that this is a very common notion among youngsters. Another feature we added helps physically challenged children. People on a wheelchair that are able to move their hands and head are still able to play in the simulator and learn. From the in-game options menu, one could 'lock' part of the controls, so that only the upper-body skeletal data is captured and processed. Moving the avatar forward and backwards in this mode is achieved by a regular keyboard. Unfortunately, we did not get the opportunity to field test this mode on any physically-challenged students. We only tested it in a controlled environment by ourselves, sitting in a chair.

Coming up with different gestures was a challenging task but at the end we did manage to cover all possible in-game interactions.

Figure 6. Pause game gesture – safe haven

Frame-rate optimization

The simulation was needed to run in 25–30 fps on a low-end machine. Unity 3D by itself is able to achieve such rendering speeds but adding a Kinect sensor into the setup made that task a challenging one. The Kinect device is bound to 30 fps and even lower (15 fps) in low-lighting conditions (Kinect – Windows app development, 2016). We had to optimize not only the capture, drawing on the screen, and skeletal data tracking but also the visual style and the quality of the scene.

The first thing we noticed was that the Kinect plugin we used draws the user on the game screen together with the overlaid skeletal tracking data. We tried out several techniques to speed up the user gesture data rendering. One of our initial moves was to just cut-out the Kinect rendering window at all. That did improve the frame rate but the users lost a feedback system to show what gestures they have performed. This led us to try a different approach. Instead of eliminating the Kinect rendering window, we decided to show only the skeletal tracking data, drawn with the help of connected yellow lines [Figure 7]. That trick did improve rendering performance but again the feedback we fed to the user was not good enough. Finally, we decided to keep the user image and draw only the skeletal points that the Kinect sensor captures [Figure 6]. Reducing the resolution of the Kinect drawing window was another optimization that we were able to do – the user did not need to see his captured image in high detail. Moreover, we only draw every second captured frame in the Kinect rendering window.

Figure 7. Optimizing Kinect skeletal data drawing window

Optimizing rendering features was another challenge. Enabling antialiasing, for instance, did drop a few fps. Controlling special effects, such as depth of field, drawing (view) distance, motion blur, bloom, etc. allowed us to get a better handling of the rendering pipeline. We were forced to use low-detail level geometry and compensate with better-looking textures. In general, we did not use complex shaders for the scene – the visual style was cartoonish and so the emphasis was not on realism. With all the mentioned optimizations implemented, we were able to boost the frame-rate to 30–32 fps on a low-end machine (CPU: Intel Core 2 Duo @ 2.6 GhZ, RAM: 2GB DDR 3, Video: 512 MB, OS: Windows 7).

Results

The game was initially shipped and tested in more than 50 schools and kindergartens in Bulgaria. These production tests allowed us to gather additional feedback data for the game. The research was conducted on children from 6 to 10 years old of both genders – M(ale) and F(emale). The evaluation criteria were several: how easy it is to control the mouse and the avatar, and how many points the child was able to gather at the end of the level (game score is form 0 to 100 points). The last column shows whether the child scored over 80 points, at which point the level is considered a 'pass'. An excerpt of the evaluation results is presented in Table 1.

Age	Gender	Controlling the avatar	Controlling the mouse cursor	Game Score (1–100)	Level Pass (80+ points)
6	M	Difficult	Difficult	86	Yes
6	F	Difficult	Difficult	73	No
6	F	Difficult	Difficult	100	Yes
7	M	Difficult	Difficult	96	Yes
7	F	Easy	Easy	83	Yes
7	M	Difficult	Easy	90	Yes
8	M	Difficult	Difficult	84	Yes
9	F	Easy	Easy	100	Yes
10	M	Easy	Easy	100	Yes
10	F	Easy	Easy	96	Yes

Table 1. Evaluation test results

Analysis and discussion

What we found out was that younger children had difficulty to walk and rotate at the same time. They stop, rotate on the spot and continue in the new direction. This is most likely due to the fact that their fine muscle coordination is not fully developed yet. Older participants show that they are better at rotating while moving. We plan to solve this by integrating a VR headset (such as Oculus Rift) so that younger participants can rotate more naturally, i.e. with their head instead with their head and shoulders. We also noticed that some gestures are more intuitive and easy to perform than others. For instance, the gesture for "safe haven" is easier to perform than the gesture for "pushing a button". In addition, we noticed that the use of simpler gestures is preferred over more complex ones. We plan to address those issues in the future development of the virtual platform. Another shortcoming of our approach was the fact that younger children had difficulty to steadily move their hands while selecting options from the menu. As a result of this feedback, we added additional menu navigation options, such as holding one's hand still over the desired option for five seconds in order for the option to get selected. Other than the issues addressed above, we observed no difficulties for the children interacting with the virtual platform.

Future work

The platform presented in this paper is not perfect. Future upgrades may include adding new gameplay levels that further improve the students' behavior near and on the road. We also thought about using different sensors (such as Oculus Rift) to increase the immersion depth of the user's reality perception. In addition, further research may show that some gestures are generally preferred over others. The choice of the "button activation" gesture, for example, seems difficult to perform for most children. On the other hand, we've noticed that the Kinect sensor recognizes some gestures better than others. This may be partly because of the low resolution of the Kinect' RGB camera (640 x 480 px). We would like to see how the Kinect 2.0 performs with the current implementation of the virtual platform, since it has a better resolution of the RGB camera (1920 x 1080 px). The other reason why we plan to use the Kinect 2.0 in the future is that version 1.0 will no longer be supported or manufactured.

Conclusion

In this paper we have presented a successful proof-of-concept that a NUI can be integrated as part of game design in order to produce an immersive virtual educational environment. Furthermore, we showed that VE can be a safer way for children to learn

when compared to learning in the physical world. As we demonstrated, gaming in education is a fast-morphing field of study. We saw that games present a natural environment for learning and that children can be beneficial for interacting in such virtual worlds. In addition to physical safety, the virtual platform is a time and energy saver for a teacher. That being said, we believe that the future of education lies in simulation environments and NUI sensors.

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Summary

Education and self-improvement are key features of human behavior. However, learning in the physical world is not always desirable or achievable. That is how simulators came to be. There are domains where purely virtual simulators can be created in contrast to physical ones. In this research we present a novel environment for learning, using a natural user interface. We, humans, are not designed to operate and manipulate objects via keyboard, mouse or a controller. The natural way of interaction and communication is achieved through our actuators (hands and feet) and our sensors (hearing, vision, touch, smell and taste). That is the reason why it makes more sense to use sensors that can track our skeletal movements, are able to estimate our pose, and interpret our gestures. After acquiring and processing the desired – natural input, a system can analyze and translate those gestures into movement signals.

Keywords: simulators, virtual environments, 3D environment, serious gaming, sensors, education with Kinect.

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Who Is the Note-Worthy Fan? Featuring Players in the Official Facebook Communication of Mainstream Video Games

Fans are an essential part of video game culture. As such, they also find their way into promotion of video games, either willingly or unknowingly. In the article we aim to enrich the current understanding of fan-producer relations by providing a quantitative overview of official Facebook communication of four mainstream video games (in chronological order): *Dragon Age: Inquisition* (BioWare, 2014), *Evolve* (Turtle Rock Studios, 2015), *Mortal Kombat X* (NetherRealm Studios, 2015) and *The Witcher 3: Wild Hunt* (CD Projekt Red, 2015). Using content analysis, we explore the frequency at which fans appear on official Facebook pages, what types of fans they are, and whether they are given credit for their creations. By combining these findings with the basic metrics of user activity collected by Netvizz (Rieder, 2013), we are also able to see if these communication strategies generate greater or lesser user activity than regular promotional posts.

Firstly, the appearance of players and fans and their creations in the official communication relates to a broader topic of participatory culture (Jenkins, 2006). The use of fan art or cosplay can be seen both as empowerment of fans (Milner, 2009) and as exploitation and free labor (Dijck & Nieborg, 2009; Terranova, 2000). While we are not primarily interested in the users' perception of these practices, the approach to disclosing information about fan artists and giving them credit as authors of such artworks may be studied on a quantitative level and might show the producers' stance towards the authorship of fan creations.

Secondly, the article deals with the question of gaming capital (Consalvo, 2007). However, we approach it from a very specific perspective of the professional communicators employed by video game companies who run the official Facebook profiles of video game franchises. Still, the selection of fans and fanworks on social media might show what developers and publishers understand as fan capital and, in consequence, which fans are note-worthy enough to be featured in the official communication.

Lastly, the article explores the question of ethics and fan privacy. Recently, Bennett, Chin and Jones (2016) have explored the questions of the use of fan works outside of their original contexts without permission, showing a growing interest of various stakeholders – from the general public to producers and journalists – in fan cultures and fanworks. Video game companies are no exception to this trend; they often organize fan contests and sometimes even feature fan art in games as unlockables and extras, for example in *Mortal Kombat X*. These acts of capitalization on fan activities are often concentrated around social media; fans are explicitly encouraged to share their content on sites like Facebook, Twitter and YouTube, which then serves as a promotional tool for a given cultural brand (Helens-Hart, 2014; Stork, 2014).

Research Design and Methodology

Based on previous, mostly theoretical or qualitative research, we have identified three aforementioned areas connected to the topic of fans in official promotion of video games. The issues of exploitation, fan capital (in this case, the cultural capital perceived by employees of video game companies), and ethics are explored through the following research questions.

- *RQ 1: How prominently are fans and fanworks featured in official social media of video games compared to traditional promotional content?*
- *RQ 1.1: How much engagement is generated by posts featuring fans and by traditional promotional posts?*
- *RQ 2: What types of fans are featured in official social media profiles?*
- *RQ 2.1: Are there gender differences among fans and types of fans and their appearance in social media?*
- *RQ 3: How is the authorship of fanworks treated in the context of social media through the practice of attribution and credit?*

Empirical inquiry into producer-fan relations is currently lagging behind the ever-shifting practice, however, scholars have recently explored the questions of crowdfunding (Smith, 2015) and prosumption (Siuda, Troszynski, 2016) in the context of

video game industry. The article aims to develop the understanding of these relations in the case of official promotion via social media sites. Due to the lack of previous quantitative research efforts, our design is mostly explorative and descriptive as it marks the first attempt to rigorously map the appearance of fans in the social media of the video game industry. Still, we believe that this design provides a necessary starting point for more detailed analyses into the role of fans in video game promotion not just as recipients but also as participants.

The aforementioned research questions serve as a basis for operationalization of five content variables – (V1) presence of a fan, (V2) gender of a fan, (V3) type of a fan, and (V4) forms of art if V4 is coded as an artist, and (V5) attribution to a fan.

The empirical material consists of all official posts from a one-year long period (August 1, 2014 to July 31, 2015) on the official Facebook profiles of four selected mainstream games: *Dragon Age: Inquisition*, *Evolve*, *Mortal Kombat X* and *The Witcher 3: Wild Hunt*. The sample was constructed to contain different types of mainstream video games which were published during the analyzed time period, both primarily single-player (*Dragon Age: Inquisition*, *The Witcher 3: Wild Hunt*) and multiplayer (*Evolve*, *Mortal Kombat X*).

The whole population of 2,015 posts was collected using a data-mining tool Netvizz (Rieder, 2013). Following the data collection, we have conducted a two-step content analysis (Krippendorff, 2004a), which was carried out by the authors (two coders with equal distribution of coding units). The intercoder reliability was tested using a widely accepted index of Krippendorff's α (Feng, 2014; Krippendorff, 2004b; Lombard, Snyder-Duch, & Bracken, 2002).

In the first step, we coded for presence of a fan (or a group of fans) in a Facebook post, taking into account its multimodal form (Norris & Maier, 2014), including textual, visual and audiovisual information. This inquiry was operationalized using a binary variable (presence/absence) and first tested for intercoder reliability on a 10% sample (202 randomly selected units) with a score of 0.769 α which is deemed sufficient and reliable (Krippendorff, 2004b; Lombard et al., 2002). Our understanding of a fan is based on assumption that any player can be portrayed and understood as fan in the official communication except for the developers, publishers, and journalists who are presented in their official capacity.

Out of the whole population, 338 posts were identified as featuring fan(s) and these posts were subjected to the second round of content analysis. All following variables were first tested on a 14.8% sample (50 randomly selected units) for intercoder reliability using the index of α: gender of fans (four categories, α = 1), fan type (seven cate-

gories, α = 0.776), art forms (seven categories, α = 0.935), credit (binary, α = 1). All the reliability scores were calculated using the ReCal web service (Freelon, 2010).

Apart from the content analysis, we were also using additional metrics collected by Netvizz, especially the overall measure of engagement which is a sum of all the following user activity: likes, comments, replies, shares, and comment likes (Rieder, 2013).

Promoting Video Games on Facebook

First of all, it is necessary to look at the specificities of the four social media profiles in question. *Mortal Kombat* as the video game series with the longest tradition (the first instalment was released in 1992) has the largest following among the sample, followed by the two established role-playing game franchises *Dragon Age* and *The Witcher*. The only new intellectual property, *Evolve*, has the lowest number of fans on Facebook (see Table 1). The official communication strategy also differs for the four games. *Evolve* has created the highest number of original posts, followed by *Dragon Age* and *The Witcher*. The administrators of *Mortal Kombat* Facebook profile were the least active in this regard (see Table 1).

	Number of fans*	Number of posts
Dragon Age: Inquisition	1,325,000	495
Evolve	309,000	745
Mortal Kombat X	5,718,000	255
The Witcher 3	1,014,000	520

* Number of fans as of August 2015

Table 1. Overview of social media activity

Looking at the user activity on the four sites, one can see a clear lead of *Mortal Kombat* with the total engagement nearing 5 million user interactions over the period of one year (see Table 2). Such a relatively high number compared to the other three games can be explained by the big fan following of *Mortal Kombat* which surpasses *The Witcher* and *Dragon Age* roughly five times. The lesser amount of posts also yields comparatively higher scores of the average (mean) engagement per one post. Note that *Dragon Age* and *The Witcher* have nearly identical scores in the measures of engagement and engagement per post suggesting that these two games have similarly active fan bases and also share a basic approach to social media communication regarding

the volume of posts. Lastly, using the score of engagement per fan, we attempted to account for the different-sized fan communities on Facebook. Here, one can see that *Evolve*'s fans are on average the most active with a score of 2.88, meaning that on average one official fan of *Evolve*'s Facebook official page interacts 2.88 times per one post by liking, sharing, commenting, replying to a comment, or liking a comment or a reply. The lowest score of *Mortal Kombat* can be to some extent explained by the time decay due to a large number of fans who might have not visited the *Mortal Kombat* Facebook page for a longer period of time. The attribute of time decay was considered to be one of the aspects determining the visibility of posts on Facebook in the era of EdgeRank (Bucher, 2012) and supposedly also influences the new News Feed algorithm (Rader & Gray, 2015).

Visibility as well as sponsoring and promoting of posts might potentially influence engagement. Potential interpretations of user engagement data without the actual knowledge of the underlying algorithms and budgets spent on promoting certain posts are always limited. However, we would argue that all the games in question belong to a rather homogenous subset of video game industry and that their promotional strategies operate on a comparable scope. Under this assumption, we deem this basic descriptive overview of user activity relevant.

	Engagement	Engagement per post	Engagement per fan
Dragon Age: Inquisition	2,353,809	4,755.17	1.78
Evolve	891,435	1,196.56	2.88
Mortal Kombat X	4,753,427	18,640.89	0.83
The Witcher 3	2,478,428	4,766.21	2.44

Table 2. Overview of user activity

Featuring Fans

The initial round of content analysis showed that within the whole population of Facebook posts only 17% featured fans or fanworks (see Table 3). The highest frequency of "fan posts" was found on *The Witcher*'s page, followed closely by Evolve. Both *Dragon Age* and *Mortal Kombat* showed a rather low amount of fan presence (8%). This finding was rather surprising, especially in the case of *Dragon Age*, considering the regular weekly features of the so-called Fan Spotlight on *Dragon Age* social media and websites (see BioWare, 2015). This approach might signal a more systematic treatment

of fan topics – fans themselves know when to expect fan-related content. They also get a secure and regular spot in the official communication and their fanworks are not used as a filler whenever there is not enough original promotional content.

Arguably, the information about the amount of "fan posts" provides only a very limited insight into the actual treatment of fans. Still, it serves as a testimony of the frequency of fan appearance or exploitation within promotional communication of video games on social media.

	Posts	Fan Posts	Percentage
Dragon Age: Inquisition	495	38	8%
Evolve	745	154	21%
Mortal Kombat X	255	20	8%
The Witcher 3	520	126	24%
All	2,015	338	17%

Table 3. Overview of fan posts

The next chart (see Chart 1) shows a chronological distribution of all the posts and the fan posts within the one-year period. The overall number of posts has a rising tendency ending in May 2015 when the last game of the sample (*The Witcher 3: Wild Hunt*) was released. The bigger activity preceding the launch of a video game is quite expected considering the cycles of video game production (Carlson, 2009). However, the relatively low numbers of fan posts in the release months of the individual games (November, February, April, and May, respectively) also suggest that in these stages of video game development, official content such as trailers (Švelch, 2015) is used for promotion instead of fans and fanworks. The highest number of posts featuring fans in August can be explained by the Gamescom video game trade fair which serves as an opportunity for cosplay and other fan activities.

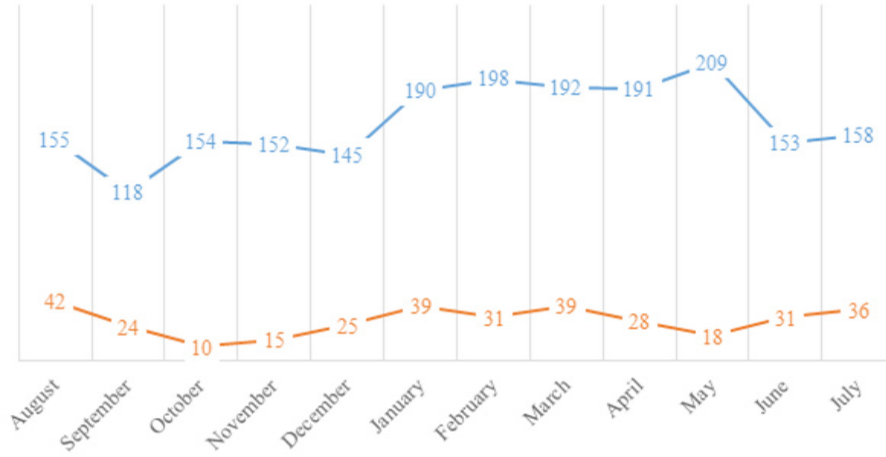

Chart 1. Chronological distribution of all posts (blue) and fan posts (orange)

Fan Types

In the second step of the content analysis, we have closely examined the types of fans that were featured in social media profiles. The typology of fans is based on our previous research on fan creations in official promotion of video games (Švelch & Veselá, 2014) consisting of the following seven categories: (1) artist, (2) competitive player, (3) streamer/YouTuber, (4) celebrity, (5) conference attendee, (6) amateur walkthrough/guide/wiki maker, and (7) other.

The artist was the most frequently featured type of a fan on Facebook (57%), followed by the competitive player (19%) and the streamer/YouTuber (16%); other categories were represented only marginally (see Table 4). Fan artists were dominant nearly across all the games while competitive players were understandably present only in multiplayer games *Evolve* and *Mortal Kombat X*. Streamers on Twitch and YouTube were often featured on *Evolve*'s Facebook page during the alpha and beta versions of the game development. These findings suggest that the perceived fan capital among the administrators of social media profiles is first influenced by the overall visual culture of Facebook (boyd, 2011) and then by specificities of a given game which allow for emergence of a more traditional gaming capital, such as power gaming (Consalvo, 2007).

	Artist	Competitive Player	Streamer/ YouTuber	Conference Attendee	Celebrity	Other
Dragon Age: Inquisition	33	1	0	0	0	4
Evolve	36	57	40	11	7	3
Mortal Kombat X	12	7	1	0	0	0
The Witcher 3	112	0	12	1	0	1
All	193	65	53	12	7	8

Table 4. Overview of types of featured fans (n = 338)

Forms of Art

Considering the prominence of fan artists, we have also coded for specific forms of art (or fanworks) featured in social media profiles roughly. In this respect, we employ an arguably limited definition of art as a rather traditional assortment of literary and visual arts along the lines of what one can find on community websites such as DeviantArt. Other types of art are partly included in the previous distinction of fan types, e.g. streamers and streaming can be understood also as performance art. However, game-specific art of modding wasn't featured in any of the posts (according to our classification it would have been coded as other fan type).

We have constructed a basic typology of fan creations consisting of seven categories: (1) painting (including drawing and computer art), (2) sculpture (including statues, figurines, and replicas), (3) cosplay, (4) fan fiction, (5) music (including music videos with original music), (6) video, and (7) other. First of all, the complete absence of fan fiction, otherwise a very traditional form of fanwork (De Kosnik et al., 2015; Hellekson & Busse, 2006), suggests that it is not perceived as a good promotional tool. On the other hand, the visual forms of fan art and cosplay seem suitable for Facebook and together account for 79% of all featured fan creations (see Table 5). The arguably high number of items coded as "other" is again caused by Dragon Age Fan Spotlight posts which often consist of a variety of different fanworks including music and music videos, cosplay, and various types of sculpture.

	Painting	Cosplay	Music	Statues/ Replicas	Video	Other
Dragon Age: Inquisition	6	0	1	0	1	25
Evolve	29	6	0	1	0	0
Mortal Kombat X	10	2	0	0	0	0
The Witcher 3	52	47	6	6	1	0
All	97	55	7	7	2	25

Table 5. Overview of types of featured fan creations (n = 193)

Engagement

A closer look at the average (mean) post engagement uncovers why fans are featured in social media in the first place. While "non-fan posts" generate the highest engagement on average (see Table 6), the subcategories of painting and cosplay surpass them in the number of likes and come close in the combined score of engagement. However, one should always be careful when interpreting user activity without information on post promotion, as we have already mentioned.

	Likes	Comments	Shares	Engagement
Non-Fan (n = 1645)	3985	576	563	5752
Fan (n = 338)	2420	121	120	2854
Painting (n = 97)	4687	174	216	5481
Cosplay (n = 55)	4044	140	169	4652

Table 6. Average (mean) Facebook user activity per post

Gender

We have coded for gender of featured fans distinguishing four categories: male, female, queer, and unspecified. Unlike other variables, we were also looking for additional information about gender of fans on their DeviantArt profiles if a link was included in the original post. First of all, there were no queer fans, such as crossplayers (Leng,

2013).[1] While male dominance (Shaw, 2010) was confirmed in the general category of fans (67%, n = 141), among cosplayers women were the majority (76%, n = 37). This discrepancy suggests that mainstream video game fandoms are still mostly male or at least perceived and portrayed in this way by social media administrators. Featuring women as cosplayers might be caused by two conflicting but not mutually exclusive tendencies of objectification of the female body within video game culture (Cassell & Jenkins, 2000) and calls for a greater gender and sexual inclusion heralded by, among others, the developers of *Dragon Age*, namely by the former lead writer David Gaider (2013).

Credit

Lastly, we explored whether fan creations were attributed to particular fans or used as mere illustrations. Regarding the third research question of the treatment of fan authorship, 75% out of total 338 "fan posts" were attributed to the original authors. This proportion applies to the whole sample, except for *Dragon Age* where it was exactly the opposite. Only 26% out of 38 posts which featured fans also credited them; however, this discrepancy was caused by the coding process.[2] The posts about Fan Spotlight (26 in total) do not disclose information about fans on the social media page but they provide credit at the official website which hosts the whole article. Altogether, these findings suggest a respectful approach of social media teams towards fanworks and fans, whose ethos of sharing and intellectual property is based on attribution to original authors rather than the actual copyright law (Tushnet, 2007).

Discussion

The presented results allow us to think of a prototypical fan post used in the official promotion of video games. Firstly, it most likely features a fan artist, either a painter or a cosplayer. Secondly, such a fan is male unless it's a female cosplayer. Lastly, their work is credited, often with a link to their DeviantArt site or Tumblr blog. The rhetoric of featuring fans in social media seems simple in its aim of community building and brand management. Creativity of fans highlighted in Facebook posts serves as evidence to the popularity and positive reception of a given game. Featured fanworks are also used in motivating other players to participate actively in fandom and create their own art, and share it with video game companies.

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1 Crossplay is a subversive variation on cosplay, however with switched genders, e.g. women cosplaying male characters.

2 Regarding the variable V3 (attribution to a fan), the coders took into account only the information available in a Facebook post.

Fan Exploitation

All cases of fan posts can be easily interpreted as exploitation of fans by the official producers. Academic reflection on these complex fan-producer relationships has a strong tradition of such critical perspectives (Dijck & Nieborg, 2009; Terranova, 2000). However, Milner has already argued against this protective position of critical theorists pointing to the autonomy of fans: "While scholars have altruistically wondered about the exploitation of fans by producers, *Fallout* fans would rather be financially exploited than have their immaterial labor ignored" (2009, p. 505)

Recently, Fast, Örnebring and Karlsson (2016) have attempted to provide an exhaustive overview of unpaid labor in the media sector. Their historically-grounded typology deals with potential motivations and the actual work tasks of actors performing free labor. Out of the seven proposed metaphors, the Hobbyist and the Apprentice relate the most closely to fan creations and their authors. The Hobbyist's reward "is affective: being paid in fun" (Fast et al., 2016, p. 9). However, some fans "take pride in developing their skills and dream of turning their hobby into a profession" (Dijck, 2009, p. 51), mirroring the motivations of the Apprentice. Emergence of fan-focused crowdfunding projects, for example the notorious fan porn creators Studio FOW (Hernandez, 2015), shows that video game fans can be easily understood as the Apprentices.[3] However, their goal does not necessarily have to be employment within a video game company – fan projects can be sustained by financial support of other fans outside of the traditional economic structures thanks to platforms such as Patreon.

Considering the ethos of the so-called fannish gift economies (Booth, 2010; Hellekson, 2009) and the official communication, which often emphasizes the communal aspect of fandom, the metaphor of the Carer also applies to the topic of featuring fans in social media. In this context, Fast et al. explicitly mention that "[m]edia companies frequently attempt to leverage the community ties" (2016, p. 6) of fandom:

"Social networking sites rely on the creation and maintenance of affective ties in order to create value, and thus the active maintenance of social networks (e.g. through posting links and content, encouraging comments, or birthday greetings) could also be considered a type of free labor provided by Carers" (Ibid.)

However, we would argue that the call for community building and maintenance within creative fandoms surpasses the traditional activities connected to social media (liking, commenting, and sharing of official content) as it also encompasses creation

3 Still, media companies are able to capitalize on these fan aspirations by promising fan empowerment. For example, Fox offered interaction with the cast of the TV series *Glee* to the active members of the so-called Gleek community while generating buzz for the show in social media (Stork, 2014).

and subsequent sharing of original fanworks. In consequence, these featured fanworks initiate another round of community building through subsequent discussion, dissemination and evaluation, as it was already pointed out by Helens-Hart (2014), who had explored the strategies of the TV series *Tosh.0* aimed at motivating fan labor.

The often mentioned benefits of the convergence between fan and producer activities for the media industries (Dijck & Nieborg, 2009; Fast et al., 2016; Helens-Hart, 2014; Stork, 2014) have to be to some extent pursued by producers in order to generate value. Recent exploration of Polish pop culture industry including the video games segment (Siuda, Troszynski, 2016) and our own results suggest that such interactions are in fact beneficial and are identified as such by video game producers.

Perceived Fan Capital

The issue of cultural capital[4] is closely tied to the differences between particular types of fans in the context of social media promotion. However, we approach the underlying question of gaming capital[5] (Consalvo, 2007) from a perspective of video game companies. In consequence, we do not deal with the gaming capital itself as a figurative currency of players within video game culture but as perceived gaming capital manifested in the official communication of video games. Still, such an inquiry can shed light on the shared understanding of gaming capital within mainstream video game culture. At the same time, the perceived cultural capital of a fan is potentially strengthened by their inclusion in the official promotion.

While examining differences between fan types, one should not overlook the hierarchical structures of fandom, whose members often distinguish between acceptable and merely tolerated fan activities, especially in relation to gender. Gaming culture has been repeatedly labeled as male-dominated and heteronormative (Cassell & Jenkins, 2000; Mortensen, 2016; Shaw, 2010; Trammell, 2014), which also influences the notion of cultural capital. According to Busse, "affect and forms of fannish investment get policed along gender lines, so that obsessively collecting comic books or speaking Klingon is more acceptable within and outside of fandom than creating fan vids or cosplaying" (2013, p. 75) On the other hand, cosplaying fans have started attracting public attention and media coverage in recent years (Leng, 2013). While cosplayers

4 Castronova (2008) also identifies avatar capital in the context of video game culture.

5 For example, Consalvo (2007) has explored how expert knowledge about games contributes to the cultural capital of gamers, which is further established through gaming media and paratexts. In this perspective, skilled gamers such as professional e-sports competitors represent a privileged group within video game cultures.

might be discriminated within the traditional fandom communities which follow patriarchal structures, our results prove that they might be valuable for video game publishers, especially in the context of visually-driven social media. As we have already mentioned, featuring cosplay – a traditionally less respected form of fan activity – might be motivated either by the heteronormative practice of objectification of the female body or the calls of greater inclusivity in fandom.

The Ethics of Using Fan Cultures

While video game producers attribute most of featured fanworks to their creators, it does not automatically mean that these creations are used with explicit permission from the fans. Bennett et al. (2016) have pointed to the risk fans undertake when they upload their creations on publicly accessible websites such as DeviantArt or Archive of Our Own. Fanworks are shared in specific contexts and fans often "perceive the space where they create their artworks as closed" (Busse & Hellekson, 2012, p. 38), even though that is rarely the case. Therefore, it is understandable that fans sometimes try to protect their works by explicitly prohibiting any use without permission.[6] However, the vague legal regulations of the fair use doctrine regarding derivative and transformative works (Schwabach, 2013) create paradoxical situations where the official producers might be in some cases entitled to such use of the fan creations as the rightful owners of the original intellectual property.[7] According to Schwabach, currently "neither fans nor content owners truly understand the boundaries of fair use in fan works, [this situation] benefits neither" (2013, p. 92). In consequence, both fan artists and producers navigate a very tricky legal landscape, where the legal implications of their actions are difficult to understand and are largely dependent on good will and understanding from both sides of a potential conflict.

However, fan contests bypass the aforementioned grey zone by introducing legally binding contracts between contestants and video game publishers. For example, the *Dragon Age*: Fan Celebration Contest, which started in January 2015 and lasted until February 2015, was meant to "show our gratitude for our awesome community" according to the original copy (*Dragon Age: Inquisition*, 2015). The contest itself was promoted by other fan creations: "Throughout the contest, we will showcase several entries on *Dragon Age* social media sites to encourage creativity and inspire more fans

6 Authorial captions of fan creations also often contain disclaimers which acknowledge the copyright of the original owners of an intellectual property (see Tushnet, 2007).

7 This relates especially to fanworks that portray characters, objects or plot points which can be copyrighted as opposed to game mechanics (Lastowka, 2013).

to participate." Ultimately, participation in such contests means giving nearly unlimited license to organizers allowing them to use submitted fanworks for promotional and marketing purposes:

"Uploading a Submission constitutes entrant's consent to give Sponsor a royalty--free, irrevocable, non-exclusive license to use, reproduce, modify, publish, create derivative works from, and display such submissions in whole or in part, on a worldwide basis, and to incorporate it into other works, in any form, media or technology now known or later developed, including for promotional or marketing purposes" (*Dragon Age: Inquisition*, 2015)

In the analyzed period, there were more fan contests organized for the selected games, including three separate events for *The Witcher 3: Wild Hunt* focusing separately on fan art, cosplay and screenshots. *Evolve*'s social media team informally encouraged players to share their own content (Evolve, 2015). This way, producers get unconditional access to fanworks, which they can later use for promotion. In return, fans are offered greater visibility – potentially resulting in increased cultural capital – and a chance to win special prizes, usually consisting of collector's editions of a game, brand merchandising, or gaming hardware. In very rare cases, talented fans are asked to become official employees of video game companies, further strengthening the narrative of a fan as the Apprentice (Fast et al., 2016).[8]

Limitations

The presented analysis has certain limitations resulting both from the choice of the material and the method of content analysis. Firstly, the sole focus on Facebook as the example of social media promotion might potentially misrepresent overall producer strategies relating fans and use of fanworks. Twitter, Tumblr and official websites also present relevant sites for research. This limitation has manifested especially in the case of *Dragon Age: Inquisition* which was promoting fan creativity on its own website in the so-called fan spotlights. The official Facebook page was often used just to bring attention to new fan-related content on the official website, working as a mere paratextual link (Švelch, 2016). Secondly, the limitations of the method are closely tied to the aforementioned case as the complex approach taken by BioWare eludes the coding instructions and makes *Dragon Age: Inquisition* an outlier, especially in the context of art type variable. Therefore, the lack of cosplay category in Table 5 does not necessarily

8 For example, Patryk Olejniczak won the *Mass Effect* fan art contest in 2011 and was offered a job of concept artist at BioWare, effectively gaining not only recognition among his fellow fans but also a chance to co-create the object of his fandom.

mean that BioWare does not support such fan interactions, just that it presents them in different venues and combined with other types of fanworks. The content analysis also limits the interpretations of the three main topics – exploitation, gaming capital, and ethics – regarding the perspective of fans themselves as the material is connected to the producer side of these relations. Thus, we can only talk about, for example, perceived gaming capital of fans.

Future works might address the aforementioned limitations, for example the fan perception of such social media promotion. Other potential research topics might include the official communication strategies and guidelines (especially regarding cosplay and gender) for social media and also other sites such as Twitter, Tumblr or Instagram.

Conclusion

Addressing the titular question, we argue that a note-worthy video game fan in the context of social media promotion is a fan artist who either creates visual fanworks or engages in cosplay. Even though fans were only featured in 17% of all posts, attribution of their authorship and organization of various fan contests suggests a thought-out communication strategy which aims to motivate fans to provide content for video game promotion and marketing.

Fans and fanworks, especially fan art and cosplay, represent technically free content which is able to generate comparable user activity to regular promotional materials. From a perspective of developers and publishers, fan creations might be used in place of more costly official content and provide advantage to those who are willing to capitalize on fan creativity. For fans this potentially means a threat to their privacy or an increased chance of obtaining gaming (or fan) capital while pursuing certain forms of fan creativity.

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Summary

Video game fans participate in the official promotion of video games, either voluntarily, or unwillingly when their fanworks are appropriated and used by video game publishers. The article provides a quantitative overview of the presence of fans in the official social media profiles of four selected mainstream games (*Dragon Age*: *Inquistion*, *Evolve*, *Mortal Kombat X* and *The Witcher 3: Wild Hunt*) during a one-year period from August 2014 to July 2015. Combining the traditional method of content analysis and Facebook data-mining, we explore the frequency with which fans appear in social media (including questions of various forms of fanworks and gender) and what user activity is generated by posts featuring fans and fan creations. Results show that fans or their fanworks are featured in 8–24% of all posts depending on a game and in the most common categories of painting and cosplay they generate a comparable level of user engagement as traditional promotional posts.

Keywords: video game fans, Facebook, official communication of video games, fan capital, free labor, fan co-creation, content analysis, fan art, cosplay, e-sports

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Avatars Going Mainstream: Typology of Tropes in Avatar-Based Storytelling Practices

Introduction

Being trapped in a computer game, fighting evil Artificial Intelligence, saving the world or at least virtual reality – those tropes are common in contemporary novels, comic books and motion pictures. The majority of popular, mainstream culture recognizes digital games, virtual reality and the Internet as part of everyday experience, therefore it often incorporates them in its narratives. The influence of games upon other media transpires in various forms: from including such themes in world-building and storytelling to creating spaces imitating game-like experiences. Avatars started to appear in various titles as main characters or projections thereof. The inclusion of avatars in such non-game narratives can recreate the common knowledge of digital game context or various misconceptions that authors of other popular media hold regarding player-avatar phenomena.

The aim of this article is to investigate popular tropes within avatar-based storytelling practices present in popular media other than digital games. Inspired by Ted Friedman's work (2005) on cybercultures and representation of computers in popular culture, this paper will focus on avatar-related tropes through an analysis of a range of texts such as: comic books, motion pictures, animations, TV series, and whole franchises. The results will be confronted with the most recent research in the matter of avatars in game studies.

This approach will enable me to create a typology of narrative tropes connected with the gaming experience throughout the avatars and to explore the avatar-

-player relationship. Confronting those tropes with the digital game research might unravel the hopes and expectations as well as doubts and fears that are connected with gaming experience within the globally understood popular culture. The main thesis of this text is that avatar-based narratives are creating an idealistic and often misleading vision of human-avatar interactions, which consists of deep immersion, identity transfer, and strong emotional connection with the game environment.

Avatar studies perspective

Avatar studies, which examine player representation in digital games, are growing more popular as part of game studies in general. The emphasis is placed on various topics: player-avatar relationship (Banks & Bowman, 2014; Taylor, 2002), player-avatar behavior (Fox et al., 2014), and psychological processes (Banks & Bowman, 2014; Yee, 2006; Yee & Bailenson, 2007) that take place within virtual environment. One of the most known pieces of research on avatars is Rune Klevjer's (2006) dissertation where he distinguishes avatar-based single-player games from other video game genres. The term "avatar" also became widely popular among gamers, who consider it as a natural part of their gaming experience (Banks & Bowman, 2014). Some scholars tend to distinguish between avatars and playable characters, based mostly on the agency provided by developers as well as possibilities of character customization (Willumsen, 2016). Digital game avatars are recognizable phenomena with which most of popular culture consumers, defining themselves as geeks or nerds, are familiar. Avatar use in games has aesthetic consequence, as well as influence on one's gaming experience (see Klevjer, 2006). Therefore, there is a growing need to define and describe digital games avatars in their diversity. The interest of researchers rarely leans toward re-interpretation of digital games within other narrative media, with the exception of analyzing the influence of video games on their aesthetics (Girina, 2015) and their narrative aspects (Katsaridou, 2014) .

Throughout this paper, the term "avatar" will refer to any visual (and sometimes audial) representation of a player within the digital game environment. The term "digital" implies all the gaming experience that is mediated with electronic devices processing digital data, such as personal computers, smartphones, or gaming consoles. "Playable character" or "game character" might be used interchangeably as it is important to broaden the definition and include more of popular culture texts. The social media context will not be analysed as it requires a broader theoretical framework.

Avatar-based storytelling practices

The transfer of human consciousness into cyberspace by means of attaching one's body to a computer or similar device was always a motif that fascinated science fiction and cyberpunk writers, with the most prominent examples of William Gibson's *Count Zero* (1983) and Neal Stephenson's *Snow Crash* (1993). The term "avatar" itself originated from the Sanskrit word for a deity embodied on Earth – avatāra (अवतार) – and it is still traditionally used as such (Ahn et al., 2012). Since the term was introduced into the game industry discourse by titles such as *Ultima IV: Quest for the Avatar* (Origin Systems, 1985) and *Habitat* (Lucasfilm Games, 1986), it gained popularity and finally settled as an official term for creating, personalizing, or inhabiting a particular character in games (Ahn et al., 2012).

Literature was not the only area that started very early to tackle the issues of in--game presence. Disney's sci-fi motion picture *Tron* (1982) might be described as one of the first, if not the first movie that presented the perspective of human players captured inside a game, interacting not only with other game characters but also computer software. A different idea of entrapment in a game was presented 17 years later in David Cronenberg's *eXistenZ* (1999), which mostly focused on the dangers of illusions created by video games and their addicted users. The year 1999 also witnessed Wachowskis' *Matrix* (1999) premiere, another significant step on the way to presenting and understanding the cinematic take on virtual reality and transfer of consciousness. Despite its incredible success as transmedial cultural phenomenon, *Matrix* focuses on the idea of virtual reality and does not include a gaming experience in its narrative. A similar perspective of dealing with digital representations is to be found in the Japanese animated series *Serial Experiments Lain* (1998), which primarily describes the problem of virtual reality and online existence but does not involve a game-related experience.

The construct of avatar might be understood as two different ideas. One that is coherent with its user's identity might be found on discussion forums or in social media. The other that encourages building the persona with creativity is more common for video games. As Sercan Sengün (2015) states: "[a]s opposed to other virtual spaces that invite their users to create avatars that could represent (thus bear a likeness of) them or in cases such as Facebook and Google Plus that encourage their users to utilize their real-world identities; video game spaces steer them to create (or take control of) fictional avatars that could orient them in fictional worlds" (p. 182). Therefore, popular narratives reflect on both of those perspectives as well as reflect them in their plots and world-building, often merging them into one.

Simultaneously, with the development of the Internet and of various narratives concerning online games became widely popular not only among gamers but also the general public. Since the launch of the first two MMORPGs (massively multiplayer online role-playing games): *Meridian 59* (Archetype Interactive, 1996) and *Ultima Online* (Origin Systems, 1997), the social dimension of playing videogames has become more global and universal as an experience of a generation. The introduction of *Second Life* (Linden Research Inc., 2003) sparked interest among mainstream media, researchers and scholars worldwide (Kolo & Baur, 2004; Boellstorff, 2012; Banks & Bowman, 2014), resulting in more in-depth studies of avatar-player interaction (Banks & Bowman, 2014) and avatar cultures (Taylor, 2002; Boellstorff, 2012). Between 1996 and 2010 there was a significant growth in the bulk of TV series, books, as well as documentaries that started to include avatar-themed narratives, which can be considered a beginning of a new subgenre in between science-fiction, fantasy and adventure stories.

One of the earliest series that portrayed the human-avatar relationship was the *Digimon* franchise and its TV series (1999), which started as a game and then was turned into an animation that explored the topic of a world mediated through virtual environment. It also featured children transferred into the digital world, where they functioned as their own avatars. This was neither the first nor the most revolutionary title; however, it became widely popular mostly because of its audience targeting. Children and pre-teens could easily relate to the experience of exploring fantastic worlds through electronic devices.

Out of various interesting titles, those aimed at children, teenagers, and young adults explore avatars and the gaming experience in the most creative way. At the same time, works addressed to adults are either nostalgic about the gaming experience or emphatic about the fear of modern technologies. However, most of these narratives are similar to each other, use similar tropes and reproduce similar misconceptions regarding player-avatar phenomena.

The notion of *trope* in popular culture narratives

As English Oxford Living Dictionaries states, a trope is "a figurative or metaphorical use of a word or expression", which is followed by supplemental definition as it is also a significant or recurrent theme; a motif" ("Trope", n. d.). While considering tropes in popular culture, a much broader perspective must be taken into consideration.

In literary theory, trope is considered "something that can be named in no literal way" (Miller, 1990, xi), which means that in various texts it adopts different form and

rhetoric. Its more modern understanding dates back to Umberto Eco's essays and it was easily adopted by fan-academics as something instantly recognisable by viewers and readers but not explicitly said or done within the textual layer (Börzsei, 2015).

The idea of following popular motifs (defined and known as "tropes") was popularized by the fan-driven Wiki page named "TV Tropes". The whole process of a trope becoming a part of cyberculture was described thoroughly by Emily Brehob (2013) and Linda Kata Börzsei (2012). Tropes are understood as "devices and conventions that a writer can reasonably rely on as being present in the audience members' minds and expectations" (see Brehob, 2013), which means that there is a similar understanding of events, aesthetics, characteristics among a wide group of viewers, listeners, and readers. Simultaneously, those are part of both digital culture and literary theory, creating bridge between new and traditional media narratives. Therefore, avatar-based narratives contain a variety of tropes which might be seen as a glimpse of globalized experience of play. Still, they also reproduce many misconceptions about playing games as well as the players' motivations. There are several important tropes that are prevalent among various works, however, some of them occur more often than others as they appear to be more familiar to the audience. Surprisingly, sometimes even opposite tropes might work within one narrative, which might deepen the misconceptions about the player-avatar relationship. Unfortunately, authors and screenwriters often do not understand the phenomena of gameplay, which results in lack of its proper representation. Avatar-based storytelling practices do not use the proper terminology, however, they tend to express the gaming experience and refer to the phenomena of digital games.

Distinguishing between a game and non-game narratives might be crucial for understanding the presence of avatars in media other than digital games. As mentioned before, there are titles that tackle the issue of virtual reality and are often inspired by digital games. They might fail in expressing the gaming context, they nevertheless convey some general knowledge on avatar-player relationship, and therefore they will be included in the analysis as avatar-based narratives. The reason for focusing on such particular thematic genre in other media is mostly the fact that there is a growing number of narratives that draw from gaming experience. The use of avatars as main characters or part of the story emphasizes the importance of digital games in modern culture and projects general predictions about the future of gaming and technology.

The term "avatar" does not have to be used in these stories in direct manner for it to be included in this analysis. Therefore, a given work has to have a recurring – not episodic – motif of in-game presence. It also has to frame human-avatar and human-

-computer interactions within the story. James Cameron's *Avatar* (2009), as well as *Avatar – The Last Airbender* (2005), cannot be considered part of the discourse, as those movies employ the term in reference to the traditional deity-on-Earth understanding of this word. Further examples of movies and novels that are excluded from this analysis are titles that are directly based on video games and are recreating the basic storyline, such as *Lara Croft: Tomb Raider* (2001) or *Mortal Kombat* (1995). These adaptations of game titles do not recognize them as avatars, but as fully independent characters with their own stories to present. Such titles do not portray the specific character of player-avatar interactions. The only exception is *Wreck-it-Ralph* (2012), being a unique reflection on the non-playable and playable characters in their relation to ever changing gaming culture.

Selection of avatar-based storytelling practices for this study

This analysis is based on a close reading of a selected body of material. The criteria for the selection of material were: presence on fan-driven websites, being recognized and recommended by the focus group, and availability in both English and Polish language. The search for the titles started with an analysis of fan-driven sites, such as MyAnimeList.net, TVTropes.org and different wikia projects through their in-site search engines using the terms "video game", "role-playing game" and "trapped in video game". At that stage, the number of texts was narrowed to 42. With the biggest representation coming from Japan and United States, it also includes titles from South Korea, Russia, and France. The research was then supplemented with fan driven folksonomy (Johnson, 2014). The list of the titles was confronted with six competent judges, who were representing gamers, game studies scholars and members of multiple fandoms, known as "multifandom" (Johnson, 2014). The final number of texts is 14. The list is not complete, yet it consists of titles available both for English and Polish speaking users, which was determined by appealing to the linguistic expertise of the researcher conducting this study.

Typology of avatar tropes

There are a variety of different tropes and motifs that recur in various novels, films, and television series. This section presents the most popular nine tropes divided into three types that focus on different aspects of avatar existence within the texts presented in Table 1.

Type of trope	Name of the trope
Avatar transparency tropes	behavioral realism
	isomorphism
Human-avatar contrasts tropes	idealisation
	escapism
Understanding avatars in games tropes	magic circle
	permadeath
	no-NPCs
	the evil AI

Table 1. Typology of Tropes in Avatar-Based Storytelling Practices

Avatar transparency tropes

The first type of trope deals with the player-avatar relationship and the transparency of the latter. The player in those stories creates a unit with a virtual representation and does not differentiate between the "self" and the in-game character.

According to personal trope analysis, one of the most conventional ones to be found in avatar-storytelling is "behavioral realism" (Ahn et al., 2012), which can be defined as a complete compatibility between the player and the avatar. A good example is Tsukasa, the protagonist in the Japanese animated series *.hack//SIGN* (2002), widely popular among global manga and anime fandom. The character declares perfect consistency between how he would behave in the real world, which means mostly shying away, and admits that the game makes him a better person. A similar relationship is observable with regard to characters from the French animation titled *Code Lyoko* (2003). Although the protagonists do not enter a digital game but rather a virtual environment, their avatars seem to be direct transfers of their consciousness. All the virtual characters behave just like their human users. In this narrative frame, the player has full control over the avatar and does not differentiate between reality and the game. Jamie Banks and Nicholas D. Bowman (2013) describe such attitude as one of four different modes of player-avatar relationship that were established within the Player-Avatar Relationship Scale. According to this research, players who "integrate play and everyday life into cohesive social reality and see avatars as themselves (rather than as a separate entity) across both spaces" (Banks & Bowman, 2013) are put into the "avatar-as-me" category. There are three more relationship descriptions provided by Banks and Bowman (2013): "avatar-as-object", "avatar-as-symbiote" and "avatar-as--other". One might think that using various behavioral and human-avatar relationship patterns would make narratives more interesting and complex. However, the screenw-

riters and creators of those stories choose less sophisticated narrative which is more understandable for the audience. Thus, they provide clear and precise storytelling which otherwise might be too difficult to comprehend.

Another intriguing trope relating to the previous two is "isomorphism" (Boellstorff, 2011), which can be characterized as creating an avatar that resembles the player visually. This might be noticeable in the mentioned above *Digimon* franchise (1999), *Code Lyoko* (2003) and *Sword Art Online* (Kawahara, 2014), as well as the American web series *The Guild* (2007), where MMO characters are played by actors and resemblance is inevitable. This is also often the case of portraying a beginner player, who explores digital games for the first time and finds it obvious that the avatar should resemble him – or herself. This attitude is noticeable in a Danish documentary *Min Avatar Og Mig* (2011) – the protagonist decides to explore *Second Life* (2003) and presents his relationship with his avatar and the game. Boellstorff (2011; 2012) implies that it is common practice among gamers to create similar and adequate avatars in *Second Life* but also proves that it can be transgressed. However, the case of isomorphism might be comparable only for minority of white players of MMORPGs, where their avatar might be compared to others and judged by its looks. Lisa Nakamura (2002; 2015) states that players and Internet users that identify themselves as people of color would rather hide their ethnic identity, and tend to disguise as white majority. Avatars in TV series and movies bear very strong resemblance to their owners and creators, as it enables the viewers to connect each character with their virtual counterpart. This seems to be the best explanation of this trope's existence.

Human-avatar contrast tropes

The second type of tropes represents a tendency to present avatars as a means to escape everyday life and create stories better and more satisfying than "real life" stories. Such representations exploit mostly two motives: the tendency to idealise in-game avatars and the "escape" from the difficulties of out-of-game life.

The first one is the *idealisation* trope (sometimes contrasted with behavioral realism), which is connected with a human tendency to create better or completely opposite versions of ourselves. This situation is ridiculed by one of the characters in the Polish feature film *Suicide Room* (2010). A group of misfits briefly portrayed in this movie finds their peace in a *Second Life*-resembling game. It lasts until one of them discovers their "real-life" identities and decides to reveal their imperfections to the others. A similar mechanism is visible in *Sword Art Online* – a series of Japanese novels by Reki Kawahara (2014) – where players trapped in virtual reality MMORPG are

forced to adapt their avatars' looks to the way they look in real life, which proves that almost all players tend to create more satisfying versions of themselves. Nick Yee and Jeremy Bailenson (2007) claim that "idealisation" in digital game environment might influence the outside-of-the-game, actual behavior. These researchers propose the existence of the "Proteus Effect", which suggests that people who were rendered taller or more attractive than in reality behaved differently both in the game context as well as in actual interactions with others (Yee & Bailenson, 2007).

Various protagonists from avatar-based narratives tend to explain their motivation of playing (or being captured inside the game) with the *escapism* trope. Kirito from *Sword Art Online* (Kawahara, 2014), Tsukasa from *.hack//SIGN* , as well as Dominik and Sylwia from *Suicide Room* (2011) find the ability to escape into the virtual world more attractive and interesting than real life. The message hidden within this trope presents an unfavorable and negative approach towards this "escapist" behaviour. It is also one of the most common stereotypes about players – due to their inability to function properly, they tend to find refuge in digital games (Calleja, 2010). Gordon Calleja (2010), however, demonstrates that the notion of escapism should be reevaluated and considered a useful device in terms of shaping behavior in actual life.

Understanding avatars in games tropes

The third trope group corresponds with in-game mechanics that are more or less a realistic representation of gameplay and human-avatar relationships (and understanding thereof). They are less common, more varied, and usually are not shared between all works with the exception of the magic circle trope.

As the (quite controversial) division between the "virtual" and the "actual" (Boellstorff, 2011, p. 505) goes,[1] there is another stereotype that conveys the narrative of an opposite, separate world, connected only by a virtual platform. The *magic circle* trope is quite prevalent and vivid, especially in more epic, role-playing game inspired narratives. The idea itself was introduced by Johan Huizinga in *Homo ludens* (1949), where it is compared to: "the arena, the card table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc." (p. 10). Consalvo refers to it as that place, where "different rules apply, and it is a space where we can experience things not normally sanctioned or allowed in regular space or life" (2009, p. 409), and then criticizes it strongly. Consalvo states that the belief in the existence of a "magic circle" while playing digi-

1 The decision to divide the gaming experience and out-of-game reality to "virtual" and "actual" (Boellstorff, 2011) is motivated by the iniquitousness of gaming experience as well as the fact that it resonates with Consalvo's criticism of the notion of magic circle.

tal games is false, mostly because the effects of in-game interactions and in-game choices might resonate not only with friends but also the whole gaming community (2009). However, many scholars, Jaakko Stenros among them, defended its existence by identifying borders of play (2014), which are consistent with the described trope. He states that the act of play is impossible without establishing borders between the game and the outside world (Stenros, 2014). The magic circle trope illustrates the creators' need to emphasize that both in-game behavior and in-game events remain within the game context. It may be treated as contradictory to behavioral realism; however, in most narratives these tropes exist simultaneously. This can be illustrated briefly by the *.hack//SIGN* series, where the viewer doesn't know what the characters look like or how they behave outside the game, yet one is informed that characters have similar character traits and behavioral patterns as in the real life. Using the notion of the "magic circle" creates the atmosphere of uniqueness of gaming experience and separates it from everyday life. Some of the titles intentionally play with this trope, while proving that what happens in "virtual" or in "actual" life (Boellstorff, 2011, p. 505) is deeply intertwined and inseparable from each other. The Japanese animated feature film *Summer Wars* (Hosoda, 2009) portrays a near-future society that uses an integrated gaming and social media platform to integrate a variety of services provided in actual life, such as healthcare or crisis management. Some of the users distinguish strongly between their avatars and their actual selves, however, the whole society suffers when the system is struck down, destroying the illusion of the magic circle. In Japanese light novels, such as *Sword Art Online* (Kawahara, 2014), *OverLord* (Maruyama, 2010) or *Log Horizon* (Touno, Hara, 2015), the magic circle is forced upon players that are somehow trapped by a malevolent Artificial Intelligence or by other, more vicious, players (TV Tropes).

Numerous texts explore a trope inextricably entwined with magic circle issues – the problem of "permadeath" (Rousse, 2011). Protagonists trapped in a digital game or environment suffer dire consequences of their transgressions – they might die in their actual life, mostly due to brain damage caused by VR headsets. While permadeath is uncommon in game design and considered a very controversial facet of game mechanics (Rousse, 2011), the popularity of this trope within avatar-based narratives is significantly higher. The risk of death of a favorite character might be used as a plot device and create proper dynamics within the narrative.

Digital games represented in books, movies, and TV series are very often filled with avatars and very rarely with non-playable characters (NPC), therefore the *no-NPC's* trope is another interesting feature of avatar-based narratives. Leaving aside *Wreck-it-Ralph* (2012), where all the characters are either sentient, independent avatars or non-

-playable characters, the vast majority of those narratives do not include non-playable .characters, finding them unnecessary. A significant exception to this rule is to be found in *Code Lyoko*, where one of the heroines – Aelita – is in fact an NPC who became sentient and escaped the virtual world. This trope actually reflects game studies research that proved a significant difference between human behavior towards an avatar (which represents a human being on the other side) and towards an agent (artificial intelligence programmed to behave in a particular way). Jamie Fox et al. (2014) draw our attention to various attitudes towards agents – other players are often dismissive of them or ignore them and they are less likely to interact with agents (or NPCs) if they are aware of those characters being controlled by a computer program (Fox, et al., 2014).

Sometimes the presence of a non-playable character within the narrative transforms into *the evil AI* trope. Somehow the malevolent artificial intelligence tries either to rule the virtual world it inhabits or to inhabit and colonize the actual world. Most of those AIs are presented as clichéd main antagonists throughout the series. This is not exclusive to avatar-based narratives, as it is more common in most science fiction narratives ("TV Tropes"). This can be illustrated by the character of Agent Smith from the *Matrix* franchise (1999) as well as the evil A.I. X.A.N.A. from *Code Lyoko* series (2003). It seems that using an artificial enemy makes it possible to show fights and violence without shocking the underage fans of the series. NPCs and AIs tend to be very often dehumanized, and when they are destroyed by protagonists it is not counted as "kill" or "death". According to some pieces of research, A.I. can be also perceived as an agent without human features or skills, therefore, it is not treated with sympathy by gamers or software users (Fox et al. 2014).

Finally, there is also a group of non-typical tropes that occur within avatar non-game narratives such as: transferring consciousness, saving the world through video games, time-travel and entrapment. All of those are equally interesting; however, they do not refer closely to the actual gaming experience as well as to the current state of technical advancement. Those motifs are embedded in the game-related narratives, yet do not depend on them exclusively and are mostly used as plot devices or mere episodes. The more in-depth analysis of those might be useful and relevant for further studies of computer technology and the Internet as a part of popular culture (Friedman, 2005; Schulte, 2013).

Conclusion

The research has uncovered a variety of tropes that are included in avatar-based storytelling practices, franchises, and media projects, which prove that not all gaming experience is presented accordingly, some of the avatar-based narratives include

stereotypes and misconceptions that are undergoing reevaluation within games studies.

The tropes were divided into three types with regard to different aspects of gaming experience: (1) player-avatar relationship (*avatar transparency*), (2) game as a means of retreat (*human-avatar contrasts*), and (3) the uniqueness of gaming experience issues (*understanding avatars in games*). In the first type we can distinguish: *behavioral realism* and *isomorphism*. The second type is also represented by two popular tropes: *idealisation* and *escapism*. Finally, the third type puts emphasis on the specific character of gaming as an experience. The tropes described in this part are: *magic circle*, *permadeath*, *no-NPCs*, *the evil AI* (see also Table 1).

The proposed typology of tropes enables understanding of how popular culture perceives gaming experience and the player's identity. Those tropes evoke a vision of immersive and ubiquitous future of gaming, where the player and avatar are most likely the same being. This might be considered to show both the expectations and concerns regarding the human-avatar relationship.

Still, while this article hints at some of the possible applications of avatar-related tropes in non-game narratives, further research seems to be necessary in order to provide a comprehensive review thereof. Firstly, some valuable information might be revealed through cross-cultural, qualitative and quantitative research on various tropes present in narratives with different gaming cultures. Secondly, information might be gained through exploring more tropes in relation to not only critical framework but also design studies; and thirdly, through creating a database of avatar related tropes not only in avatar-based narratives but also as separate incidents in more mainstream cultural texts, and finally including game-based adaptations.

Definitely there will be more and more non-game narratives tackling the issue of in-game presence and gaming experience as well as exploring human-avatar relationship. This seems to be the case because contemporary culture is undergoing a "geek revolution" (Dennis, 2015), which may result in the appearance of different, more transmedia narratives.

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Summary

Due to the growing popularity of video games, gaming itself has become a shared experience among media audiences worldwide. The phenomenon of avatar-based games has led to the emergence of new storytelling practices. The paper proposes a typology of tropes in these avatar-based narratives focusing on non-game case studies. Suggested tropes are also confronted with the latest research on avatars in the area of game studies and current knowledge of the issues concerning the player-avatar relationship. Some of the most popular misconceptions regarding the gameplay experience and its representation in non-game media are exposed as a result of this analysis. The research confirms that popular culture perceives gaming experience as closely related to the player identity, as the latter inspires new genres of non-game narratives.

Keywords: avatars, narrative, storytelling, movies, tv series, light novels

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Gamedec. UKW in IGDA Curriculum Framework

1. History, Background and Vision

The founder of Humanities 2.0, Prof. Mariusz Zawodniak, aimed to create an innovative BA programme that would combine the traditional liberal arts background (such as literature, philosophy, history and language studies) with new technologies, digital culture and practical ICT skills. Unlike other humanities-based degrees in Poland, this one was officially labelled as 'practical' instead of 'general-academic' (Polish degrees must choose one of the two). It was employability-oriented, dedicated to hands-on project work and collaboration with stakeholders outside of university. Prof. Zawodniak had initially planned three specialisations: E-Writing & Computer Editing (for e-writers/editors), Online Journalism & Social Media (for e-journalists and marketers), and Information & Digitisation Society (for e-librarians). Responding to his call for curriculum contributions, I offered to create a fourth specialisation track: for game designers.

I had the necessary experience in higher-ed curriculum design, having been the head of the programme committee at the Institute of Modern Languages and Applied Linguistics for two years then, responsible for the redesign of BA and MA programmes in accordance with the National Qualification Framework. As highlighted by *Extra Credits* in their episode "On Game Schools" (2012, 5:51), it is also essential that at least some of the academics who run game degrees have real game industry experience. In the Humanities 2.0, the game staff comprised four teachers/researchers employed at the English Studies department. Dr. Paweł Schreiber had long been a video game critic, journalist and blogger, expert in interactive fiction, speaker at industry

conferences and juror in game dev competitions (e.g. Indie Basement). Dr. Aleksandra Mochocka: a tabletop RPG writer and translator, also speaker and juror at game conventions. Mgr Mikołaj Sobociński: a practitioner and proponent of game-based learning. Dr. Michał Mochocki: a tabletop RPG designer, editor, writer and translator, larp designer, juror and speaker at game events, and game-based learning consultant with Nowa Era edu-publisher. Except for Schreiber, we had all experimented with edu-gamification. Except for Sobociński, we had also been members of Games Research Association of Poland, involved in academic game studies.

Summing up the legal, institutional, and organisational aspects:

2nd Gen Humanities was a 3-year (6-semester) full-time undergraduate (B.A.) programme, the total of 1800 contact hours, each semester comprising 15 teaching weeks.

It was offered to high-school graduates free-of-charge and without entrance exams, the selection process based on scores in high-school exit exam (matura).

Specialisation tracks would start already in Semester 2 and continue to 6, the total of exactly 720 contact hours in 12 modules.

In addition to the 720 h, each specialisation had a 30-h introductory lecture in Semester 1, two special modules (Project + Collaboration with Stakeholders) in Semesters 2–4, and BA Seminar in 5–6.

The 'practical profile' of education focused on employability and skills, with the prospect of early start on the job market.

In line with the above, the game studies & Design curriculum prioritised hands--on design labs run by instructors with relevant professional experience. Given the humanities-based nature of the degree and the specific expertise of the involved UKW staff, a substantial part of the curriculum focused on non-digital games: board & card games, tabletop and live action role-playing, and urban location-based games. The digital section included interactive fiction and several (initially: 4) semesters of video games design labs with middleware tools (UDK, Unreal, Unity), which would be taught not by academics but by industry practitioners. There were also modules in educational games and gamification, their aim being to extend employability from commercial game development to serious games and also to non-game industries. Finally, there were game studies seminars to supplement the theoretical background provided by humanities and social studies modules in the general (i.e. non-specialisation) section of Humanities 2.0.

The semi-official name "Gamedec" was borrowed from a sci-fi novel series by Marcin Przybyłek, in which gamedecs are licensed investigators, experts and pro-

blem-solvers in virtual MMO worlds. They combine technical skills with extensive knowledge of gameplay, game design, world-building, human (player) psychology and social behaviour.

2. Literature Review: Academia and Industry

Back in 2008, IGDA Framework said: "Over the last ten years, there has been a dramatic increase in the number and type of programs related to games" (p. 2). Seven years later, Frans Mäyrä (2015) in his keynote speech at CEEGS conference talks about the game academia as well-established, well-funded and thriving. Curricula and syllabi can be accessed online, and personal insights from both game students and teachers are proliferating on blogs and social media. Nevertheless, academic publications on game curriculum design are scarce, especially those relevant for Gamedec.UKW: rooted in the humanities and focused on employability-oriented skills across digital and non-digital platforms. Beside the IGDA Framework and the study of industry expectations vs game curricula by McGill (2009), primary sources consulted in the Gamedec curriculum design process (in 2012 and early 2013) were books intended to be used in college-level game education.

The classic *Rules of Play* by Salen & Zimmerman (2003) helped define the scope and structure of the whole curriculum, its different chapters entering the reading lists of many modules across all three years. *An Introduction to Games Studies* by Mäyrä (2008) helped define the scope of digital game studies. *The Art of Game Design: A Book of Lenses* by Schell (2008) provided general guidance to practical game design and design thinking, applicable across all design labs. Also, together with *Game Design Workshop* by Fullerton (2008), it inspired the organisation of team-based game design projects and collaboration with industry partners. *Challenges for Game Designers* by Brathwaite & Schreiber (2009) helped conceptualise the integration of non-digital and digital modules, and provided excellent exercises for students. *A Theory of Fun for Game Design* by Koster (2005) and *The Gamification of Learning and Instruction* by Kapp (2012) resonated well with our view of games as learning environments and of game design as parallel to instructional design, and reinforced our will to include edu-gamification and edu-games among Gamedec design labs. Together with Kapp (2012), *The Multiplayer Classroom* by Sheldon (2012) guided our efforts to gamify the learning process (see Mochocki, 2015). We also received personal advice from people involved in game degrees at Brunel University (UK): teacher Justin Parsler and graduate student Tomasz Kaczmarek.

Equally important as the academic sources was the voice of game industry professionals. The prior involvement of the English Studies / Gamedec.UKW staff with game

design, gaming media and communities translated to a large network of connections to people employed in digital and non-digital game companies. This proved useful in obtaining direct feedback on the curriculum and general advice on what skills and qualifications are valued by the industry, and in discussing options for partnership and collaboration. At the preparation stage, this took the form of:

- Questionnaire about possible collaboration, internships and employment, taken by 13 game companies in May 2013 (results published on personal blog, Mochocki 2013),
- Attendance at game industry events (e.g. Poznan Game Arena, Game Developers Convention, Game Industry Trends, Pyrkon Festival, Game-based Learning conference) in order to: a) present Gamedec.UKW to the audience, b) listen to presentations on starting a career in game dev,
- Early arrangements with Vivid Games and CI Games about hiring their staff to teach Video Game Design at Gamedec.UKW,
- Informal personal communication with game dev professionals.

Given the number of conference talks and panels, invited guest lectures, and personal meetings, representing both digital and non-digital sectors in Poland (special thanks to Krzysztof Maliński, Maciej Miąsik, Rafał Bełka, Tomasz Kaczmarek, Ignacy Trzewiczek, Krzysztof Szafrański, Michał Stachyra) and abroad (special thanks: Justin Parsler, Sandy Petersen, Claus Raasted, Povl Heiberg Gad, Derrick Ferry, Yaraslau Kot, Gameforge team), it is not possible to recall precisely who-said-what. Other useful sources of industry opinion were *Extra Credits* episodes on game education (2012a, 2012b). Suffice it to say that all were strikingly similar, with many points overlapping, others complementary, never contradictory. They may be collectively summarised as follows:

Activities (what game students should do):

- Make games: the most important thing is actual practice of creating games
- Start small and finish early: it is better to have a portfolio of small completed projects than grand visions which are never finished
- Learn the tools: work hard on mastering the technical skills and tools
- Play games: have an extensive player's knowledge of games and game genres
- Get inspired: look for inspiration beyond games, to other media, science, life experience
- Network: connect with people who are already working in the industry
- Be visible: attend industry events, have an online portfolio, participate in the community

Skills, personality, behaviour (what game students should be like):

- Be ready for criticism: do not get discouraged by online hate
- Kill your darlings: accept that a large part of your creative work will be abandoned
- Endure crunchtime: be able to stay productive and creative when working long hours
- Attention to details: pay it
- Teamwork: timeliness, team spirit, shared responsibility
- Respect partners: stay on good terms with co-workers and ex-partners
- Communicate: "single most core skill" (Extra Credits, 2012b, 0:48)

Based on both the industry and academic advice, it was obvious that design labs with team project work would constitute a significant, if not central, part of the curriculum. Such skills are valued even in programming-focused degrees in Computer Science departments (e.g. Bourdreaux, Etheridge & Kumar, 2011, p. 26; Brown, Lee & Alejandre, 2009, p. 240). Secondly, these skills should be integrated with game studies with a strong liberal arts background, as recommended e.g. by *Extra Credits* (2012a, 5:34), Elling (2013, p. 36), recently again by *Extra Credits* (2016, 4:27), and three fourths of respondents representing 73 higher-ed institutions granting video game degrees (HEVGA, 2015a, p. 4).

3. Gamedec. UKW in IGDA Curriculum Framework

As said above, in the first two iterations of the programme, the Gamedec specialisation block comprised 720 contact hours in 12 modules, plus three special modules conducted mainly in non-contact form: Project, Collaboration, and BA Seminar. Internal university regulations insisted that at least 50% of all contact hours be lectures. As much as possible, the lecture hours were concentrated in the general Humanities 2.0 modules so that labs and seminars could dominate in the specialisation blocks. The 50% requirement was later lifted for practical programmes, leading to a significantly higher number of practical classes in iterations 2015/16+. Table 1 (below) shows these changes for all versions of the programme.

3.1 Gamedec. UKW Modules in Semesters

Table 1 lists all modules in the Gamedec block, their assigned number of hours and class format (lecture, seminar, lab), as well as placement in semesters.

Semesters (Levels)	GAMEDEC: game studies & Design Modules	
	2013/14 and 2014/15	2015/16 and 2016/17
Level 1	Intro to game studies & Design: 30 h lecture	Intro to game studies & Design: 15 h lecture [2015] / **30 h [2016]** Interactive Fiction: 30 h lec*** Logic with Elements of Application Logic: 15 h lec****
Level 2	Board Games Design: 30 h lec + 30 h lab Role-playing Games Design: 30 h lec + 30 h lab [2013] / **60 h lab [2014]**** Video Games Design (Scratch): 30 h lab [2013] / **none in [2014]**** PROJECT 15 h* COLLABORATION w/Stakeholders 15 h* [2013] / **none in [2014]****	Board Games Design: 30 h lec + 45 h lab Role-playing Games Design: 30 h lec + 30 h RPG-Lab + 45 h Larp-Lab Law & Economy of Game Industry: 15 h seminar PROJECT 15 h*
Level 3	Video Games Design: 30 h lab Gamification of Education & Management: 45 h lec + 30 h lab PROJECT 15 h* COLLABORATION w/Stakeholders 15 h*	Video Games Design: 30 h lab Gamification of Education & Management: 30 h lec + 45 h lab Game Theory for Designers: 30 h seminar Grant Writing: 30 h seminar PROJECT 15 h* COLLABORATION w/Stakeholders 15 h*
Level 4	Video Games Design: 30 h lab game studies: Ludology: 30 h lec + 30 h seminar game studies: Narratology: 30 h lec + 30 h seminar PROJECT 15h* COLLABORATION w/Stakeholders 15 h*	Video Games Design: 30 h lab ARG & Urban Games: 30 h lec + 45 h lab game studies: 60 h seminar (with submodules) PROJECT 15h* COLLABORATION w/Stakeholders 15 h*

Level 5	Video Games Design: 30 h lab Interactive Fiction: 30 h lec + 30 h lab ARG & Urban Games: 30 h lec + 30 h lab BA SEMINAR: 30 h*	Educational Games Design: 30 h lec + 45 h lab Games in Adaptations & Transmedia: 30 h seminar game studies: 60 h seminar (with submodules) History of Digital Games: 30 h lec BA SEMINAR: 30 h*
Level 6	Educational Games Design: 45 h lec + 30 h lab History of Digital Games: 30 h lec Gamer Communities in VR and RL: 30 h lec Games in Cultural Context: 30 h lec BA SEMINAR: 30 h*	BA SEMINAR: 30 h* Industrial Placement: 3 months **(no contact hours at university)**

Table 1. Gamedec.UKW Modules in Semesters

* Project, Collaboration with Stakeholders, and BA Seminar are not regular contact classes. The hour count is there only for the purpose of calculating salaries.

** The only modification in the second iteration of Gamedec curriculum was the deletion of Video Games Design on Level 2 in order to add the saved 30 h to Role-playing Games Design lab. The deletion of Collaboration with Stakeholders on Level 2 was a general decision for the whole Humanities 2.0.

*** In 2015, Interactive Fiction was moved to the general Humanities 2.0 block on Level 1. Technically, it was removed from the Gamedec block, leaving spare hours to be added to other Gamedec courses. In fact, gamedecs take this class anyway, together with all Level 1 students before they choose specialisations.

**** In 2015, Logic with Elements of Application Logic replaced Elements of Philosophy on Level 1. It does not belong to the Gamedec module block, but was added at the request of Gamedec staff as a welcome introduction to mathematical / algorithmic thinking (compare: Extra Credits, 2016, 5:15).

3.2 IGDA Core Topics and Gamedec.UKW Modules

The IGDA Framework outlines ten Core Topics relevant for game education. In Table 2, the topics are paired with the respective Gamedec.UKW and general Humanities 2.0 modules. Table 2 is based on the third (2015/16) iteration of the curriculum (almost identical with the 2016/2017).

IGDA Core Topic	Covered in Modules (2015/16):
3.1.1 Game Criticism	
Game studies	Lvl 1: Intro to game studies & Design Lvls 4–5: game studies Lvl 5: History of Digital Games Lvl 5: Games in Adaptations & Transmedia Lvls 2–5: lectures + labs for specific platforms (board, larp, etc.)
Experience-centered criticism	Lvl 1: Intro to game studies & Design Lvls 4–5: game studies Lvl 3: Gamification of Education & Management **General H2.0 Block** Lvl 3: Sociology of the Internet Lvl 4: Methodology of Social Research (in Cyberspace)
Consumer-oriented criticism	Lvl 2: Law & Economy of Game Industry Lvl 5: Games in Adaptations & Transmedia **General H2.0 Block** Lvls 1–2: Language of Social Communication
Genre analysis	Lvl 1: Intro to game studies & Design Lvl 2: Board Games Design Lvl 2: Role-playing Games Design Lvl 4: ARG & Urban Games Lvls 4–5: game studies Lvl 5: History of Digital Games
Auteur studies	Lvl 2: Law & Economy of Game Industry Lvl 5: Games in Adaptations & Transmedia
Analysis of Game Design	Lvl 1: Interactive Fiction Lvls 4–5: game studies Lvl 5: History of Digital Games Lvl 5: Games in Adaptations & Transmedia Lvls 2–5: lectures + labs for specific platforms (board, larp, etc.)
3.1.2 Non-Game Media Studies	
Media Research Methods	Lvls 4–5: game studies **General H2.0 Block** Lvl 1: Popular Culture and the Internet Lvl 1: 2nd Gen Humanities: Fields & Disciplines Lvls 2–5: Correspondence of Sciences and Arts Lvl 4: Methodology of Social Research (in Cyberspace)

Core Experiences	Lvls 4–5: game studies Lvls 2–5: lectures + labs for specific platforms (board, larp, etc.) **General H2.0 Block** Lvl 1: Popular Culture and the Internet
3.2 Games and Society	
Gaming Demographics	Lvls 4–5: game studies **General H2.0 Block** Lvl 2: Society of Knowledge, Information and Digitisation Lvl 3: Sociology of the Internet
The "Cultures" of Gaming	Lvls 4–5: game studies Lvl 5: Games in Adaptations & Transmedia **General H2.0 Block** Lvl 1: Popular Culture and the Internet Lvl 3: Sociology of the Internet Lvls 2–5: Correspondence of Sciences and Arts
History	Lvl 5: History of Digital Games Lvls 2–5: lectures + labs for specific platforms (board, larp, etc.)
Experience of Play/ Historical aspects	Lvl 1: Intro to game studies & Design Lvls 4–5: game studies
Experience of Play/ Social aspects	Lvl 1: Intro to game studies & Design Lvl 2: Role-playing Games Design Lvls 4–5: game studies Lvl 5: Educational Games Design
Experience of Play/ Psychological aspects	Lvl 1: Intro to game studies & Design Lvl 2: Role-playing Games Design Lvl 3: Gamification of Education & Management Lvls 4–5: game studies Lvl 5: Educational Games Design
Experience of Play/ Economic aspects	Lvl 2: Law & Economy of Game Industry Lvl 3: Gamification of Education & Management Lvls 4–5: game studies Lvl 5: Educational Games Design Lvl 5: Games in Adaptations & Transmedia
Experience of Play/ Human-machine interaction	Lvl 3: Gamification of Education & Management Lvls 3–4: Video Games Design
The Construction of Games / Historical aspects	Lvl 5: History of Digital Games
Anthropology of the Game Industry	Lvls 4–5: game studies Lvl 5: Games in Adaptations & Transmedia

3.3 Game Design	
Atomic parts of games	Lvl 2: Board Games Design Lvl 3: Gamification of Education & Management
Play Mechanics	Lvl 2: Board Games Design Lvl 3: Gamification of Education & Management Lvls 4–5: game studies
Approaches to Game Design	Lvl 3: Game Theory for Designers Lvls 4–5: game studies Guest speakers
Boardgame and Roleplaying Design	Lvl 2: Board Games Design Lvl 2: Role-playing Games Design Lvls 4–5: game studies Lvl 5: Educational Games Design
Ideas	Lvl 2: Board Games Design Lvls 2–4: Project Lvl 5: Educational Games Design Lvls 5–6: BA Seminar (diploma project)
Fun	Lvl 1: Intro to game studies & Design Lvl 3: Gamification of Education & Management
Abstract Design Elements	Lvl 3: Gamification of Education & Management Lvl 5: Educational Games Design
Psychological Design Considerations	Lvl 3: Gamification of Education & Management Lvls 4–5: game studies
Interface Design	Lvls 3–4: Video Games Design
Iterative Nature	Lvls 2–4: Project Lvls 5–6: BA Seminar (diploma project)
Serious Game Design	Lvl 1: Intro to game studies & Design Lvl 3: Gamification of Education & Management Lvl 5: Educational Games Design
Practical Game Design	Lvls 2–5: all design labs + lectures Lvls 2–4: Project Lvls 3–4: Collaboration with Stakeholders Lvls 5–6: BA Seminar (diploma project) Guest speakers
3.4 Game Programming	
Game Engine Design	Lvls 3–4: Video Games Design
Design/Technology Synthesis	Lvls 3–4: Video Games Design
Graphics Programming	Lvls 3–4: Video Games Design

3.5 Visual Design	
Basic Visual Design	**General H2.0 Block** Lvl 1: Basics of Computer Editing & Design Lvls 2–3: Visualisation of Knowledge & Information
Visual narratives: painting, comics, photography, film	**General H2.0 Block** Lvl 1: Basics of Computer Editing & Design Lvls 2–5: Correspondence of Sciences and Arts
Motion Graphics	Lvls 3–4: Video Games Design
Visual Asset Generation	Lvls 3–4: Video Games Design
Architecture	Lvls 3–4: Video Games Design
Working with 3D Hardware	Lvls 3–4: Video Games Design
Information Visualisation	**General H2.0 Block** Lvls 2–3: Visualisation of Knowledge & Information
3.6 Audio Design	**None**
3.7 Interactive Storytelling	
Story in Non-Interactive Media	Lvl 2: Role-playing Games Design Lvls 4–5: game studies Lvl 5: Games in Adaptations & Transmedia
Narrative in Interactive Media	Lvl 1: Interactive Fiction Lvl 2: Role-playing Games Design Lvl 4: ARG & Urban Games Lvls 4–5: game studies Lvl 5: Games in Adaptations & Transmedia
Writing for Other Media	**General H2.0 Block** Lvl 1: Popular Culture and the Internet
3.8 Game Production	Lvls 2–4: Project Lvls 3–4: Collaboration with Stakeholders Lvls 5–6: BA Seminar (diploma projects) Guest speakers
3.9 Business of Gaming	Lvl 2: Law & Economy of Game Industry Lvls 3–4: Collaboration with Stakeholders Lvl 5: History of Digital Games Lvl 5: Games in Adaptations & Transmedia Guest speakers **General H2.0 Block** Lvl 1; 5: Internet Law

Table 2. IGDA Core Topics and Gamedec.UKW Modules

3.3 IGDA Institutional Considerations

IGDA 2008 Framework lists the following nine qualities as "some of the components of a strong program" (p. 33). Gamedec.UKW meets 7,5 of these, the missing one being (4.) local IGDA chapter, and the missing half being (6.) labs and libraries.

IGDA Institutional Considerations (p. 33)	How they apply to Gamedec.UKW
1. Advisory Board (local professionals if available)	An informal network of consultants and sponsors in local and national digital and non-digital game companies: Huuuge Games, Remivision, Insane Code, Rebel.pl, Fabryka Kart Trefl. Never officially formalised as Advisory Board, but a good functional equivalent.
2. Focus on portfolio development (graduation requirement, professional/ academic judges)	Mandatory game projects created in all design labs, in all Project modules. Evaluation by industry professionals highly recommended in all projects, and mandatory in BA diploma projects.
3. Internship network with studios, companies and community organizations including non-profits.	Established with local video game companies: Huuuge Games, Vivid Games, Remivision (all of which have already employed gamedecs full-time), with local board game store Centrum Gier Pegaz and board game blog Przystanek Planszówka.
4. Relationship with local IGDA chapter (student memberships)	No IGDA chapter exists in Poland.
5. Faculty with industry experience (especially for development-focused programs)	Beside the initial four UKW staff (see above: History, Background and Vision), Gamedec was joined by: Krzysztof Chmielewski, larp designer and educator Piotr Milewski, larp designer, board & card game designer, game-based learning expert Piotr Pieńkowski, long-time editor-in-chief of video game magazines, video and board game designer Łukasz Juszczak, editor at board game blog "Przystanek Planszówka" Vivid Games professionals teaching Video Games Design (W. Dziuk, G. Brol, M. Dzikowski, F. Kucharski)

6. Labs and libraries (access to hardware/software/games students don't have)	Available but underequipped, especially in high-quality computer hardware.
7. Speaker program (bring current professionals on campus)	Guest speakers from local and national digital and non-digital game industries on campus: video game publishers, game/level/sound designers, media workers, marketers, community managers, translators; board/card game designers, publishers and retailers; larp designers and event organisers; tabletop RPG designers and editors. Additionally, foreign guest lectures via Skype: Sandy Petersen (USA), Claus Raasted (Denmark), GameForge team (Germany), Mads Haahr (Ireland).
8. Mixed classes (courses involving programmers and artists on same project, team-based)	Project module on semesters 2–4, with three mixed team projects per semester. Also, platform-specific design lab.
9. Extracurricular projects (student-led mods, projects outside the classroom)	Project module is based entirely on student-led projects developed beyond the classroom. Collaboration with Stakeholders is carried out with partners outside of university.

3.4 Special Modules, Employment Rate & Retention Rate

In the Project module (Levels 2–4), teams of gamedecs are required to create three small game projects per semester, using some professional project management tools (e.g. Gantt chart). In the Collaboration module (Levels 3–4), they collect experience in collaboration with stakeholders outside university; preferably, as long-term internships in game dev companies. In the BA Seminar, each gamedec develops their own game project supervised both by an academic supervisor and an informal 'supervisor' (consultant) from a relevant industry.

Emphasis on constant project work in contact with industry professionals contributes to a high employment rate: as of July 2016, as many as 39% of seniors and sophomores found full-time employment in video game dev **before** graduation (Gamedec. UKW 2016), with the number rising to 47% in January 2017 (Gamedec.UKW 2017) – to be compared with 55,8% within a **year post** graduation among graduates of Western (mostly US-based) degrees focused specifically on video games (HEVGA, 2015b, p. 3). On the other hand, the amount of hard work required systematically across semesters contributes to a high drop-out rate. The freshman-to-sophomore retention

was only 55,5% in the first two cohorts, compared to 88% in video game degrees in the USA and 64,2% on average in US-based academic degrees (HEVGA, 2015a, p. 4).

This paper focuses on the composition of the curriculum in the view of the IGDA framework, thus the section on special modules, employability and retention is only briefly sketched. For a more detailed analysis of these aspects, see Mochocki 2016.

Summary

The curriculum of Gamedec.UKW specialisation within the Humanities 2.0 BA degree has a very strong coverage of the following IGDA core topics: 3.1.1 Game Criticism, 3.1.2 Non-Game Media Studies, 3.2. Games and Society, 3.3. Game Design, and a strong coverage of 3.7 Interactive Storytelling. It has a relatively weak coverage of 3.8 Game Production and 3.9 Business of Gaming, very weak for 3.4 Game Programming and 3.5 Visual Design, and zero for 3.6 Audio Design. Also, it meets 7.5 out of 9 Institutional Considerations which refer mainly to collaboration with the industry environment and the organisation of after-class student assignments. The two leading sections of the curriculum are: practical game design team projects and rich liberal arts background, in line with recommendations from both academia and game industry.

The curriculum has undergone a significant modification in its third year (2015/2016+), including the removal of regular classes from Semester 6, leaving only the BA Seminar and 3-month industrial placement. This provides students with a greater mobility: they do not need to be present at university, contacting their BA supervisor online. Also, they can merge the industrial traineeship with the seminar, building their BA project upon the design work they do for the company in the traineeship.

In my opinion, the 2015/16 version of the programme is the best that we could achieve given the 'glass ceiling' of institutional, financial and organisational constraints as a specialisation of Humanities 2.0. Hence, no significant changes were introduced in the newest (fourth) iteration for 2016/2017. Further improvement of the curriculum would require the 'emancipation' of game studies & Design as an independent degree with its own specialisations.

APPENDIX

Table 3 lists all modules taken by gamedecs in the 3-year programme, including those in the general Humanities 2.0 section.

Level 1
Interactive Fiction 2nd Gen Humanities: Fields & Disciplines (includes: **Intro to game studies & Design 15 h**) Human Capital: Soft Skills Philosophy & New Technologies Logic with Elements of Application Logic Language of Social Communication Popular Culture and the Internet Introduction to IT Introduction to Applications Basics of Computer Editing & Design Internet Law Foreign Language
Level 2
Human Capital: Soft Skills (II) Society of Knowledge, Information and Digitisation Language of Social Communication (II) Visualisation of Knowledge and Information Correspondence of Sciences and Arts Foreign Language (II) Tech Incubator **Gamedec Spec-Track:** Board Games Design Role-playing Games Design Law and Economy of the Game Industry PROJECT
Level 3
Human Capital: Soft Skills (III) Visualisation of Knowledge and Information (II) Sociology of the Internet Correspondence of Sciences and Arts (II) Foreign Language (III) Physical Education Tech Incubator (II) **Gamedec Spec-Track:** Video Games Design (I) Gamification of Education and Management Game Theory for Designers Grant Writing PROJECT COLLABORATION with STAKEHOLDERS

Level 4
Ideas of Contemporary Humanities Human Capital: Soft Skills (IV) Methodology of Social Research (in Cyberspace) Correspondence of Sciences and Arts (III) Foreign Language (IV) **Gamedec Spec-Track:** ARG and Urban Games Video Games Design (II) game studies (I) PROJECT COLLABORATION with STAKEHOLDERS
Level 5
Human Capital: Soft Skills (V) Correspondence of Sciences and Arts (IV) Internet Law (II) free elective (lecture) **Gamedec Spec-Track:** Educational Games Design Games in Adaptations and Transmedia History of Digital Games game studies (II) B.A. SEMINAR
Level 6 (no contact hours at university)
Gamedec Spec-Track: B.A. SEMINAR (II) INDUSTRIAL PLACEMENT (3 months)

Table 3. Complete Gamedec.UKW 2015/16 Curriculum

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Summary

Launched in October 2013, GAMEDEC: game studies & Design is a specialisation track within the 2nd Gen Humanities (aka Humanities 2.0) 3-year BA programme at Kazimierz Wielki University (UKW) in Bydgoszcz, Poland. The curriculum was

created by UKW academic staff with game design experience, guided by the IGDA 2008 Framework and consulted with game dev professionals. It underwent slight modifications in 2014 and a significant transformation in 2015. This paper aims at a thorough analysis of the structure of the curriculum as seen through the lens of the IGDA Framework (2008), including the coverage of both Core Topics and Institutional Considerations. The analysis is conducted in the context of foreign (mostly U.S.-based) game degrees and supported with comments on its design, implementation and modifications.

Keywords: curriculum, game design, game studies, IGDA Curriculum Framework

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II. Articles / Artykuły

Replay 1 (3) / 2016; II. Articles / Artykuły
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Izabela Pamuła
Uniwersytet Jagielloński

Gram, więc jestem. Instancja autorska a konwencja *let's play* w serii „File System Aging" Roberta Florence'a

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(…) kiedy po śmierci osób, po zniszczeniu rzeczy, z dawnej przeszłości nic nie istnieje, wówczas jedynie zapach i smak, wątlejsze, ale żywsze, bardziej niematerialne, trwalsze, wierniejsze, długo jeszcze, jak dusze, przypominają sobie, czekają, spodziewają się — na ruinie wszystkiego — i dźwigają niestrudzenie na swojej znikomej kropelce olbrzymią budowlę wspomnienia.

Marcel Proust, *W poszukiwaniu straconego czasu. W stronę Swanna*

Trudno wyczerpująco opisać tak prężnie rozwijające się zjawisko, jakim jest *let's play*. Za najprostszą z definicji uznać można zaproponowaną przez Thomasa Hale'a: „(…) *let's play* – metoda, za pomocą której gracze nagrywają dla widowni internetowej samych siebie podczas komentowania przechodzonej właśnie gry" (Hale 2013, 5). Sam autor wskazuje jednak na jej zdecydowanie wyjściową funkcję, rozdzielając *let's play* na poszczególne kategorie zależne od ekspertyzy komentatora oraz jego sposobu grania, które są wobec siebie wprost proporcjonalne. Jeśli *letsplayer* jest doświadczonym graczem, to istnieje większe prawdopodobieństwo, że jego wideo okaże się sprofesjonalizowaną rejestracją danej gry, na przykład przejściem eksperckim (ze stuprocentowym ukończeniem i metakomentarzem) lub wyczynowym, choćby w trybie trwałej śmierci (ang. *perma-death*). (Hale, 6–7). Spośród spostrzeżeń Hale'a z jednym nie zgadzam się fundamentalnie, a mianowicie z traktowaniem *let's playu* wyłącznie jako gatunku. To pojęcie, znajdujące się pomiędzy własnościami tekstualnymi dzieła a formacją dyskursywną (Mittel 2001, 8), ogranicza różnorodne formy, jakie wytwarzają poszczególni twórcy: od popowego PewDiePie, którego kanał przypomina nieciągnącą

się slapstickową komedię, po badaczkę Leigh Alexander, analizującą gry przygodowe wydane na Apple II.

Mając na uwadze w szczególności tę pierwszą, zabawową formułę, sądzę, że poszczególne *let's playe* rozpatrywać można pod kątem innego pojęcia zaczerpniętego z badań nad telewizją, a mianowicie formatu (Godzic 2004, 256–259) – swoistego, osadzonego w szerszej tradycji przepisu (przywoływany już PewDiePie transponuje *let's play* na jednoosobowe show, powielane przez część youtuberów, na przykład polskiego vlogera Rojo[1]), który jednak przez swoją plastyczność zaprzecza ciągłości. Format konotuje wyraziście swój związek z przemysłem, będąc nastawionym na maksymalną oglądalność i regulując związki, jakie widz wytwarza z umasowionym medium. Takie ujęcie pozwala na ciekawszą interpretację ewolucji tej formy wypowiedzi od „kumpelskiej" kultury partycypacji opartej na społeczności portalu Something Awful do ustandaryzowanej formuły znanej z YouTube'a. To przejście wywołało szereg przemian, takich jak traktowanie tożsamości jak marki, transparentna potrzeba posiadania widowni[2] bądź trudność w zachowaniu autentyczności (Hale 2013); uprawomocniają one wysnutą przeze mnie teorię formatowości *let's playu*. Wydaje się on bowiem swoistym wzorem przemysłowym czy foremką do ciasteczka – korzystający z niej youtuberzy powielają jej kształt, treść zaś przystosowują do swojego, najlepiej wyrażonego za pomocą kilku zer, „idealnego widza". Stąd zapewne preferowany nad badawcze skłonności charakter rozrywkowego, niezobowiązującego, kumpelskiego show z udziałem jednej lub kilku osób i rzeszy widzów, którzy „dla niego" subskrybują kanał. Poszczególni letsplayerzy należą już z pewnością do panteonu ikon YouTube'a, co wiąże się jednak z zagrożeniami niesionymi przez profesjonalizację i wytworzenie *de facto* nowej formy dziennikarstwa growego. Należy do niech przede wszystkim kwestia publikacji sponsorowanych przez dużych wydawców gier wideo, naruszających „podwórkowy" etos tego formatu. Niemniej jednak niezaprzeczalne jest, że *let's play* się zdemokratyzował, spopularyzował i zmonetaryzował, stając się także rozbudowanym narzędziem publicystycznym, stosującym wieloraką liczbę sformalizowanych już środków opowiadania.

Na tle tego zjawiska ciekawie sytuuje się Robert Florence, który na zasadzie antytezy eklektycznie je rozbudowuje, implementując elementy ludologii, studiów nad oprogramowaniem, proustowskiego strumienia świadomości oraz onirycznej lyn-

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1 „Styl, hasełka, sytuacje, memy" – takim opisem Rojo podsumowuje swój pierwszy cykl *let's play* (Rojo, 2011).

2 Jej emanacją można nazwać wszelkie parateksty, które pojawiają się wokół samych *let's playów*, jak choćby nawoływanie do subskrypcji czy obejrzenia kolejnego odcinka.

chowskiej estetyki. Zrealizowana przez niego w ramach współpracy z serwisem RockPaperShotgun seria „File System Aging" (z ang. „fragmentacja plików") stanowi próbę defragmentacji rozproszonej pamięci gracza i syna. Niebagatelna jest tutaj również postać samego Florence'a, który nie tylko zajmuje się krytyką gier wideo – stale pisze do wyżej wymienionego RPS – ale także prowadził programy o grach, jak choćby publikowana w sieci *Consolevania* (2004–2009) czy telewizyjny *videoGaiden* (2005–2008) produkowany dla szkockiego oddziału BBC. Z tym ostatnim Florence związany był już wcześniej, zajmując się realizacją sitcomów, np. *Chewin' The Fat* (2000–2002) czy późniejszego *Burnistoun* (2009–2012). Formuła *let's play* także nie była mu obca – nagrał satyryczną serię wideo zatytułowaną „Rab Doesn't Know What A Let's Play Is" (2013), podczas której prezentował grę *Raw Danger* (Irem 2006). W 2014 roku natomiast wyreżyserował swój pierwszy pełnometrażowy horror *The House of Him*. Nie dziwi więc, że tak różnorodnie wykorzystuje on format *let's play* do wykreowania czegoś więcej, aniżeli swoisty stand-up czy analiza badawcza.

Porządkowanie pamięci

W pierwszym odcinku „File System Aging" zatytułowanym *Defragmentation* Florence podaje przyczyny, dla których zdecydował się zrealizować tę serię. Pierwszym z nich jest chęć uporządkowania (defragmentowania) wspomnień związanych ze zmarłym ojcem, drugim – pozostawienie czegoś swojej córce. Rozgrywkę z gier *Shogo Mobile Armor Division* (Monolith Productions 1998) i *Outcast* (Appeal 1999) Florence przeplata zaciemnionymi czarno-białymi ujęciami ze szklarni, w której jego ojciec oddawał się swojej ogrodniczej pasji. Oba te tryby opowiadania o przeszłości łączy jeden motyw – przestrzeń wspomnienia. W interpretacji Florence'a gry wideo to miejsca, w których można się ukryć, żyć i czuć komfortowo, znając je na pamięć (Florence 2015). Twórca dokonuje w pierwszym odcinku założycielskiego aktu „przypominania", próbując defragmentować skorodowaną pamięć.

Druga odsłona serii o tytule *Beginnings* koncentruje się więc wokół pierwszych gier, które ukształtowały osobowość autora. Wskazuje on na *Castle of Terror* (Beam Software 1984), wydaną na Commodore 64 produkcję będącą źródłem jego fascynacji horrorem. Twórca opowiada także o *M.U.L.E* (Ozark Softscape 1983), stanowiącym synekdochę gier planszowych wszechobecnych w jego dzieciństwie (i nie tylko, obecnie Florence redaguje serię „Cardboard Chlidren" dla RPS). Ostatnie minuty odcinka poświęcone zostają *Alter Ego* (Activision 1986) – grze w życie metaforyzującej proces dorastania. Niegdysiejsza zabawa w ośmiu bitach dla czterdziestokilkuletniego Florence'a stanowi bolesną codzienność naznaczoną pozorną długością życia. Osią

wszystkich rozważań staje się metaforyczna podróż do kuzyna – posiadacza Commodore 64, którą autor jako dziecko odbywał z rodzicami, zastąpionymi tutaj parą opustoszałych siedzeń.

Trzeci odcinek, *Another World*, jak sam tytuł wskazuje, poświęcony jest w całości grze *Another World* (Delphine Software 1991). Jak łatwo można się domyślić, Florence poświęca się przemyśleniom o odrębnych rzeczywistościach. W tym celu radykalizuje nieco formę: rezygnuje ze zbliżenia na twarz i różne obiekty, ujęcia niepochodzące z gry pierwszy raz przedstawiane są w kolorze, choć nie oznacza to, że więcej prezentują. Twarz autora okrywa bowiem cień, a jedyne, co widzi gracz, to trzymana przez niego w dłoni lampa o strukturze wielkich pikseli. Daje to poczucie oniryzmu (o wiele mniej wybrzmiewającego w poprzednich częściach) oraz sugeruje odejście od próby defragmentacji własnej pamięci w stronę ludologicznych rozważań nad grami wideo. Według autora należą one nie tylko do porządku przedmiotów do zabawy, ale są także sztuką, podróżą, doświadczeniem – wykraczają poza siebie, przenikając jednocześnie gracza.

W kolejnym, czwartym odcinku, *Game Of The Past Edition*, Florence gra w *Unreal Tournament* (Epic Games, Digital Extremes 1999), zestawiając elementy rozgrywki ze swobodnymi ujęciami miasta. Daje to wrażenie nałożenia miejskiej topografii na mapy *deathmatchu*, spotęgowane powtarzalnością całego odcinka zaczerpniętą zapewne z mechaniki przywoływanej gry. Na zasadzie usterki kilkukrotnie pojawia się ten sam dialog bądź ujęcie. Florence wykorzystuje ten zabieg, aby opowiedzieć o niemożności przejścia do porządku dziennego nad pewnymi wydarzeniami, wokół których będziemy bezustannie „biegać i skakać", niczym w pętli przeszłości. Trudno jest wyraźnie stwierdzić, gdzie w tym przypadku kończy się gra, a zaczyna życie, i czy takie rozróżnienie w ogóle jest konieczne.

Piąty, najdłuższy jak dotąd odcinek, *Something Comes From Space*, rozpoczyna się kilkuminutowym wstępem, w którym Florence opowiada o zaszczepionej w nim przez ojca pewności, że „coś" nadciąga z kosmosu. Monolog odurzonego alkoholem autora, okraszony ujęciem zmęczonej twarzy oświetlonej tylko świeczkami dającymi niewyraźne żółtawe światło, stanowi dominujący element całego odcinka. Rozgrywka w *Wing Commander III: The Heart of the Tiger* (Origin Systems 1994) wpleciona jest w opowieść na zasadzie przebitki, a służy zobrazowaniu prostej tezy – gracz jest grą, a raczej grami, w które gra. Tożsamość zatem to zlepek tego, co zaszczepiają w nas opowieści rodziców oraz te elementy kultury, w których kochamy partycypować. Florence kończy *Something Coming From Space* stwierdzeniem, że gry powinny czasem pozostać niedorzeczne, ponieważ tylko wtedy będą piękne i niewinne, czyli łatwe do wchłonięcia przez osobowość.

W ostatnim odcinku, zatytułowanym *In The Dark*, Florence podsumowuje poprzednie części serii oraz nawołuje do odkrywania i eksplorowania własnego światła. Metaforyzuje to, pokazując na początku prologu grę *Clive Barker's Undying* (DreamWorks Interactive 2001), której główną oś fabularną stanowi oczyszczanie świata ze zła. Reszta przekazu zobrazowana jest czarnym ekranem, z którego, w miarę rozwijania się werbalnego monologu autora, wyłaniają się silnie kontrastujące zmultiplikowane fragmenty filmów i gier. Nakładają się one na siebie w kakofonicznej tyradzie zwieńczonej przez wypełniającą ekran scenę piosenki śpiewanej w wysokich tonach, pod koniec urwanej przez nagły *glitch*. W tym przypadku gra jest tylko pretekstem do stworzenia większej narracji (wykracza daleko poza siebie), dotyczącej monetyzacji, zaangażowania w kulturę. Fałszywym światłem Florence nazywa nie tylko jej produkty, nie wyłączając swojej serii, ale także opinie, gusta i poglądy. Prawdę natomiast odnaleźć można według niego w realnym, bliskim kontakcie oraz swobodnym, samodzielnym myśleniu, w przestrzeni, w której zaangażowanie nie będzie warunkiem zarobienia na chleb.

Pamięć autora

Pamięć w przypadku gier wideo nie wyzbyła się jeszcze swojego biurokratycznego powinowactwa (Sack 2008, 180–190), sprowadzającego to słowo najczęściej do wymagań, jakie dana produkcja stawia naszemu komputerowi co do posiadanej pamięci operacyjnej. Robert Florence dokonuje więc pewnej subwersji, odwracając ten układ do góry nogami – w serii „File System Aging" to pamięć potrzebuje programu. Gry są jej nośnikami, pozwalającymi na defragmentację rozpadającego się systemu wspomnień, ale także jego przechowanie. Nietrudno tutaj dostrzec powinowactwo pomiędzy twórczymi zabiegami Florence'a i zjawiskiem *retrogamingu* rozumianego jako przechowanie lub zachowanie zbiorowego wspomnienia kulturowej tożsamości graczy. Twórca przetwarza swoją tęsknotę, wykorzystując gry wideo do uruchomienia procesów nostalgii refleksyjnej, która – jak za Swietłaną Boym wskazuje Maria B. Garda – niczego nie odtwarza ani nie przywraca, ale „odnosi się do osobistego doświadczenia i łączy z kulturowymi procesami przypominania" (Garda 2014, 4). Florence za pomocą gier wideo zakodowanych w swojej tożsamości kreuje więc seans przypominania sobie dzieciństwa, jednocześnie przypominając widzom o istnieniu tych leciwych już przecież produkcji, niejako zachęcając do zagrania w nie (jest zatem retroletsplayerem). Forma poszczególnych odcinków skoncentrowana jest wokół dwóch chwytów: narracji gry i nakładającej się na nią opowieści/narracji pamięci. Dzięki takiemu zabiegowi autor sprawia, że gry wideo w tym ujęciu stają się czymś więcej, aniżeli tylko zabawkami. Wprowadza własne postulaty

w czyn, przekształcając swoją rozgrywkę w proustowski akt smakowania magdalenki (Proust 1937), w konsekwencji czego porzuca wraz z ostatnim odcinkiem formułę *let's play* na rzecz swego rodzaju moralitetu werbalnego.

Performatywny akt grania przenika się z performatywnym aktem wypowiedzi, pogłębiając sensy szeroko zakrojonych rozważań. Niebagatelne wydaje się więc zaproponowane przeze mnie określenie Roberta Florence'a autorem. Oczywiście wszyscy letsplayerzy realizują podobną formułę autorską – grają w grę, równocześnie o niej opowiadając – jednakże w ich przypadku autorstwo wydaje się nieprzystającą kategorią (nawet jeśli odniesiemy się do telewizyjnego showrunnera). Niemniej analizując ich postaci w kontekście formatu, zauważyć można, że w swoich pozbawionych scenariusza oraz pełnych improwizacji programach pełnią oni jednocześnie rolę prowadzących i obiektów. Przywoływany już wcześniej PewDiePie reżyseruje siebie i sposób, w jaki gra, ale wciąż pozostaje w skonwencjonalizowanym formacie – ekran podzielony jest na dwie ramy; za pomocą jednej z nich widz obserwuje reakcje youtubera, a druga pozwala na oglądanie prowadzonej rozgrywki. W przypadku Florence'a pozwoliłam sobie na zastosowanie pojęcia autora, ponieważ „File System Aging" to nie tylko reżyseria zaimprowizowanego siebie, ale przede wszystkim pewnego ciągłego, zserializowanego, przemyślanego i zamkniętego dzieła. Twórca, który „nie wie, czym jest *let's play*", celnie odwołuje się do tego formatu, wykorzystując najważniejszą jego cechę, aby wpleść ją w szereg odrębnych struktur charakterystycznych dla różnorodnych mediów narracyjnych, nie tylko audiowizualnych. Według mnie ta hybrydyczna formuła okazuje się autorska nie w kontekście romantycznego geniuszu czy nowofalowego wpisania twórcy w dzieło – choć kwestia tożsamości Florence'a pełni tu znaczącą rolę – ale dzięki znajomości rzemiosła, także z zakresu publicystyki internetowej, telewizji i kina. Najciekawszym tego przejawem jest wyreżyserowanie własnego niekonwencjonalnego (w odniesieniu do treści produkowanych przez popularnych letsplayerów) doświadczenia bycia graczem. Persona Florence'a jako gracza składa się z kilku nałożonych na siebie ról: twórcy serii, gracza w ujęciu tożsamościowym, gracza transgresyjnego (Aarseth 2007) oraz ergodysty (Kłoda-Staniecko 2010) mającego punkty styczne w procesie *playformance* (Frasca 2007) z przed chwilą użytą Aarsethowską kategorią.

Gra w pamięć

Analizę poszczególnych funkcji, jakie Florence spełnia w wykreowanej przez siebie serii, zacznę od końca. Bartosz Kłoda-Staniecko (2010, 101–102) definiuje ergodystę jako odbiorcę znaczeń, który w trakcie działania (rozgrywki) swobodnie je przetwarza, a następnie przekazuje dalej z naddatkiem nowego sensu. Niewątpliwie autora

„File System Aging" można nazwać ergodystą, który grając, wytwarza solidny naddatek znaczeń nieprzewidzianych przez twórców gier. W jego perspektywie gry można eksplorować nie tylko jak koherentne opowieści, ale też emanacje pewnych pojęć, takich jak przestrzeń, tożsamość, inny świat, Inny, podróż, przeszłość czy nawet kosmos. Florence dokonuje takiego rozpoznania dzięki interpretacji haptycznej dokonywanej w trakcie *playformance* – opartego o symulację konstruowania znaczenia wykonywanych procedur w trakcie konkretnego działania (Frasca 2007, 136–137). *Playformance* jest więc tym, co stoi pomiędzy odbiorem a przekazem – jest przetworzeniem łączącym obie te kategorie, podczas którego dokonuje się proces przypominania. Najciekawszym aspektem semiozy dokonanej przez Florence'a jest jednak to, że pomija ona ograniczenia designu gry, chociaż w poszczególnych odcinkach to właśnie jemu podporządkowane są użyte przez autora chwyty. Paradoksalnie właśnie one dowodzą tego, co postuluje Florence – gra rozrasta się poza siebie wprost proporcjonalnie do ilości znaczeń produkowanych w trakcie rozgrywki. Widz w toku prowadzonej przez autora narracji porwany zostaje w nigdy niekończący się strumień świadomości i przypominania pozbawiony zamkniętego zakończenia. Wiąże się to ze stwierdzeniem Miguela Sicarta (2011), który stwierdzał, że gracz w procesie semiozy może swobodnie interpretować znaczenia.

W tym momencie dochodzimy do przywoływanego wcześniej wniosku, czyli powracającego przekonania Florence'a, że gry nigdzie się nie kończą. Użycie słowa „nigdzie" nie jest przypadkowe, ponieważ autor skupia się wyraźnie na przestrzennym wymiarze gier – rozumianym nie tylko dosłownie. Florence nie tylko opowiada o innych światach czy miejscach pamięci, ale odwołuje się również do gry rozumianej jako przestrzeń poznania własnych tożsamości. Forma „tradycyjnie" kręconych ujęć poszczególnych odcinków przenika się z równolegle prezentowanymi grami. Obok dziwnych i nieznanych światów powracających w każdej z nich (nawet *Alter Ego* pełniło również funkcję eksploracji nowej tożsamości) mamy przecież do czynienia z ambientem wpisanym w codzienną rzeczywistość: maleńką szklarnię, pusty pociąg, ciemność rozświetlaną pikselową lampą bądź zapętlone ulice średniej wielkości miasta. Oniryzm tego przedstawienia przywodzi na myśl niekoherencję fabularną dzieł Davida Lyncha (McGowan 2000), których sensy podporządkowują sobie sposoby opowiadania. Światy budowane przez Lyncha w filmach i serialach spod znaku *mózgotrzepów*, tj. *Twin Peaks* (1990–1991), *Zagubiona autostrada* (1997) czy *Mullholland Drive* (2001), są labiryntami, po których widz porusza się pozbawiony mitycznej włóczki. U Florence'a jednak łącznikiem pomiędzy liminalną przestrzenią pamięci a topografią gier jest spojrzenie ojca, który ze swojej zadymionej wspomnie-

niami szklarni patrzył w okno syna, wypełnione niewyraźnymi odbiciami gier wideo. W taki sposób Florence reżyseruje swoje *playformance* – rozbudowuje je poza świat gier, żeby zaangażować widza. Dokonane przez niego przetworzenie formuły *let's play* pozwala na unifikację grającego i oglądającego w obrębie wspólnego doświadczenia, dzięki nadaniu *playformance'owi* eksplicytnej formy wizualnej, nieograniczającej się do przestrzeni gier, ale wciąż funkcjonującej w ramach ich estetyki.

Poszerzanie formuły

Let's play stanowić więc może eklektyczną formę komunikacji pomiędzy osobami zaangażowanymi w granie, wymianę doświadczeń i emocji związanych z grami wideo, lecz także poza nie wykraczającymi. Taka definicja nie ogranicza się jedynie do eksperymentalnej serii „File System Aging", ale może zostać przyłożona do całości wyprodukowanych do tej pory emanacji tego formatu. Różnica polega jednak na tym, że gra dla Roberta Florence'a nie jest celem, ale środkiem, co paradoksalnie pozwala na uwolnienie jej oraz gracza od różnych dyskursów związanych choćby z monetyzacją formuły czy tylko publicystyką. Naturalnie przekaz płynący z ostatniego odcinka kumuluje skoncentrowane w serii ideologiczne znaczenia, ale sposób pokazania doświadczenia pamięci przechowywanej w grach jest na wskroś intymny, bo ukazujący gracza w osobistym procesie semiozy, którego nastawieni na milionową publiczność letsplayerzy nie są w stanie oddać.

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Summary

The aim of this article is to analyse *let's play* not only as entertaining act of communication but also as an eclectic one which can make games exceed themselves. *Let's play* as a method of game critique has developed some key characteristics. It's not surprising, then, that one can observe the emergence of various subversive forms such as Robert Florence's series "File System Aging" which rises as antithesis to the most popular channels. Florence directs his own player experience by merging software studies, ludology, stream of consciousness, and oneiric aesthetics known from David Lynch's movies in order to defragment scattered memory of a gamer and a son. This article will look into the method of transgressive playformance and haptic interpretation used by the artist to expand the definition of a *let's play* and therefore also that of a game.

Słowa kluczowe/Keywords: let's play, format telewizyjny, gracz trangresyjny, ergodysta, playformance, autor, let's play, tv format, transgressive player, ergodist, playformance, auteur

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Ile emersji w grach?
Recenzja książki: Piotr Kubiński, *Gry wideo. Zarys poetyki,* Universitas, Kraków 2016

Polskie badania gier wideo nie mają własnego języka. Pojęcia, jakimi się w nich posługujemy, zostały zaczerpnięte z innych dziedzin nauki („narracja", „tożsamość", „styl gry" rozumiany jako odpowiednik „stylu odbioru") z anglojęzycznych badań nad grami („immersja" w znaczeniu specjalistycznym, „utwór ergodyczny", „retoryka proceduralna") bądź z nienaukowych rejestrów polszczyzny i angielszczyzny („interfejs", „postać", nazwy gatunków gier, różne tłumaczenia określeń *gamification* i *serious games*). Jak dotąd w naszym kraju nikomu nie udało się wypracować terminów, które znalazłyby szersze zastosowanie w rodzimym, a tym bardziej międzynarodowym dyskursie. Jest to jeden z przejawów niekumulatywnego charakteru dużej części polskich badań gier wideo, stanowiącego przeszkodę w ich rozwoju (por. Krawczyk, 2016, s. 29).

Monografia Piotra Kubińskiego może przyczynić się do zmiany tego stanu rzeczy[1]. Autor przedstawia w niej termin „emersja", który określa grupę zjawisk naruszających lub niwelujących poczucie zanurzenia w cyfrowej rzeczywistości (s. 69–70). Jest on dokładnie omawiany i opisany zostaje jako „najważniejszy wkład […] książki w przyszłe badania gier" (s. 311). Parze antonimicznych pojęć immersji i emersji po-

1 Pewien potencjał w tej dziedzinie ma również przedstawiona przez Pawła Grabarczyka (2015) i rozwinięta przez Marię B. Gardę (2016, s. 105–137) propozycja zastąpienia angielskich określeń *hardcore game*, *hardcore gamer*, *casual game* i *casual gamer* polskimi odpowiednikami: „gra angażująca", „gracz zaangażowany", „gra nieangażująca", „gracz niezaangażowany".

święca Kubiński w przybliżeniu połowę pracy. Bardzo wiele gier cyfrowych – jeśli nie wszystkie – można analizować pod kątem relacji między czynnikami immersyjnymi a emersyjnymi, a zatem proponowane pojęcie ma szerokie zastosowania badawcze. Ponadto autor promuje stworzony termin zarówno w tekstach pisanych po polsku (Kubiński, 2014a, 2014c, 2015a, 2015b), jak i w publikacjach anglojęzycznych (Kubiński, 2014b, 2016).

Równocześnie zjawiska emersyjne i immersyjne nie są wyłącznym tematem tej pracy, ale częścią rozleglejszej problematyki. Ogólnym celem monografii jest bowiem sformułowanie zarysu poetyki gier cyfrowych (w książce obejmuje on także semiotyczną analizę interfejsów graficznych oraz wybrane przykłady oddziaływania gier wideo na inne teksty kultury i praktyki kulturowe). Tradycyjne rozumienie poetyki jako „dziedziny teorii literatury zajmującej się strukturą tekstów literackich" przeciwstawia tutaj Kubiński „nowoczesnym ujęciom", które „wykorzystują narzędzia poetyki do badania najróżniejszych – nie tylko literackich czy nawet szerzej: artystycznych – form tekstowości" (s. 15).

Autor nie określa przy tym, czy poetykę gier elektronicznych traktuje jako dziedzinę teorii literatury, kulturoznawstwa, medioznawstwa, semiotyki, groznawstwa, czy może autonomiczny obszar badań interdyscyplinarnych. W tomie można znaleźć argumenty na rzecz każdego z tych wyborów i brak uściślenia rodzi pewną metanaukową dezorientację (choć najbardziej prawdopodobna wydaje się ostatnia z wymienionych możliwości). Nie umniejsza to jednak użyteczności przedsięwzięcia, które podobnie do prac z zakresu poetyki *stricte* literaturoznawczej ukazuje podstawową strukturę wybranej grupy tekstów kultury i może stać się inspirujące dla badaczy i badaczek przyjmujących różnorodne pespektywy teoretyczne.

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Zdaniem Kubińskiego o swoistości gier wideo decyduje połączenie ich ergodycznego oraz interaktywnego charakteru – zakładającego przeprowadzanie znaczących działań i uczestnictwo w systemie sprzężeń zwrotnych – z uobecnianiem (reprezentowaniem) gracza w udostępnianej za pośrednictwem ekranów cyfrowej rzeczywistości. W badaniach nad nowymi mediami zjawiska związane z tą ostatnią cechą określa się różnoznacznymi pojęciami teleobecności, obecności oraz immersji. Dla książki najważniejsza jest immersja, definiowana regulacyjnie przez autora jako „wrażenie niezmediatyzowanego uczestnictwa, bezpośredniej obecności w cyfrowej przestrzeni generowanej komputerowo" (s. 51). Możliwość osiągnięcia takiego stanu to dla wielu użytkowników jedno z głównych kryteriów oceny gier, a dla wielu twórców – zasadnicze zadanie projektanc-

kie. Popularne przekonanie o kluczowej roli immersji wywiera bardzo istotny wpływ na kształt i odbiór gier wideo, nawet jeśli istnieją również takie sposoby czerpania satysfakcji z gier, które nie polegają na zanurzaniu się w cyfrowym świecie.

Sposobom tym sprzyjają czynniki emersyjne, które mogą być dziełem przypadku, występować rutynowo w grach danego typu albo stanowić owoc świadomych zabiegów twórców gry. Dwie pierwsze możliwości określane są w książce wspólnym mianem technicznej deziluzji, a ich przykłady to błędnie wyświetlane tekstury oraz „niewidzialne ściany" i pozorne przeszkody blokujące ruch bohatera. O wiele bardziej szczegółowo charakteryzuje Kubiński możliwość trzecią, analizując fragmenty czy aspekty gier takich jak *Batman: Arkham Asylum*, *Wiedźmin*, *Wiedźmin 2*, *Metal Gear Solid* oraz *Call of Juarez: Gunslinger*. W ten sposób autor przedstawia kolejne odmiany emersji: nasycanie znaczeniami fizycznego nośnika utworu, subtelne podważanie samowystarczalności świata gry za pomocą odniesień zewnątrztekstowych, bezpośrednie zwracanie się fikcyjnych postaci do gracza (służące nie tylko przekazywaniu informacji o fabule bądź interfejsie, lecz także uzyskiwaniu efektu komicznego lub nadawaniu grze nowych sensów), wreszcie kwestionowanie obiektywizmu sytuacji narracyjnej.

Poszczególne analizy Kubińskiego są przekonujące i otwierają nową, ważną perspektywę dla badań nad grami cyfrowymi. Nie w pełni zasadna wydaje się jednak teza, że „emersyjność okazuje się żywiołem bardzo silnie obecnym w omawianym medium" (s. 148). Zdecydowana większość przytaczanych przykładów dotyczy bowiem okazjonalnych fragmentów rozgrywki; nawet jeżeli niekiedy są to fragmenty pamiętne i mające swoje miejsce w kulturze gier (jak spotkanie z Psycho Mantisem w *Metal Gear Solid*), to niekoniecznie przekładają się na całościowe doświadczenie gry.

Widać to również w rozdziale, w którym autor analizuje znakowy aspekt wizualnej warstwy interfejsów użytkownika w grach cyfrowych, proponując rozbudowaną klasyfikację interfejsów oraz podkreślając ich podwójną funkcję, komunikacyjną (informacyjną, impresyjną, stylizacyjną) i narzędziową (umożliwiającą graczowi wykonywanie zamierzonych czynności). Kubiński odnotowuje tutaj, że w wyniku daleko posuniętej konwencjonalizacji obsługa interfejsów staje się intuicyjna dla doświadczonych użytkowników. Sam też zauważa, że prawidłowość ta odpowiada immersyjnemu modelowi postrzegania gier, a ponadto opisuje kilka rozwiązań projektanckich niwelujących efekty emersyjne: minimalizację interfejsu, jego stylizację, przejmowanie jego funkcji przez niektóre elementy świata przedstawionego, możliwość decydowania o liczbie i układzie wyświetlanych części interfejsu oraz czynienie tego ostatniego kluczowym komponentem rozgrywki.

W moim przekonaniu teza o „bardzo silnej" obecności emersji w grach wideo wymagałaby mocniejszych argumentów. Nie do końca przekonuje mnie też stwierdzenie,

że gry to medium „rozdarte pomiędzy dwie przeciwstawne tendencje czy też siły – immersję oraz emersję" (s. 216). Zamiast rozdarcia mówiłbym raczej o regularnie występującym napięciu, które może mieć mniejszą lub większą siłę. Tak złagodzoną tezę książka już wystarczająco uzasadnia, a nadal jest to teza ciekawa i nośna badawczo.

Dodatkowo przydatne mogłoby być rozróżnienie na czynniki emersyjne (cechy gier) i efekty emersyjne (sposoby kształtowania doświadczenia rozgrywki przez określone cechy). Dzięki niemu łatwiej byłoby pokazywać, że obecność czynników emersyjnych nie zawsze wystarcza do uzyskania odpowiednich efektów, ponieważ potencjał tych pierwszych może zostać zablokowany – tak jak ma to miejsce w przypadku strategii stosowanych przez twórców gier do osłabiania emersyjnej funkcji interfejsów. Wówczas też chyba lepiej dostrzegalibyśmy to, iż przewaga czynników i efektów immersyjnych w wielu produkcjach nie jest nieunikniona, lecz wynika z wyborów projektanckich. Nawet jeżeli żywioł emersyjny w danym tytule jest osłabiony, to i tak we wnętrzu gry kryją się siły, które przy innych rozwiązaniach estetycznych mogłyby go znacząco wzmocnić.

Powyższe komentarze mają rys krytyczny, ale są również wyrazem uznania; *Gry wideo…* to książka, z którą warto polemizować i której stwierdzenia warto rozwijać. Oprócz rozróżnienia czynników i efektów emersyjnych wskazałbym tutaj jeszcze trzy przykładowe drogi. Pierwsza z nich – to uwzględnienie empirycznych i teoretycznych analiz doświadczenia gry (np. Skok, 2013, 2014; Sweetser i in., 2017). Być może w ten sposób udałoby się bliżej określić cechy gier sprzyjające rozgrywce immersyjnej lub emersyjnej. Drugą możliwością byłaby głębsza refleksja nad zróżnicowaniem samych graczy. W jednym z miejsc Kubiński sygnalizuje taką perspektywę, pisząc, że ukrycie napisów tłumaczących wypowiadane dialogi może służyć immersji u osób dobrze znających język oryginału, ale u pozostałych grających wywoła efekt emersyjny (s. 229). Z kolei trzecia droga polegałaby na rozbudowaniu spostrzeżeń krytycznych. Praca jest w przeważającej części deskryptywna, pojawiają się w niej jednak uwagi o militarnej genezie interfejsów (s. 236–241) oraz o skutkach ich petryfikacji: intuicyjność współczesnych interfejsów (growych i innych) dla doświadczonych użytkowników jest zarazem przyczyną ich niskiej przystępności dla osób starszych, które wychowały się przed okresem konwencjonalizacji tego zasadniczego składnika mediów cyfrowych. Podobnych zagadnień z pewnością można byłoby znaleźć więcej.

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Poza dialektyką immersji i emersji ważnym wątkiem monografii są jeszcze związki między grami wideo a innymi zjawiskami kulturowymi. Autor powraca do tej kwe-

stii niejednokrotnie, zestawiając wrażenie obecności w cyfrowym świecie z efektami wywoływanymi przez panoramiczne malowidła przestrzenne, sale strachów, a także muzea i galerie umieszczające widza pomiędzy dziełami sztuki (s. 45–48), porównując semantyzację nośnika technologicznego w *Batman: Arkham Asylum* do zabiegów użytych w powieści Marka Z. Danielewskiego *House of Leaves*, w powieści *Laurence'a Sterna Życie i myśli JW Pana Tristrama Shandy* oraz w filmie *Persona* Ingmara Bergmana (s. 79–94), przybliżając jeden z właściwych grom efektów emersyjnych do teatralnego „burzenia czwartej ściany" i przywołując przy tym również przykład postaci Brodatego Żyda, który patrzy wprost na osoby oglądające obraz Jana Matejki *Konstytucja 3 maja 1791 roku* (s. 113–127), czy też wiążąc znakowy aspekt graficzny interfejsów użytkownika w grach wideo z nadzwyczajną wagą interfejsów w kulturze współczesnej (s. 151–163).

Zasób odniesień jest więc rozległy – obejmuje literaturę, kino, teatr, malarstwo – i dzięki temu praca spełnia złożoną we wstępie obietnicę uwzględnienia związków między grami elektronicznymi a innymi tekstami kultury (s. 14–26). Niemniej monografia koncentruje się na charakterystycznych właściwościach gier cyfrowych, zgodnie z nazwą poprzedzającej książkę rozprawy doktorskiej napisanej pod kierunkiem Ewy Szczęsnej: *Poetyka gier wideo. Cechy swoiste*. Niewiele miejsca przeznacza autor na omówienie niespecyficznych lub mniej specyficznych własności gier, np. konstrukcji światów przedstawionych (przedmiotem porównań z innymi tekstami kultury jest przede wszystkim wymiar immersji i emersji, a celem – uwydatnianie związków, pokrewieństw, lecz nie pokazywanie obszarów, na których różnice zanikają). Warto byłoby wskazać na to wprost, jeśli nie w tytule, to we wstępie i zakończeniu.

Na osobną pochwałę zasługuje bardzo dobre przygotowanie książki pod względem redakcyjnym i edytorskim (bodaj jedyny istotniejszy wyjątek to powtórzenie małego fragmentu tekstu na stronach 58 i 67). W połączeniu z kolorowymi ilustracjami sprawia to, że lektura pracy jest płynna; podobnie klarowny styl pozwala stosunkowo łatwo śledzić myśl autora.

Najsłabszą częścią monografii jest według mnie rozdział *Wpływ gier wideo na inne teksty kultury – wybrane przykłady*. Pozostaje on w bardzo luźnym związku z wcześniejszymi rozdziałami (m.in. jako jedyny nie porusza tematyki immersji i emersji), sam też nie tworzy spójnej całości. Oprócz literatury grywalnej opisuje bowiem głównie gamifikację (która w odróżnieniu od pozostałych badanych przez Kubińskiego zjawisk stanowi raczej przestrzeń praktyk niż obiektów) oraz gry dziennikarskie i perswazyjne (które same są grami, a nie innymi tekstami kultury). W tej części

książki – i tylko w niej – odczuwalne jest to, że znaczne partie tekstu były wcześniej publikowane w formie rozproszonej.

Słabsza końcówka nie powinna jednak przesłaniać wartości całego tomu. Jest on oryginalną (chyba również w skali międzynarodowej), w zdecydowanej większości konsekwentną, starannie udokumentowaną bibliograficznie analizą konstytutywnych właściwości gier wideo. Potrzebujemy takich prac.

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Summary

Piotr Kubiński's monograph is an outline of certain specific aspects of video games, examined from the perspective of poetics. Apart from a semiotic analysis of the user interface and a look at how games influence various texts and practices, what the readers will find here is an investigation into the strained relationship between immersion and emersion in video games. Contrary to the popular belief that immersion is unquestionably desirable, Kubiński shows that emersion – a group of phenomena that disrupt the players' impression of unmediated presence in the game world – can also be a source of ludic and artistic effects that merit a scholarly study.

The book offers a well-organized and carefully documented analysis of an understudied dimension of digital games; the tensions between immersion and emersion are present in many, if not all, video games; and the author's efforts in other publications are making the term "emersion" more visible. For these three reasons, the monograph has the potential to become a significant work in Polish game studies, encouraging other scholars to apply Kubiński's term in their own research. This would be instrumental in the development of an academic field that has suffered from insufficient accumulation of knowledge.

Słowa kluczowe: emersion, gameplay, immersion, poetics, user interface

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