Making it personal in critical games to affect reflection and have a two-way dialogue

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ABSTRACT

This thesis project explores the capacity of digital critical games when it comes to conveying socially relevant messages and making the player reflect on the real life outside of the game, with a specific interest in self-reflection. Starting with critical analyses of the vast field of existing online socially critical games, this research exploration continues with an empirical evaluation of selected few samples of such games by recruiting people to playtest them, followed by interviews. Identifying design qualities and openings based on the findings, a prototype is then implemented and iterated based on playtesting with more participants, again followed by interviews. The sought out novel aspects of online critical games, that are explored via the prototype, are:

1. Making the critical game experience personal by incorporating real life information from the player’s own life. Seeking in this way to ensure the flow outside of the magic circle and into the real life, this also aimed at supporting a stronger impact of the message conveyed by communicating it on the player’s “own ground”, i.e. in the terms of their own real life and personal feelings.

2. Allowing a space for the player to express disagreeing with the message coming from the game and giving them the possibility to enrich it collectively by sharing through the game what their own view on the matter is. This was an attempt for exploration in the direction of supporting a two-way dialogue between the game designer and the player in the sense of giving the player a voice and a stronger agency both in the game and in the message conveyed.

So these two:
1. self reflection via making it personal and
2. self expression via allowing space for a two-way dialogue,
were the two main topics incorporated in the artifact that came out of this research. Consequently the contribution of this thesis are the reflections from trying to incorporate such critical game’s qualities and the analyses of it, along with all the other factors that came out from the earlier investigation and evaluation of similar games concerning what exactly makes people reflect on real life and think outside of the magic circle while playing a critical game.
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To combine an interest in design for engaging with issues in our modern society with a fascination with the qualities of the game medium, this thesis will be exploring the potential of critical games in stimulating reflections in their users about their own real lives and the reality of the society they live in.

Modern society’s premise

As our modern societies develop under the influence of the prominent role of technology in the social processes that form our modern culture and the psychology of the masses, and as life in the western cultures keeps making it easier for the common person to cover their basic needs, higher level values start floating around as modern trends.

Such is for example the seeking awareness trend or the pursuits of “mindfulness” in the sense of individuals striving to gain a good understanding of their own thoughts, needs and feelings and thus finding ways to enrich further their everyday lifestyle. This is also supported by the fact that the modern society we live in does offer a wide variety of opportunities as long as one has the initiative to find them and make them happen. This trend relates to the sought out by this thesis self-reflection aspect.

Another such modern trend with relevance to this project is the inherent by the internet’s qualities convenience with online self-expression. Due to it being especially stimulated by the social media, it is naturally mostly associated with the virtual identities that we create for ourselves in these social platforms (facebook,
twitter, instagram, etc). But it is the other, often quite anonymous, aspect of the online self-expression that relates to my pursuits with this thesis. Namely, the nurturing of freedom of expression about any topic by anybody, resulting perhaps from the unlimited scope of audiences one can reach online and without even the need to reveal real personal identity. And though this makes it more detached from the real person behind the expression and consequently less credible on its own, it provides a space for easier stimulation of an individual's self expression that when mapped together with those of others can have a collective voice with a credibility of its own, collective kind.

Why a game?

Here are depicted the main reasons for choosing critical games as the medium for this project over other kinds of design interventions for addressing social issues.

The main quality that differs games from other types of media, and what I believe is one of the strongest reasons why the game industry nowadays is generating more revenue than the other entertainment industries (Nath, 2016), is the agency that games by definition provide to their users, the players and the inherent by it high rates of engagement. Presented with a game to try, the users' expectations are automatically set to being an active agent in this interaction and not just a passive consumer of information as they'd likely be if they are presented with a film, musical or written piece of design for social change. This suggests that using games as a medium for addressing socially relevant topics should have a potential of their own to have a stronger impact on the people interacting with them due to their highly engaging character.

Games are also inherently associated with entertainment which implies both advantageous and disadvantageous consequences of using a game as a critical piece of design.

On the positive side, the high popularity of games amongst various audiences makes them a medium that easily engages people's interest. The implied entertainment aspect of it makes games an attractive interactive piece to many differently profiled people, especially the younger generations. This combined with internet's qualities gives online games the potential of a widely scoped reach for passing on a message with social significance. Having the wide public capacity covered by the choice of medium itself, narrows down the exploration of this thesis to “how good can critical games be at making people reflect on their real lives”.

This, though, connects to the disadvantageous aspect of using a game as a medium for reflection inducing purposes. The entertainment focused aspect of it and the strong magic circle (Stenros, 2012) around games, make them presumably inherently resilient to real life reflections. I’d like to challenge this concern with this
thesis and explore in what ways could the magic circle around games be effectively broken in order to allow reflection on the real life of the user and the others in their society. After all, the magic circle’s notion of entering an alternative world and the inherent open mindedness players approach that games’ world with can have its own benefits in putting the player in someone else’s shoes and communicating to them in this way socially relevant realities of other people’s lives that the player would not otherwise normally immerse himself in the real life. Consequently this also brings a potential for an empathy aspect that the game medium could make use of.

Lastly, the Game Design sub-area in the field is in general a good fit for this thesis project because it incorporates many of the typical Interaction Design process characteristics such as field research within the topic of interest, playtesting with potential users, high focus on the use of technology and the human interactions both on a micro level and system level. At the same time genres such as Serious and Critical games have proven that games can bring to the table much more than just entertainment. They are also important culture influencers and can be used as educational tools.

2. RESEARCH FOCUS AND THEORY
or WHAT IS THIS ABOUT REALLY

2.1. Research questions

This project will be exploring the broader research question of “How can critical games be used as a medium for addressing social issues of our modern society in a way that induces self reflection in the player?”. To distill the matter in more concrete terms and explore novel aspects of engaging with socially relevant games, the design work will seek to explore the following points of interest:

Sub-questions:
- What factors influence the level of reflection on real life induced to the players by a critical game?
- How does a mechanic of the player entering personal data from their real life in the game influence the experience in relation with the self-reflection rate and the impact of the game’s social message?
- How does empowering the player to change the game in order to provide space for self-expression affect the impact of the game’s critical content? Looking to explore in this way games as a tool for a two-way dialogue designer-user.
2.2. Critical game design

While Critical design (Dunne and Raby, 2001) has established itself as a framework within the Interaction design field for addressing societal critiques through predominantly industrial design means, it is Mary Flanagan's work in her seminal book Critical play (2009) that draws an elaborate picture of the ways games can “function as means for creative expression, as instruments for conceptual thinking, or as tools to help examine or work through social issues” (Flanagan, 2009). By walking the reader through the historical context of critical play embedded in popular culture, experimental media, and the world of art, Flanagan depicts a rich variety of forms of play that ask important questions about human life. Grace (2014) additionally offers a framing for analyzing critical games by mapping them according to how much the game is either social critique, i.e. towards the society outside of the game medium or mechanics critique, i.e. towards the game medium itself, as well as mapping them on the scale of continuous (via repeatedness) or discontinuous (relying on surprise moments) ways of conducting of the critique message in the gameplay.

2.3. Abusive game design

Abusive game design (Wilson & Sicart, 2010) is also a design “attitude” or “aesthetic practice” relevant for this project. It relates to games that are uncomfortable, unfair and painful to the player while making games more personal and establishing a dialogue between player and designer. With this thesis I’d like to explore this concept further by not only focusing on mechanics for making games even more personal but also making a small step towards exploring ways that could develop Wilson & Sicart (2010)’s pursue of starting a dialogue between player and designer with a focus on allowing the player to take active part in this dialogue and supporting a two-ways communication via the game’s allowances. In abusive design it seems to be mostly about the designer provoking the user while I want to explore giving the user agency to actively challenge back the design.

2.4. A few terms

Working within the game domain requires understanding of some basic games related terms and here I’ll briefly mention a few of them that feature in this text.

When it comes to games, we talk about play and game where play is a free activity and game is a form that has a defined structure. And here are some of the main characteristics of a game system:
Mechanics are the building blocks of the game, the core actions that the game supports and allows the player to take.

Dynamics refer to how those mechanics play out over time and in symbiosis with each other, how the way the player chooses to act with the mechanics affect the resulting experience.

Gameplay relates to Ludus that means ordered play. Gameplay refers to the whole experience within the game, within the magic circle, it is all the pieces of the game taken together. It refers to the time spent playing in the game’s world by its rules and that whole context itself.

3. METHODS
or THE TOOLS THAT MADE THIS HAPPEN

3.1. Design-based research

The work on this thesis will be driven by the Research through design methodology (Zimmerman, Forlizzi, & Evenson, 2007) as main aspects of the knowledge contribution construction will be the design of artifacts produced as part of an iterative design process and their empirical evaluation with the potential users. The research-through-design concept has been promoted as a fruitful methodological direction by the IxD community and I believe it serves well this project aiming to have a design process resulting in an artifact-like final output as part of the knowledge contribution.

3.2. Critical analyses

Doing a broad desk research of related work and in a holistic manner analyzing key themes and forms that span many of those works in search of the values and qualities they’ve explored in order to feed the development of my own design research work, was all falling under what Bardzell & Bardzell (2015) define as design criticism:

“Design criticism refers to rigorous interpretive interrogations of the complex relationships between (a) the design, including its material and perceptual qualities as well as its broader situatedness in visual languages and culture and (b) the user experience, including the meanings, behaviors, perceptions, affects, insights, and social sensibilities that arise in the context of interaction and its outcomes.”

3.3. Qualitative semi-structured interviews
In order to get as open feedback as possible but yet structured enough to address the points of interest of the investigation I ran semi-structured interviews during all touchpoints with participants. It worked the way semi-structured interviews typically work as described by Preece et al. (2017) in “Interaction Design: Beyond Human-Computer Interaction, 4th Edition” - “The interviewer starts with preplanned questions and then probes the interviewee to say more until no new relevant information is forthcoming.”

3.4. Modifying existing games

As Salen and Zimmerman (2010) point out in their book “Rules of Play”, modifying existing games can be used as a design exercise that is part of the game design process for stimulating the creation stage and serving as a good brainstorming point in the process. In my case the modification of existing games helped me narrow down the explored theme and identify concrete points of interest for further exploration.

3.5. Prototyping

In order to explore the identified design openings in more concrete terms I implemented a game prototype in an interactive fashion. Mapped by Houde & Hill (1997)’s model for prototypes’ purposes in their “What do Prototypes Prototype?” paper, my prototype was addressing the “implementation” and “role” corners of the triangle model and slightly touching upon “feel” in the “look & feel” direction. Where:

““Role” refers to questions about the function that an artifact serves in a user’s life—the way in which it is useful to them. “Look and feel” denotes questions about the concrete sensory experience of using an artifact (…). “Implementation” refers to questions about the techniques and components through which an artifact performs its function—the “nuts and bolts” of how it actually works.” (Houde & Hill, 1997)

3.6. Playtesting

When designing a game, playtesting is an important part of the design process as Fullerton et al. (2008) point out in their book “Game Design Workshop” where the method’s end goal is summarised as “gaining useful feedback from players to improve the overall experience of the game.”. I did use playtesting for evaluating my own game design and iterating on it but I also used playtesting additionally for gaining useful insights on how players perceive other similar games and how they react to the variety of stimuli those different games provided them with.
4. DESIGN PROCESS OVERVIEW
or WHAT HAPPENED FROM A BIRD'S VIEW

The general process I took is somewhat related to the double diamond process in the sense of consisting of continuous divergence and convergence and putting efforts in first researching and defining design problems that later get further explored via the development of a potential solution. Concretely, the several iterations of opening up and narrowing down (figure 1) happened like this:

Stage 1: Define scope
Starting theme: Mental well-being of the youth
Open up: Exploring Well-being related materials. I discovered the topic is very broad.
Narrow down: Choosing domain for the project to be critical games

Stage 2: Explore the domain
Open up: Explore the possibilities of critical games by trying out many of them personally and critically analysing them
Narrow down: Run a modifying games experiment to identify own interests of exploration within the domain. Choose 3 sample games that relate to the identified interests.
Newly arised theme: Self reflection and making it personal

Stage 3: Identify design openings
Open up: Playtest the 3 sample games followed by interviews, analyse results and identify design openings based on the findings.
Narrow down: Implement a prototype to address the design openings via a concrete artifact sample.
Additional theme arised: Self-expression

Stage 4: Validate the sample solution via playtesting
Open up: Playtest the implemented prototype and analyse results
Minor narrow down: Implement second version of the prototype to address findings and make it yet more personal.
Minor open up as a result: playtesting version 2 added another layer, namely:
Additional aspect to the theme: Empathy as means for self reflection

Stage 5: Reflect
Analyse results and summarise the research findings.

I had several different sketches of visualising the process and keeping track of it. Those rough hand sketches can be seen in the Appendix.

5. RELATED WORK AND POSITIONING
or LET'S PLAY

5.1. In the land of alternative games

Since striving to address social issues can be achieved through a variety of approaches, the implementation of socially relevant games can take different forms and have different agendas. There has been for example several movements relating to the theme of “games for social change”. These kind of games are often having educational or informative character due to striving to nurture awareness about different socially relevant subjects such as gender and race equality in different contexts, queer acceptance, climate changes prevention, etc. Usually providing information to inspire social activism these kind of “games for social change” tend to focus on knowledge building and inspiration for taking specific actions against a given problem, leaving in this way the feeling that they often target already activism interested people. Though often these games also focus on building empathy in their players for the people different from themselves who live in a very different reality. Examples of such games can be found e.g. on Games For Change (2018) or Tiltfactor (2018). Those games take different shapes when it comes to online or offline playing, paid or free games, length of the gameplay, complexity of the gameplay developed, etc.
5.2. Targeting who?

Most of these socially relevant games target the academics within Game Design and some independent indie game developers. And while I see the importance of starting a discussion within the given field’s academic community, I believe that games having the ambition to be ‘socially relevant’ should also have the ambition to distribute their work to those this concerns the most, the ordinary people. Because if the game is trying to make a socially relevant point, the more relevant the topic is, the wider audience this game should reach in order to fulfill its purpose of raising awareness about the given social issue in the society itself and not just to our fellow academics.

Thus, targeting the common people around the world, this thesis will pursue the exploration of socially relevant critical games that can be played:

- online,
- for free and
- for a fairly short time.

The reason for choosing these filtering criteria is reaching the largest possible audience for a critical piece to have a potential for a public impact in addition to the academic one.

5.3. Related work

Here are presented game examples matching these filtering criteria that serve to illustrate the landscape of games within this genre that relate to this thesis project. Via depicting the big picture of a given social matter in a playable format or letting the player experience someone else’s perspective these games aim to aid the players in getting a better understanding of the reality around us, of the people around us and gaining a more holistic image of how our society really works. In this section I’ll shortly describe the essence of the gameplay and the social message passed in a variety of such games while in section “6.1. Critical analyses of related work” I’ll describe more concretely the qualities of those games that relate to the pursuits of my research endeavours.

5.3.1 Interactive explainers of how society works

“Complex systems can be easily understood in games due to the systemic and dynamic nature of the medium” say Molleindustria (2003) in an introduction video about their radical games. Indeed games provide a good framework for presenting
complex high level society’s aspects to the masses as people are used to and even seek engaging in the complex systems the Game Industry provides them.

Using this inherent advantage of the game medium to effectively depict whole systems, some of the online socially relevant games focus on the big picture, conveying a message reflecting society’s structure and aiming to mostly explain the forces that shape and define our society as a whole.

Great example of this is the work of Nicky Case (2014, 2017) on games as interactive explainers with prominent examples such as “The Evolution of Trust” (figure 2) and “Parable of the polygons” (about systemic bias and diversity). He successfully uses game design to first engage the player in the medium and then through the interactions thoroughly explain to the user how the gameplay mechanics they just played with relate to the big picture of the shaping of our society. The gameplay of those games consists of 1. explore how the interactions themselves work; 2. explanation mode of how the interactions map to the society’s reality and what that really means on a big picture scale 3. play with the parameters of the simulation to deepen your understanding of the social structure behind the given social topic (figure 1) and lastly 4. how what you as an individual can do to affect the big picture.

Figure 2. “Evolution of trust” by Nicky Case (2017)
In both of these games the game’s end message focuses on how changing the player’s individual behavior can relate to nudging the trends in the development of our society in what is communicated as a more desirable direction. The predominantly explaining aspect of Case’s games is also manifested by the fact that the “Parable of the polygons” is in the format of an interactive article due to being significantly text driven.

“The Free Culture Game” by Pedercini (2008) is another example that lets the player experience a social phenomenon from a big picture perspective. In this case it is the abstracted landscape of turning the otherwise ideas-full people into passive consumers. Here the player is given the goal to protect the free knowledge and “liberate” those taken by the passive consumerism communicating in this way the designer’s stand pro the liberation from the paid market and consumerism. More about this game is present in section “6.3. Empirical evaluation of similar work”.

Another such critical game example is “To build a better mousetrap” (figure 3) by Pedercini (2014) where the player is put in the role of managing a research company and is faced with the challenge of balancing company finances when it comes to automation optimisation and hiring staff affordances. The game depicts via its unwinnable conditions how the benefits of automation vs the expenses of employers’ hiring is a quite problematic realm where however you approach it, the interests of “the common mice” can’t be fully satisfied if you want to avoid bankruptcy. The game paints in this way the designer’s grim view on this social phenomenon.

Figure 3. “To build a better mousetrap” by Pedercini (2014)
5.3.2 Interactive stories of concrete individuals and empathy

A game’s playful characteristics allow people to engage in an alternative reality, the so called “magic circle” (Stenros, 2012) as mentioned earlier. Through playing by its corresponding alternative rules the player gets to experience something out of their usual everyday. While this is commonly used within the Game Industry for entertainment purposes and relaxing by ‘escaping reality’, such immersion in an alternative reality can also serve as a platform for nurturing empathy between individuals positioned differently within our social structures who would otherwise not be very likely to engage with one another and get to know one another’s alternative worlds.

Using this empathy potential of the game medium, other of these type of games choose to focus on the “small picture” of the story of a specific person as an alternative, more personalized approach of communicating to the player an otherwise broad social issue. Working with the notion that it’s easier for people to connect with another person instead of an objectified abstraction of society as the interactive explainers do, these games place their focus instead on storytelling. And in order to evoke a strong empathy affect, their gameplay usually incorporates feelings of anxiety or discomfort. How interactive stories work is roughly depicted by Nicky Case (2015) at a TED talk (figure 4), showing how the choices the users make define how the story unfolds and how references to choices made earlier in the game affect positively the experience.

Figure 4. Interactive story schemata by Nicky Case (2015) at a TED talk
“The coming out simulator” (figure 5) by Case (2014) is an interactive story example that places the player in the shoes of an Asian-American teen facing the challenge to communicate to his stern parents his bisexuality. The tension in the game is high as the player’s choices define a very dramatic unfolding of the story. The game communicates in this way the challenging reality of unacceptance that bisexuals happen to face in certain areas of their lives. The game easily relates to real life as it is based on the game author’s personal experiences. And even if one is far from the bisexual reality, the theme of uncomfortable conversations with parents is something most people can personally relate to.

![Figure 5. “The coming out simulator” by Nicky Case (2014)](image)

“Unmanned” (2012) (figure 6) is another interactive story that follows a day in the life of a drone pilot as a critique to the growing detachment in our societies. The game communicates the contrast between the ordinary personal life of a drone pilot and the bigger scale importance of his job. Making the player experience in the game how using drones for warfare feels like the video games the drone pilot plays with his son in his free time, makes the player, who has most likely played shooting video games himself, personally resonate with the problematic ethics of unmanned weapons. The game communicates the author’s ethical stand on the moral questions presented by the medal award incentives the player can get depending on the choices they make in the story.
“Spent” (2011) is another example of a text based game about surviving poverty and homelessness in the US. As the player is facing the heartbreaking choices one needs to make when managing a too tight budget, the game informs him/her about the real life facts that stand behind those tough choices. The game is developed in support for organizations helping the poor. Since this aspect of including real life facts in the gameplay is very related to this thesis project, more details about this game are presented in section “6.3. Empirical evaluation of similar work”.

5.3.3 Provoking games

Others of these online critical games choose to neither depict social constructs in society and make a statement through explaining, nor tell a human story and make a statement through empathy, but instead focus on challenging the player's view on
popular culture topics. Featuring vivid, extreme messages those games aim to prove a reaction, to throw you out of your usual thinking, out of your comfort zone, to challenge your worldview by putting you in a morally uncomfortable situation. These games usually “mess up” with ethics and challenge the moral norms.

Pedercini’s “Phone Story” (figure 7) and “McDonalds’ videogame” (figure 8) are both critique to mass production (of phones, fast food services) and awareness raising about the dark reality behind it. The two games though use different ways of engaging with the player - “Phone Story” incorporated a series of small interactive play snippets informing the player of the real-life facts that they are based on while “McDonalds' videogame” forces the player to do the unethical things mass production businesses do in real life by placing the player in the position of simultaneously managing the different assets of running the McDonald's business without bankrupting the company.
Other provoking games challenge the different social movements in our societies, e.g. the popularization of intersexual relations, the “Queer Power” game, or the violence in the name of religion, the “Faith Fighter” game (figure 9). Both of those games have a simple gameplay and focus instead on the provoking aspects of the game content itself. “Faith Fighter” even had to make a separate censored version of their game because of its controversial content.
To roughly sum up: all these games have a rather simple structure and use of technology, they all have very short playtime and are open for the public to play online as well as offline. All of them are also politically and/or socially relevant and call for open-mindedness and awareness.

6. THE DESIGN WORK
or WHAT HAPPENED FROM AN INSECT'S VIEW, I.E. ALL THE DETAILS

6.1. Ideation experiment ‘modify existing games’

I started this thesis project with the very broad theme of addressing ‘mental well being’ that I thought of exploring in the context of troubled young people. Narrowing it down by choosing a critical game as the medium for the project faced me with a vast new landscape of its own, narrower but still broad. As I was exploring the variety of opportunities within the chosen medium I realised that I need to narrow down even further by exploring my own personal interests within the chosen domain of addressing social issues via interaction design, via a game.

Consequently as a pilot experiment to feed the framing and give extra direction, I ran a sort of brainstorming session in the sense of a session for generating uncensored ideas for inspiration and as a driver of further development. It consisted of taking several games that I am very familiar with and modifying them so that they become critical or abusive games, i.e. games for reflection.

Modifying games like chess, domino, the card games Gloom and Magic, a video game Shelter and the board game Settlers of Catan in a form that would arise reflection for the players, it turned out that leading theme in my modifications was the theme of self management. Namely, aiming for reflections about how one is managing the battle of priorities in one’s life, like family time, me time, social life, professional life, etc., looking for how to have a balanced life lived by the awareness of our own individual needs and balancing them with what is expected of us. Through my modifications was sensible a critique to the modern social tendency of turning into ‘human Doings’, i.e. high levels of productivity and activism expected of us on a daily basis, ‘do more, do more’ as mantra vs being ‘human Beings’ that take it easy and don’t worry so much, that are present here and now, having ‘just be’ as mantra instead. It relates to the social issues of more and more people getting ‘burned out’ or feeling mentally not so good (especially concerning for the young people). Matching my initial interest of exploring mental well being as well as personally connecting to it, this critique made it to implementation later on in my critical game prototype.
Additionally, a prominent mechanic that occurred in half of my modifications was the one of **incorporating personal input from the player in the game** and in this way making the play very personal, thus raising reflections in a direct personal context. This felt like an area that would be interesting to explore further as I didn’t find many games, especially not video or critical games, that incorporate the player entering personal data and thus making the critique more personal. Seeing it as an opportunity for having a novel potential, I explored that mechanic in practice later on via the same game prototype of my own.

### 6.2. Critical analyses of related work

As might already be sensible from the lengthy ‘Related work’ section, I started my journey of exploring existing critical games’ qualities and their relation to reflections about real life via a dive in the broad sea of online critical games. I narrowed down my desk research to those of the digital critical games that are playable online, for free and for a short time as explained earlier in the section “5. Related work and positioning” where a number of examples of such games are depicted. Playing and critically analysing those games I was looking at how they try to engage with the player and what kind of social messages they are trying to pass on. Hence, the games listed in “5. Related work and positioning” are grouped based on what I felt were the main different ways to communicate a socially relevant message via an online game or what I saw as the **main different kinds of gameplay** within this context:

- “5.3.1 Interactive explainers of how society works”
- “5.3.2 Interactive stories of concrete individuals and empathy”
- “5.3.3 Provoking games”

My research framing at this point was about exploring “qualities of critical games that evoke reflection about real life on socially significant topics”. The grouping above was based on the analysis of the latter part of the research question, namely how do critical games depict socially significant topics. But it is the other aspect of the research question, namely the ‘evoking reflection about real life’ aspect, that critical games are more questioned about due to the magic circle concept (Stenros, 2012) as pointed out in the “Why a game?” section as the disadvantageous aspect of the game medium. Choosing due to that main concern to focus my research explorations on that challenging aspect of the critical games medium, I’ve used the following, reflection focused, categorization of those games to guide my further design work:
1. Games seeking social reflection on a higher abstraction level

Matching the “5.3.1 Interactive explainers of how society works” category, here are those critical games that take on the task to educate the player of how our society works and gets shaped, explaining it from a big scale perspective through abstracted representations of social structures.

Some, as Nicky Case’s related work, use a methodological approach of mapping an individual's behavior to the broader society scale and thus explaining how the big picture functions in a mathematically structured clear way. In this way he achieves a successful approach in explaining rather complex social phenomenons in a way that nurtures sociology related understanding in the players. In contrast with Case’s text rich and explanatory to the details way of communicating social concerns, others, like Pedercini’s related work, use a more direct approach of placing the player in a setting that is ruled by rules that relate to the reality of our modern societies and leaves the conclusions to be made by the players themselves mostly via the gameplay experience itself. Even though often in the end of those kind of more direct games there’s still a clear message, this leaves a bit more room for reflection on the side of the player. The focus in this case moves a bit away from the strictly explanatory purposes of the experience and prioritizes arising emotions related to the issue communicated on an equal basis with the explanatory visualisations of the designer’s views on the matter.

No matter the approach though the main purpose of these kind of games is to nurture understanding about otherwise potentially complex or inconspicuous social phenomenons or hypothesis related to the big scale picture of society’s development.

2. Games seeking reflection on a concrete individual’s level - through the I and empathy

Corresponding to the “5.3.2 Interactive stories of concrete individuals and empathy”, the games in this category work with a lower level of abstraction, with first person story experiences that are closer to our everyday life and are thus easier to personally relate to than abstracted representations of whole systems. These games focus on the human aspect in the sense of using representations of a concrete human being and letting the player experience a given social situation through the “I” of the depicted character. The first person format is used in these games with the goal to arise reflection by making the players associate themselves personally with the character they are playing as and thus mostly using empathy to another human being as a means of conveying the social message. But placing the player in this first person role is also a gamble for the player making a self reflection if it so happens that the topic covered relates to the player’s own life.
3. Games seeking reflection via incorporating real life facts

This reflection focused category of its own doesn't relate directly to the previous groupings as it is about the mechanic of incorporating real life facts in the gameplay in order to aid the player to think outside of the magic circle and thus more successfully relate to the real life outside of the game played. This mechanic has been used across different games in all the other categories but when it comes to reflection focused grouping, it deserves a group of its own due to exploring the notion that real life references affect positively the reflection level in the player. Some examples are Pedercini’s “Phone Story” and “McDonalds’ videogame” described in “5.3.3 Provoking games”, but also the game “Spent” (2011) from section “5.3.2 Interactive stories of concrete individuals and empathy”.

This game mechanic also relates to the one identified as my own interest in “6.1. Ideation experiment ‘modify existing games’”, namely the incorporating personal input from the player in the game. While this category of existing games works with actual objective facts taken from the real life, the mechanic I wanted to explore myself was not only building upon that by taking personal facts about the player himself, but also had the potential to take the player’s personal opinion, feelings and stand on given topics and work with that as part of making the critique message and the player’s reflection level to real life more effective.

6.3. Empirical evaluation of similar work - playtesting and interviews

The critical analyses of related work gave me a good idea of how those games tend to be structured and how they approach conveying their social messages to the player. Identifying the success at making the player reflect on real life through the game as the main challenging point for these online critical games, I decided to do a small field research and see first hand how people react to those games and what factors affect the sought out real life reflection - what makes it happen and what stops the user from relating the game to real life.

The format for this user research effort consisted of choosing 3 free online games, each of which took around 10 min to play, asking the participants to play them by themselves and then arranging a short interview to discuss their impressions of the game. The discussion was open ended, a semi-structured interview approach, as my goal was to find out how a given critical game affects the player by itself, what about it leaves a strong impression on the player, how are the different approaches to the game design affecting the feelings that end up being raised in the player from each
game. As part of that open discussion of how they felt and what they thought, I asked additional questions about whether or not the game managed to make them reflect on the real life, on their own life and if so, what triggered that.

In order to get an as full picture as possible from the results, I chose the tested 3 games to each represent one of the categories described in “6.2. Critical analyses of related work”. In this way I wanted to compare the results of the different approaches used for such games and based on that identify more concrete points of interest from which to approach the further development of my own design work. Why each game was chosen and what were the results of playtesting it is summarised in the next subsections. Details on how each participant reacted to each game is on the other hand provided in the Appendix in a summarized format, grouped by game where the trends across all answers can be tracked. Transcripts of the full interviews can also be found via a link in the Appendix.

The participants who tested the games were chosen to 50/50 represent the academic audience and the popular audience due to the concern expressed in section “5.2. Targeting who?”. Namely, that these games usually reach the academic circles while they also need to reach the ordinary people given that it is a socially relevant messages they are trying to raise awareness to. The participants were also 50/50 distributed when it comes to experience within the game medium - from mainstream gamers and indie games’ players to people only occasionally playing a phone or board game to a not very game experienced person. The profiles of the 6 participants (and partially a 7th) who took part in the playtesting are also described in the Appendix.
The Free Culture Game by Pedercini (2008)

This game is described by its author as “a playable theory about the struggle between free culture and copyright” and is an abstract representation of a social hypothesis that consumerism is a result of the ‘vectorial class’ stealing the ideas of the common free culture people, commodifying them and using them to feed a passive consumerism culture.

The Free Culture Game was chosen to represent the critical games depicting a social issue from a big picture perspective that require system thinking, work with higher level abstractions and seek reflection on level society. My main interests were:
- finding out how well the social critique message and the author's sociology hypothesis are received, with the concern in mind of whether they are not too abstract?
- how the challenging play mechanics affect the overall impact of the game

Results

Gameplay
All participants, except one, had trouble understanding how to play the game, most of whom also had some troubles with the challenging mechanics themselves (which lead to one case of abandonment of the game).

It was interesting though that when it comes to the actual way you play, i.e. the dynamics of the game, some people had completely opposing perceptions of it - from unstressing and relaxing to a stressful and frustrating experience.

**Message conveying (via an abstracted high level picture)**

Most participants found the topic interesting and relevant but the gameplay and the message passed were perceived by the majority as two separate entities, quite detached from each other. And many associated this with what they called “poor execution” of the game (which though also relates to certain extend to the problems they had of understanding how to play).

What is more, since the message was depicting what was seen as quite an extreme view (liberation from the paid market goal), many of the players disagreed with it giving a variety of arguments pro the paid market.
**SPENT** by McKinney agency (2011) - campaign like

“SPENT” was chosen to represent the games that seek to convey a social message via arising in the player empathy to someone else different than themselves. The game is text based and the narration follows the hard, often heartbreaking decisions that a person on a tight budget is often forced to make. Seeking to raise awareness about the real problems poor people have, SPENT uses statistical facts from the real life of those people to strengthen the power of the message conveyed and the feelings provoked in the person playing it. The game seeks to maintain a feeling of anxiety in the player by providing them with a great challenge in their quest of money management in the given conditions. Also since the game has been developed as a campaign for raising money for the unprivileged in the USA, the player is offered the opportunity to donate in the end of the gameplay.

So my main interests in the SPENT game were:
- the use of real life facts and how that affects the power of the message conveyed
- the empathy aspect, the seeking of reflection to real life problems of other people by placing the player in the shoes of a real someone else
- the stressful game mechanics and the unfairness of the game

**Results**

**Gameplay**

Everyone appreciated the informative aspect of the game. It was successful at raising awareness via the real life facts communicated to the players (besides the “I already knew that” result for the American participant). It was also the game out of the three that raised the strongest emotional reactions in the participants.

Regarding the moral choices presented, it was prominent that people are sensitive to family related moral dilemmas - e.g. the moment a child is involved. And when moral choices are included, they are at first approached as people would in real life. Then after a round of that, the game lovers would try “what if” scenarios to explore the game possibilities and the potential different narrations.

The explorative aspect of the narration was actually appreciated and found intriguing by most participants due to the curiosity of ‘what will happen based on my choices’. On the other hand though, many participants felt a hurt feeling of agency due to the game making it impossible for them to succeed regardless of
their choices and presenting them with factors the players couldn’t affect themselves and didn’t know were in the picture in the first place.

The feelings of anxiety and unfairness while playing the game were common amongst all participants. And though both relate directly to the message conveyed, the participants with gaming experience protested against the lack of paybacks, feeling the game dynamics are unbalanced and illogical. So in SPENT the informative message conveyed was the predominant aspect of this donation focused game and the actual playing, the gaming qualities of it, were of much more secondary nature.

**Message conveying** (through empathy inducing)

Even though all players felt compassionate during gameplay for “the person” they played as and how hard it is for them, the main reflection in SPENT turned out to be one on a system level, about the social reality in America, due to the significantly strong unfairness feeling all participants felt which they associated with a problem in the American system as a whole. Conveying a high level reflection about society through the individual human’s perspective seems to be a successful approach in making a system reflection via arising strong individual empathy.

In this game, though, personal self reflection wasn’t raised as the reality depicted is of a very specific group in society - the low income families in America. And though some participants come from a low income family in other countries, they didn’t personally relate because the game was focused on the specific reality in America and the participants could only do a comparison to the systems in their own countries. The two of them who’ve lived in America on the other hand, were not in a low income position so the feeling of “the other, different than myself person” was present amongst all participants. Which was in its essence the point of this donation based campaign, but it is also a useful reflection for my own interest in explorations of personal reflections.

Another note when it comes to relation to the real self is the throw out of the magic circle SPENT achieves via sending you to share on your facebook wall when you thought you were doing something in the game context. Forcing you in this way to connect with your real life personality, this made a strong impression on one participant (a gamer one).
Every day the same dream by Pedercini (2008)

“Every day the same dream” is another interactive story from first person perspective but unlike the text based, information rich SPENT, here the narration happens through visual explorations with only a very few words present in the storyline. The social message here is communicated via the pace of the gameplay itself and its intentional dullness. Serving as a critique to the repetitive, mindless and lifeless corporate life, “Every day the same dream”, as the title stresses, is a call for a break out of the routine, of the machine-like, meaningless life that many of us fall in the trap of having. I chose it as my third sample due to the social problem being communicated here being such a widely spread one that the game is likely to be arising self reflection in the players themselves.

So my main points of interest in this game were:
- does it cause self reflection?
- how are the slow and repetitive interactions affecting the effectiveness of the message conveyed, referring to the according dullness in our routined lives
Results:

Gameplay

Here the explorative narrative nature of the game was also appreciated by the participants who really enjoyed every time “something changed” in the otherwise monotonous narration. The limited interactions, though, with what is possible to change, lead to dominant feeling of frustration that all participants felt trying to figure out the last things to change. At that point many participants wished to have a hint what to do and the lack of hints or explanation how to play lead to some participants giving up early and one even not being able to play at all.

The repetitive, slow pace of the game and the limited agency when it comes to possible interactions were annoying in one way or another all the participants but both aspects were actually in direct relation to the message conveyed. So the fact that the participants felt frustration in those regards was probably the goal of the design of this game. But on the other hand, the frustration with the gameplay the participants described seemed to not so strongly connect to the way they end up perceiving the overall message of the game.

Message conveying (through annoying interactions and aiming the self)

Out of the five participants who successfully played this game, two made a strong relation to their own lives due to feeling like they are themselves living the depicted issue of repetitive monotonous life in reality. Out of the rest:
- one was an academic and didn’t personally relate to the problem but was left instead with a reflection of it on a general society level
- one didn’t relate to real life at all and was instead overtaken by the frustration with the game mechanics and
- one related to real life but felt like the message was unoriginal due to having already been exposed to it via a variety of other types of art.

With regards to the self reflection, a participant commented that what contributed to that was also the fact that unlike ‘SPENT’ where the game was telling you “now you are very stressed”, ‘Every day the same dream’ was leaving it open for the player himself to feel their own original feelings stimulated by the game.
6.4. Analyzing ethnography results

The most dominant topic that had a prominent role in all the discussions of those games was the one about the balance between the message conveyed and the gameplay itself. It is also the reason why the summarized results from each game are grouped in that manner (“Gameplay” and “Message conveying”). This balance turned out to be a key factor in defining the level of success of the game in effectively communicating its message in an impactful way for the players. “The Free Culture Game” was the most unbalanced game in this aspect, almost all participants specifically identifying how the message and the gameplay felt completely detached from each other and vocally expressing it. And as a result it was the game that performed the worst when it comes to leaving an impression on the players. On the other hand, even if there is some synergy going on between the two, if one prevails too much over the other, “the magic” still gets lost to a certain extend. For example ‘SPENT’ putting a great focus on information and message conveying made the game familiar people vocally protest against the undeveloped gameplay. And at the same time ‘Every day the same dream’ where the message is wholly communicated via the annoying gameplay itself, “the magic” of the two being merged happens as long as the player figured out how to actually play.

Which relates to the other important aspect to be considered in these games, namely managing to communicate well to the user how to play, what are “the rules of the game”, the basics of how it works so the player actually has a chance to experience what this game has to say. Not understanding how exactly to interact with the game, how to play on mechanical level, often leads to abandonment and lost of interest in the game as it was shown by it being a reappearing issue in Pedercini’s games. What is more, having a clear goal in the gameplay showed itself to be a motivating aspect for the players to engage further with the game. Having set a certain kind of expectation of the user, the way ‘SPENT’ and ‘Every day the same dream’ has done, was appreciated by the participant.

The feeling of having agency in what's happening was the aspect that sensibly impacted the way the games were perceived. The more the players felt they impact the results of the game, the greater impression it left on them. And while there is a merit with challenging that in order to make a point, such as the unfair gameplay of ‘SPENt’ or the slow and hard to change repetitiveness of ‘Every day the same dream’, this needs to be done with measure and not overtake the agency of the player too much because then it has instead a negative impact on both the game experience and the message conveying.

But if it’s done in a way to have a meaning and and in a limited manner, using annoying or unfair interactions showed to arise strong reactions in the players that
when sensibly connected to the message conveyed enhance it and make it more impactful. There is, though, a very thin thread separating the annoying interactions naturally conveying the issue in the game’s social message from them being too annoying and raising in the player instead such a strong mechanics frustration that it ends up detaching the gameplay from the message.

Additionally, one more noteworthy aspect that all participants appreciated was the **explorative nature** of some of the games, namely the joy of making new discoveries and something in the game changing as a result both of their actions and the ongoing narration. Implementing **storytelling** qualities proved to have a high rate in successfully engaging the players in the game. And making the narration **close to the individual human** not only provides potential arena for self reflection but also showed to be an effective way to communicate messages on level society as well.

The described so far gameplay qualities affect in one way or another the success of those online critical games so I kept them all in mind when designing my own critical game prototype. But the main take outs of the field research that lead to **concrete design openings** that I then tried to incorporate in my own prototype are as follows.

So the main question that I had in mind during the interviews was “What defines if a critical game will succeed in making the player reflect about real life and the issue communicated outside of the game’s context?” As a result of the ethnographic exploration I came to the conclusion that this success depends on the chance of whether or not the player personally experiences the social issue of the game or the chance of whether or not the player has a personal interest in the given topic that the game is raising awareness to.

This confirmed that the identified earlier mechanic as my own interest to explore, i.e. making the game more personal by incorporating info from the payer’s real life, matches the main problem, and thus a design opening, that came out of the ethnographic study, namely the dependence on chance of whether the real life association in the game would match the player’s own experiences and preferences.

The other dominant and intriguing issue that came out of the investigation was the problem with the players questioning or disagreeing with the message that the game was conveying and thus the game having a lower impact. I saw in this a design opening for letting the players change the game and hence the message conveyed. I also saw in this a potential of exploring a novel way for starting a two-way dialogue between the player and the designer where the player would also have the power to express what they think about the issue communicated via the game. This opening was also supported by the players’ apparent preference of
feeling like they have agency in the game and what stronger agency than letting them define how the game should work?

6.5. Prototyping

In order to explore these two openings in practice I developed via GameMaker studio a low fidelity digital prototype that I then tested with 7 people. The prototype was supposed to be very small and followed up by another one but having the goal to not only incorporate personal data in the game mechanics but also let the player change how the mechanics work, required a more fully functional prototype with multilayered logic. And since that resulted in a bigger time and energy investment I worked instead with small iterations of one prototype. It was positioned in the “Implementation” and "Role" end of Houde & Hill (1997)’s prototype’s triangle model, further away from the “Look and feel”, though a bit touching upon “feel” via raising the feelings of anxiety.

6.5.1. The game’s concept

As explained in section “6.1. Ideation experiment ‘modify existing games’”, I wanted to work with the social issue of people turning into ‘human doings’, striving to and being expected to maintain constant productivity flow. I tried to incorporate such a message in my game, calling for a more balanced approach between workload and enjoyable breaks and moments in life.

The mechanics of the game, though limited by my coding skills, aimed to match the feeling of the non-stop productivity social trend, namely to cause anxiety for getting more and more done and not missing out on any productive opportunity to the point of feeling bad about not working during your off time.

The basic mechanical elements of the game to support this vision consisted of:
The gameplay was very simple: the player is a stick figure running left and right to “catch” the falling “tasks”, marked by green check marks, while amongst them there are also different kinds of “breaks” falling down too (e.g. drinking coffee, smelling a flower, petting a dog). If the stick figure catches a check mark the player gains a point and loses “life” on the mentality bar, that also gets reflected on the avatar’s face under certain thresholds. If it catches a break, the stick figure gets frozen in a happy looking image, and while the player gains “life” on the mentality bar during the break, they are not able to move the character during the break time, while check marks continue falling meanwhile. This was taking away a bit from the player’s agency and was using the annoying interactions as a means for conveying the message, namely - yes, let those tasks go, you can’t catch them all so it’s pointless to feel anxious about it during your off time.

So how did I incorporated the two main design openings from the previous section? Namely ‘incorporating personal input from the player in the gameplay’ and ‘letting them change the game’.
To achieve this, I took some basic mechanics of how the game works, turned them into editable parameters and assigned to them the meaning of the message as follows:

- number of tasks falling = how intense the work is
- length of one round, one “day” = hours worked per day
- catching breaks stopping or not the rain of tasks during the time of the break = are breaks enjoyed “full in” or do they feel “stolen”

How did that play out in the game itself?

6.5.2. The gameplay’s flow

The game, following the short and online format identified earlier, incorporated Nicky Case’s interactive explainers approach of first letting the player explore and play with how the mechanics of the game work and only then gradually introducing meaning on those mechanics. So the game starts with several rounds of exploring first the mechanics and then the message of the game, the message as it is according to the game’s designer, me.

The game has a “one day” rhythm to mark the different rounds. Between those day rounds the character “sleeps” which means that his mentality bar is getting very slowly charged. During that waiting time a dialogue text from the game is shown to the player that informs them about their goal and next steps. These dialogue screens followed a casual tone of voice since they were also used for maintaining the designer-player conversation. This is where the game was expressing critique to the player and a calling for a balanced productivity-off time rhythm in the first part of the gameplay and where the game was getting personal info from the player and asking them for their opinion on how it should actually be in the second part of the game.

The gameplay sequence of events had the following structure

Part 1 - explore mechanics and game’s message

Round 1 (play):
Start with a round of open exploration of the mechanics as they are (figure 10)
Round 1 (text)
Lure the player to avoid the “breaks” in the next round by stimulating them to focus on productivity and making them compete (figure 11)
  - Extra: using comparison for competition stimuli the game says “I know it’s not your best, even absent-minded Raya scored x+3”. This was a small extra aspect of personalisation via real life reference since all the test participants knew me
Round 2 (text)
Consists of 3 parts (figure 12):
- Validation “good job” plus second compete challenge “boss wants you to do even better”.
- Introduction of the other metric - the mentality meter and the game warns the player “don’t forget to give yourself some breaks” cause you looked “tired”
- Adding of a waiting interaction for sleep recharge of the mentality - small extra interaction annoyance as price for the over productivity
Round 3 (text)
After challenging you to compete, the game criticizes you for not having mercy on the stick figure (according to the game’s criteria), calling for a more balanced approach. Then the player has the goal to play in a way that they think is “a good approach to life” (figure 13).
Round 4 (text)
After a free round (or several) for the player's expression of how they think the balance should look like the game asks for a reflection (figure 14). Since I was interviewing the participants as they play, this was a moment for discussion on their thoughts.

Part 2 - Self reflection: How does it look for you personally?

The second part of the game was where the player’s personal input from their real life was taken into consideration. It starts with the game asking the player personal questions (figure 15) to cover the three metrics described in section “6.5.1. The game’s concept”. In addition, after testing with 2 participants, a second iteration of the game included a question for the player’s name for stronger personal association with the character and improved chances for self reflection.
After the questions, the player is informed that now they will play “their own workday”. This round of the game was basing the 3 main metrics defined earlier on the answers of the player which was reflected on the mechanics. For example, if the player answered that they are “full in” during their off time and don’t think of work, that was reflected in the gameplay by the fact that when the stick figure is in a “break” there are no check marks raining during that break, avoiding in this way the feeling of anxiety that missing those check marks otherwise creates. This round based on the player’s personal information was aiming for having better chances at raising in the player self reflection.

For iteration 2 of the game, there was a screen intro for this round as in figure 16.
In order to explore what could influence the player to associate themselves personally with the character they play as, apart from later adding the player’s name in iteration 2 of the prototype, I did an A/B testing from the beginning on half of the participants by using a picture of their face as the avatar’s face, i.e. the stick figure’s face (figure 17). I asked in advance for their permission and used typical social media profile pics with the idea that in real life context the game could take such an image from the player’s social media profile (e.g. via fb log in).
The round ends with another open discussion on how this personal round felt before continuing to the next section (figure 18).
Part 3 - Self expression: How do you think it should be?

After that comes a similar third part of the game that gives the player the power to change the message by asking them how they think it SHOULD be and letting them ‘play this out’ too. This part aimed at allowing the player to express their own opinion and strike up a two way dialogue with the designer.

Playing out the desired parameters entered by the player via the “Average Joe’s day” was an attempt to explore:
- does it induce stronger self reflection via comparison?
- does reflection on level society accur too?

In the second iteration of the game, there was an additional element in this third part of the game, namely the empathy aspect. Adding asking the player of their own name in part 2 of the game required a similar question in part 3 along the “how do you think it SHOULD be” questions due to the implementation structure of the game. So I decided to add there another level of making it even more personal by the game asking the player to name a person “dearest to your heart” (Figure 19). This was followed by another story-like screen introducing the workday of the named person (Figure 20). This also aimed at exploring how a comparison to another real person in your life, that is special to the player, can influence the strength of the self reflection.

Figure 19
6.6. Playtesting and analysing results

So I tested the prototype with 7 participants, roughly half of whom took part in the ethnographic study in section 6.3. and half didn’t. The first two participants tested the first iteration of the game that didn’t have the story-like screens with the player’s own name, nor the empathy aspect with the dearest person, while the other 5 had those aspects in the second iteration of the game. Also 3 of the participants were exposed to an avatar with their own picture on it for the purpose of the A/B test of whether or not that influenced the self association with the character - an issue that was identified when I was testing an early implementation of the game with my supervisor. Additionally, there were also many small mechanical iterations between the test sessions, such as show mentality bar from round 1 instead of 3 or add more friction when player is low on mentality and etc. Full transcripts of the test sessions can be found via a link in the Appendix, along with some notes from analyzing the results.

The main aspects of the playtesting results are grouped below according to the main questions I wanted to explore via the prototype.
What aids people in making a reflection about real life from playing a game? (in general)

The more real life factors the gameplay reflects, the better. Many participants (4 out of 7) pointed out the way the gameplay differs from reality as something that affects the real life reflection. Some of their examples were:
- having a break should be an intentional act and not something that happens accidentally (as it can happen in the game). Suggestions were given on separating unintentional distractions from intentional breaks
- Distraction levels differing depending on what part of the day it is, e.g. more distracted before lunch and right before leaving work
- Breaks to be more personalised and to have more quality time between work and sleep

Asking moral questions was also something mentioned by two (gamers) participants on the side as a game mechanic that is likely to cause reflection about real life in general.

And How does incorporating personal info influence the self reflection? (specifically)

As already identified from the ethnographic study, in the prototype playtesting it also got confirmed that the strength of the self reflection has a direct connection to whether the player personally experiences the problem being communicated by the game or not. If the game hits an issue the player themselves already have then self reflection occurs. Half of the participants had some personal issue on the topic of workload - breaks balance and correspondingly they were the ones making self reflections from playing the game. Entering personal information proved to make that self association stronger and to guarantee that the connection to real life happens.

It was interesting that for those participants who personally didn't have an issue with the social problem communicated, entering personal information played a role in making them reflect instead on the other person important to them personally that the game asked them about. So in these cases the empathy to real people in the player’s real life was where the main real life reflection happened from playing the game. This is where the player thought of something they didn’t think of before besides being all clear on the topic with themselves otherwise. This was a reflection on a bit bigger scale than just the self, but it still related to the self due to the comparison made by the game between the attitude of the player to themselves personally and to those they love when both are in the same setting.
The first two participants though were not exposed to that empathy aspect due to testing the first iteration of the game. They were also the ones to point out that reflection to real life could be stronger if it makes some difference in their real lives. E.g. if the results of the game could be communicated to their boss and some change happens at work. Or if the game would have a format that helps the player keep track of his work-leisure balance in their real life.

And lastly, even more specifically: What influences self association with the character in order to support stronger self reflection?

The A/B test ran with half of the participants having their own photo on the avatar showed that a photo doesn’t make any difference when it comes to the rate of the player self associating with the game character or not.

But on the other hand, adding the player’s own name that was then more officially introduced via story-like screens announcing “This is how the day of NAME looks like” showed to directly influence positively the player’s association with the character. After that screen with the name introduction all participants thought of their own work day while playing the introduced round.

On the other end of the exploration, the focus of the third part of the game: How did the space for self expression affect the experience?

The part of the game where the player was invited to enter “how they think this SHOULD really be” turned out to mostly play a comparison role in support for the participants’ self reflection. For the players that have an issue with the discussed topic that was the role of a perfect case scenario that makes visible how the player themselves differ from “the ideal” personally. For the players who didn't experience the issue communicated themselves but were instead very clear on where they stand about it, this round was just a benchmark of how the other people do it and didn’t have a significant role when it concerned the Average Joe, while it did have a significant role when it concerned the round for their dearest person as described above with the empathy aspect.

The differences in the mechanics that were present in the last rounds were though not vivid enough for the players to make a direct relation to how exactly they changed the game. They all felt though that the game changed in some way, mostly in the feeling of the way they play the last rounds. They all had their own theories on what exactly changed how but what mattered to me is that at least they did feel they make a difference. The problem was rather that due to the fact of them not understanding exactly what they are changing, their agency turned out to be not as much in control of the game as I wanted to give them.
7. REFLECTIONS
or WHAT WORKED AND WHAT DIDN'T

Here follows a short critical reflection on stronger and weaker sides of the design work in a summarized format.

Some weaker aspects of the work:

- As mentioned earlier, due to time and implementation limitations I only managed to explore one potential incorporation of the sought out critical game qualities. I could have prioritised instead having several less developed prototypes of different concepts but I felt that the exploration of those qualities require an attempt to really incorporate the players' personal info and really give them “the power to change” the game. Doing so requires a certain depth of the implementation solution and unfortunately that didn’t leave time for developing other prototypes.

- People who tested the prototype all have a similar profile of a young intellectual which implies easier understanding of higher level concepts (plus tech-savvy-ness). And if such a critical game that is aimed for the masses would be released in the real life, the people exposed to it would also come from less educated backgrounds.

- Doing interviews during the playtesting itself most likely influenced the players in the way they play. One participant pointed out that discussing matters in the middle of the game made her more aware to the game elements afterwards.

- The playtest of the part of the game with entering “the dearest to your heart person” was not realistic in all cases due to this not being something people would do completely openly in front of me. One participant entered a codename in order to experience the original idea of the concept and it worked realistically in this case. But at the same time another participant entered there the name of their cat which made that part of the test invalid in this case. So this aspect of the game might have had slightly different results if the participants played it alone.

- One of the three editable parameters of the game, the one about attitude to breaks, had a binary value and several participants had a problem with choosing one of them because the descriptions of the 2 binary states were not contradicting each other enough. A more clear wording should have been chosen there. But this also reflect the challenge of getting from the player
realistic real life information due to it often being multilayered in our actual reality in the real world.

- The changes that the players made to the game in the last part of it were not vivid enough and not communicated well enough for the player to really feel “in power” of it. This significantly diminished the effect of “giving the player the power to change the message of the game”.

Somewhat strong aspects of the work:

- diversity of the participants in both interventions when it comes to:
  - working, working + studying, only studying statuses
  - different backgrounds - economics, engineering, design, marketing, politics
  - different experience with the games domain
  - gender equal distribution
  - half of the participants on first intervention participated in the second as well - this provides a base of comparison between people previously exposed to the genre and those not.

- 6/7 participants taking part in each intervention, followed by detailed interviews. This is an ok number given the limited time aspect of the project and also given that in general this is a good enough number for catching general trends in user behavior in certain contexts.

- deep dive and analyses of similar games gave me an understanding of what usually works well in those games and what doesn’t. This helped to not ‘reinvent the wheel’ and use others’ work as a source of information.

8. FINAL OUTCOMES
or TO WRAP IT UP

Here come the results of this small design research exploration via a summary of the outcomes of analyzing similar work, doing an ethnographic study on selected existing examples and playtesting own implementation of a critical game.

The main critical play factors that I’ve identified to affect reflection to real life, and more specifically self reflection in the player, are grouped according to the sub-questions in section “2.1. Research questions”. Namely:
1. What factors influence the level of **reflection on real life** induced to the players by a critical game?

So it turned out that the main factor defining whether or not reflection to real life will occur via playing the game is **whether or not the player has a personal interest in the topic discussed or is personally experiencing the issue presented**. This is more or less a chance but this chance can be exploited by doing a proper targeting when it comes to distribution of the game. Meaning that critical game developers should aim to distribute the game in the domains whose users are already identified to have interest in the given topic. E.g. add a link to the game in an article that relates to the social issue presented in the game. Or expose to the game people that are likely to have such an issue themselves, e.g. if the game is about the balance workload-off time, then present it to people working in high stress work environment or in any environment with a burn out registered. Additionally, making the experience more personal also addresses this chance to a certain extend by making sure to cause self reflection check happening.

Another key factor was **the balance between the message conveyed and the mechanics of the game**. This means that in order for the critical game to make sense the mechanics of the game should make the player have feelings while playing it that directly relate to the message. In best case scenario the message should be conveyed via the gameplay itself. In addition, in order to strengthen that balance, the more the mechanics of the game resemble the real life aspects of the social issue communicated, the better the flow out of the magic circle and into a real life reflection is.

**Facts from the real life** incorporated in the game also showed higher rates in successfully raising real life reflection in the player (as the testing of the game SPENT showed).

The use of **annoying or unfair interactions** turned out to successfully relate to the real life association as long as they raise in the player the same feelings that the real life situation they refer to does in the real life. And also as long as they are not overwhelming and taking too much away from the player’s agency.

When it comes to reflection on level society as a whole, big picture scale, favourable factors showed themselves to be the use of **storytelling** and letting the player experience a **point of view of a concrete individual**. This showed to better make people connect with the message via the empathy to another human being aspect and rated better in inducing real life reflection amongst common people than the use of abstracted representations of society (which requires higher abstraction thinking skills and is thus more appropriate for people with higher education background).
What is more, this first person perspective of experiencing the game is also a good approach for hitting those people that would make a self-association with the first person character due to having the same problems in their own real life as the character is having in the game.

2. How does a mechanic of the player entering personal data from their real life in the game influence the experience in relation with the self-reflection rate and the impact of the game’s social message?

It turned out that making it more personal via incorporating real life info about the player did show a potential in strengthening the game’s message. The dependence on the chance of ‘does this player personally experience the issue communicated’ was still there, this can’t be avoided. But throwing in personal aspects of the player’s own life and touching upon their private space allowed for the message to have a stronger chance in leaving an impression on the player. This concerns especially those players that personally don’t have issues with the concrete message communicated but making them compare their own attitude to how that’d play on someone else personally important to them allowed for another level of self reflection via empathy to others. Either way, making it more personal via real life personal info, such as player’s own name and how they do things, in addition to the game turning its interest to the player himself showed a consistent positive effect on the self reflection rate.

3. How does empowering the player to change the game in order to provide space for self-expression affect the impact of the game’s critical content?

Trying to explore with this self-expression space how games can be used as a tool for a two-way dialogue designer-user, I discovered a potential for collective message conveying. Uncovering from the ethnographic study that disagreeing with the message of the game was a factor impeding real life reflection, I wanted to further explored this by asking the players to share their own opinions via the agency that people get as the power of the game medium itself. Unfortunately I didn’t manage to fully explore this concept with my own prototype due to implementation and time limitations and hence the agency I managed to provide my users to change the parameters of the game was not strong enough to really uncover this potential. But in the long run, as identified by one participants, if such outcome of a game could be shared in real life context, e.g. the managers at work, then it could make an actual difference in the real life.

The original concept here was to give the player the opportunity to disagree with the designer’s personal view on the matter and strike up a two-way dialogue. During playtesting such games though it became clear that real life facts (and statistics) got
always appreciated and thus this lead to the thought that such opinions of the players on a given message could also be appreciated if summarised and presented to the future players as a collective statistical “truth” or at least the collective real-life mood about the given topic. This shows a potential of using critical games and the agency to the player they bring with themselves as a tool for research of the mass opinions of people on important social messages in addition to the original critical games’ purpose of aiming to raise awareness on a given topic. Thus instead of a message coming from the personal opinion of the designer of the game, the game could offer a collective message coming from the people playing it. What is more, such an approach could additionally make use of the people who played the game but didn’t make a strong reflection due to already having figured out the topic presented by the game. These people could, in a such a collective message scenario, support the awareness cause by providing more credibility to the message and could also personally find it interesting to compare how their “figuring it out” relates to the one of the masses of other people.

This potential is something that further explorations could develop more and enrich via it the critical games genre, addressing in this way the issue of critical game passing a one way message to the audience and using the power of the game medium to add credibility to that message by supporting it with the opinions of all the regular people playing the game.

9. CONCLUSION
or SUMMARY OF WHAT THIS THESIS WAS ALL ABOUT

This thesis project aimed at exploring how online critical games can be used as a tool for conveying socially related messages in a more impactful way. More concretely, this exploration was through the lense of striving for self-reflection in the player as a means of conveying an otherwise widely relevant social concerns. A sample game solution was developed during the project to explore the identified design openings of making the experience more personal by incorporating information from the player's personal real life in the game and giving the players the power to change the message of the game by incorporating their views on the matter in the ways the game works. Besides discussing the effects of those novel aspects for critical games, as part of the exploration, factors influencing the real life reflection critical games manage to induce in the players were also analysed and synthesized. This project was a small step in uncovering the potential of digital socially relevant critical games but one uncovering yet more potentials of the domain to be explored and exploited for stronger social messages conveying.
ACKNOWLEDGEMENTS

I want to dearly thank my friends and family who supported me in this quite challenging journey. Academia is not my strongest suit, so I want to also thank the teachers throughout the Interaction design master program who helped me make sense of it. More specifically, I want to thank Simon Niedenthal, who was my supervisor for this project and who supported me in the process with both guidance and encouragement. I also want to sincerely thank the participants who took part in all the sessions for this project. I appreciate their honesty in the feedback and their broad thoughts sharing in relation with the topics at hand. I wouldn’t have been able to do this without the help of all these people, so thank you all! (Including you, who’ve invested time in reading this thesis and maintained interest in it up to these last lines). Thank you!

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**APPENDIX**

Keeping track of my process and trying to see it from a holistic point of view, took sketching notes about it in several different ways.

Double diamond inspired process overview
My design process mapped by the matrix presented by Wiberg and Stolterman (2014) in their “Knowledge Contribution Concern for Interaction Design Research” paper

Work in progress overview
Chronological process overview

6.1. Ideation experiment ‘modify existing games’
6.3. Exploring people's perception of similar work - playtesting + interviews x 7

Profiles of the participants
Covering:
- Basic info: gender, age, profession, origin and country of residence (if it differs from homeland)
- Games experience

Participant 1:
- female, 24 years old, studies “International relations” (very politically engaged), Bulgarian, have been living in Britain, the US and Sweden (currently)
- has an interest in indie games, both as entertainment and as medium
Participant 2
- female, 31 years old, works within marketing and own NGO running tackling homeless animals issue in Sofia (i.e. socially engaged), Bulgarian
- smartphone games while commuting, used for relaxing

Participant 3
- male, 27 years old, environmental engineer, Swede
- is a gamer, regularly playing both mainstream and indie games, plays for entertainment and relaxing

Participant 4
- female, 28 years old, marketing scholar doing PhD, Bulgarian, lives & works in Spain
- doesn’t play any games

Participants 5 & 6
- female, 28 years old, working with economics, Bulgarian and
  - male, 30 years old, a developer, Bulgarian (her boyfriend chiming in)
- regularly play board games with friends

Participant 7
- male, 24 years old, interaction design master student, American, lives and studies in Sweden
- is a mainstream gamer, plays for relaxing and as escapism

Full transcripts of the interviews can be seen in detail on the following link: https://drive.google.com/drive/folders/1fuxlGBTX33lunMOZ09vViX-L3PIFnVA?usp=sharing

Here follows a summary of each player’s input on each of the 3 games with common traits color-coded for easy following of trends within the interview results.

Results one by one:
**The Free Culture Game** by Pedercini (2008)

**Participant 1** (has interest in indie games, international relations student):
- Liked the idea but not the execution as she didn’t understand how to play the mechanics [how to play issue]
- Liked the idea and how this format of a game is “an easy way to explain what is the marketplace of ideas”
- Thought about the message and would have liked if it represented that you need both the market and the free flow of ideas. [disagreeing with the message]
- Felt that the mechanics of the game were not very related to the ideology - “just mechanic actions and not every action making you think of copyright” [detached message - gameplay]

**Participant 2** (smartphone games player, works with marketing and NGO running):
- also had problems understanding what to do > refreshed to read again the rules. Wanted more visual explanation. [how to play issue]
- was annoyed by the music and stopped it [sound interactions annoyance]
- enjoyed the gameplay and found it entertaining due to its “qualities of a simple unstressing phone game [...] that doesn’t require too much thinking
and gives you focus to relax [...] and of course educational” [playful interactions enjoyed]
- she really liked the playing mechanics but message she got from the game description separately “I understood some things because I read the description” [detached message - gameplay]
- Got the message as “the point is to have a balance between the two and actually most of the content to be free” but
- “I understood the message but it made me question it - I think we need the payed market” because “if authors don’t get paid for what they do how can they survive?”[question the message, disagree]

Participant 3 (gamer - both mainstream and indie games, engineer):
- also had problems understanding what to do > “It took a while before I understood what I’m supposed to do”, too fast explanation, readability issues [how to play issue]
- “it’s a good idea to make a game about free thoughts and copyright.”, “this copyright thing is something that’s very important and interesting”, “but I don’t think it was well implemented”, “it was not really connected to the idea or the point that it tried to get across” [detached message - gameplay]
- Also questioned the message saying “I think copyright is needed.”, “It’s obviously a big deal.” and had a lot of thoughts about the good and bad sides of copyright “I think that easy access is something that’s part of the problem and much more important than focusing on the money aspect.” [question the message]

Participant 4 (doesn’t play game, marketing scholar)
- no problem understanding the game, wasn’t sure about 1 mechanic but got it while playing the game
- “The meaning itself was very interesting to me because I hadn’t thought before about how this is really happening”, “especially for me who works with marketing”
- got the message both from reading the initial rules and later while playing it got further cleared out “in a way first in theory and then in practice, I think” enjoyed both playing and thinking about the message [symbiosis message - gameplay]
- felt like a game from childhood due to the fast movements needed “but combined with some deeper meaning” [interactions enjoyed]

Participants 5 (& 6) - occasional gamer, economics worker (& a developer)
- “impossible to play with a touchpad” the irritation made them give up on it [technical issue]
- felt message is too high-level picture, on level society and not the human cause you are a impersonal regulator of the processes between the people, too high-level picture, didn't touch her [dislike message]

Participant 7 (mainstream gamer, interaction design student)
- really frustrating!
  - didn’t understand how to play, how to win [how to play issue]
  - the controls were frustrating because it was hard to feed some characters due to game mechanics [interactions annoyance]
- “there was a disconnect between the message and the actual game” “I didn’t feel any of that (from the intro) while playing, didn’t make me thing of consumerism” [detached message - gameplay]
- Found the message unappealing, too extreme - wouldn’t like to play a game about that because it’s not fun and he uses games as escapism [dislike message]
  - didn’t like that it was stressful gameplay because of the escapism too
- poor execution - “they try to really explain the concept of the because, but they didn’t really explain how to play the game”

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**SPENT** by McKinney agency (2011) - campaign like
Participant 1 (has lived in the US; has interest in indie games; international relations student):
- liked the abundance of relevant information
- would play again to see if clicking different things leads to different results [the unfolding storytelling aspect]
- connected with the message personally because has lived in the US and seen first hand the abrupt differentiation of the classes in real life. [personal relation to the message]
- empathy, in someone else’s shoes - “for me it was interesting to see, to be put in a situation in which you see how hard it is”
- felt strong agency - contrasted how “really putting you in their position” yourself is stronger than being a passive consumer of art like e.g. movies — and makes for a strong message even if she was not that much into the topic of the unprivileged [message strengthened by real life facts & agency]
- feelings of anxiety and compassion for others [stressful interactions]
- challenging mechanics - are you good enough feeling, feeling responsibility to do your best to make it through the month [challenging interactions]
  - though she realizes it's the system that makes it so and you shouldn’t feel guilty yourself for not making it [system message conveyed]

Participant 2 (smartphone games player; works with marketing and NGO running):
- actionable empathy - understood the purpose of the game as to motivate you to donate “I think it is successful in its goal to make people donate - it made me click on donate and look there. ”
  - “I understood the message - why we need social support for unemployment, health care, etc”
- the unfairness of the game
  “But I wouldn't donate because it made me think there is something wrong in the American system.” [system message conveyed]
- didn’t like so much the gameplay format - “I was missing pictures and visuals, it was only text”
- played as she would in real life
- felt lack of agency - “I can play only once - I know already what happens. Even if I click on different things not much changes”

Participant 3 (gamer - both mainstream and indie games; an engineer):
- unfair game - felt the game doesn’t pay back according to the decisions you make, e.g. if you paid more money.
- critique to the gameplay, disturbed agency feeling - “There were no consequences of what you are doing” e.g. “I took the cheapest insurance and that didn’t make it harder for me”
- **awareness** raising - “I think it was quite good at raising awareness.”
- “they wanna make a point about the harsh living in America and I get it. It must suck to be in America. And that’s why I like Sweden.” [system message conveyed]
- **personal reflection** - contrast comparison with own country, Sweden
- relation to real life - when you chose “ask a friend” and it sent you to your fb wall; breaking the magic circle
  “That it was like breaking the fourth wall. You’re not in the game any more. It’s interacting with real life, the real you. You are not playing a character which you might have thought that you were. “

**Participant 4** (doesn’t play game; marketing scholar)
- liked the “fact check”
- liked the clear goal - make it through the month
- **agency** - felt like she has more power over what will happen (more in comparison with ‘The free Culture game’ where the goal was also clear)
- feelings: both exciting about what will happen and sad and depressing about the hard decisions [the unfolding storytelling aspect]
- reflection to real life - was really affected by the real life facts and statistics
- raised the strongest emotional reaction - due to the moral choices (especially the child related)

**Participants 5 & 6** (occasional gamer; economics worker [& a developer])
- liked that it’s more “practical” and that there are right and wrong answers, liked that you have a clear goal
- liked the facts that one gets after each choice - “how things are in general and what your choice meant”
- liked that they were concrete situations - clear and short
- felt a bit sad for the person in the game and besides the real facts having some social impact it’s still a bit distant because for you this is a game
- didn’t like that the game tells you how you feel - now you are very stressed (in contrast with Every day the same dream).
- [6] felt it was unreal because it was in American context and you not knowing their system can’t foresee what will be the results of your choices [system message conveyed]

**Participant 7** (American; mainstream gamer; interaction design student)
- “**very informative** for the public to understand what people in low income households go through”, “A lot of it I knew already as it is based in America and I understand that stuff.” “and yea, it sucks.” [obvious message] [system message conveyed]
- gameplay felt **unfair** “They just want you to fail” and he felt that he has **no agency** because the game just throws random situations at him and factors
you were not informed about such as all of a sudden having a kid
[interactions annoyance as part of message conveying]
- “I know life isn't fair, but all that just seems very, very against the player
  in every single way”
- played as he would in real life
- “I feel like the only way to win is just to be completely heartless.” loses
  motivation to play if not clear how to win?
- explorative aspect - played twice because wanted to see to what different
  situations would different choices lead [the unfolding storytelling aspect]

Every day the same dream by Pedercini (2008)

Participant 1 (has interest in indie games; international relations student):
- Started with depicting the order of things she did and enjoyed the exploration
  aspect - “every time something changed I really enjoyed it” [the unfolding
  storytelling aspect]
- Felt frustration due to the limited player agency and the lack of new thing to discover (and knowledge how to) - “the moments I couldn’t change anything I felt frustrated” [interactions annoyance as part of message conveying] [how to play issue]
- In combination with that, the slow pace of gameplay made it feel “boring” - “cause there was a lot of walking and repetition” “and just at some moments I was clicking the mouse and wishing it would go faster” [interactions annoyance as part of message conveying]
- Liked the idea but not the execution [different liking of message & gameplay]
- The message though felt unoriginal and over exploited in many other forms of art, participant was too familiar with the concept [obvious message]

**Participant 2** (smartphone games player; works with marketing and NGO running):
- didn’t understand how to play and abandoned the game [how to play issue]

**Participant 3** (gamer - both mainstream and indie games; an engineer):
- liked the explorative aspect of the game and the humour, found it funny [the unfolding storytelling aspect]
  - “And in the same sense it can be very frustrating” to figure out the last thing to do
  - personally related to it - “it was hitting home pretty well”, “I am living that kind of work, I’m sitting in my cubicle and it’s just like every day the same thing.”
  - This one “relates to all of us. It’s easier to relate to”

**Participant 4** (doesn’t play game; marketing scholar)
- didn’t understand how to play, did things randomly [how to play issue]
- was entertained by the random discoveries “it was interesting for me what will happen next”, the cow discovery fascinated her [the unfolding storytelling aspect]
- has decided the goal is “to not be late for work” and expected to get fired when late 4-5 days in a row. Then gave up.
- lack of agency - she wanted to not be late and when she couldn't go any faster and was always late anyway, it felt boring/lame'
- “everything is very monotonous” comment
- feeling of playing it - the need to be in a rush (in order to not be late)
- reflection on level society:
  - didn’t connect personally (due to being a academic herself and having flexible hours) but understood the message in general
  - you gotta live like a machine, go pass everything and be in a rush

**Participants 5 & 6** (occasional gamer; economics worker [& a developer])
- fast connected gameplay with message = “if you get in a routine not much is going to happen unless you do something different”
- strong relation to real life -
  - “So there was a relation to the real everyday life?”
  - Yes, and that’s why I killed him and stopped playing”
  > desire to stay in the magic circle? to escape unpleasant reality
- pointless message - “everybody knows that life is grey and you have to diversify it” [obvious message]
- “but is still interesting because it is very graphical and short”
- personally related most to this one! “because everyone thinks that they have grey everyday” and “because it doesn’t tell you how you feel and lets you feel what is inside yourself” (in contrast with SPENT)
  - thought it’s important that the game makes you feel things yourself by putting you in circumstances that count for most people

Participant 7 (mainstream gamer; interaction design student)
- “I played that for so long. It was sooo frustrating.”
- enjoyed the exploration aspect - Started with depicting the order of the things he did and tried everything he could to find what to interact with [the unfolding storytelling aspect]
- the progress, the goal orientedness, stimulated him to progress
- enjoyed the moment of having agency - the game letting him proceed without clothes besides the wife’s warning
  - was annoying when reached a stuck point and had no clues for proceeding [how to play issue]
- so how did that feel? “It was very annoying. And the music was very, very irritating because it never changed. But I guess that’s what the game is about.” [interactions annoyance as part of message conveying]
- no reflection about real life, “not at all” Was disappointed that some interactions, like the leaf falling, were pointless “Oh OK. I don’t know what the point of that was.”

Other game references

Participant 1 (has interest in indie games, international relations student):

[balanced message - gameplay]

Gave an example with the “We become what we behold” game as one where gameplay mechanics and message are very well balanced, i.e. both are interesting and matching each other.
Likes that one the most because she has personal interest in the polarizing topic more than the topics of all the other games.

**Participant 3** (gamer - both mainstream and indie games):

[balanced message - gameplay]

“I like when you have an idea, you have a point that you wanna get across and then when you make it into a fun experience. I think that **Papers Please** is doing that super well.“

“**moral aspects** of the game’s very interesting.”

“If you wanna make a fun experience but you want it to be lasting then you have to make a good point. [...] Need to have both to be really lasting.”

[the storytelling aspect]

“otherwise it’s just games with good story. Can’t really get that out of your head.”

“I know that I’ve played a masterpiece when I finish the game and then can’t stop thinking about it and just wanna tell everybody to play”

reference **Parable Stanley**

**Participant 7** (mainstream gamer, interaction design student)

Made a point that all 3 games didn’t explain if there is a win state and if yes, how to get there

“They never explained what are the winning conditions to how you end the game? Like I need the game to have an ending.”

“I don’t need the games to be winnable but if is winnable, I need to know how to win or the condition of winning.”

And he lost patience with those games when “nothing was happening / changing “

- the unclarity of what to do - need hints
- the loss of feeling of agency - what I do makes no difference so I give up on it
Some notes from the empirical evaluation and initial sketches of the prototype

Brief notes on comments on the different stages of the game by 6 participants
Comparing results between the 7 participant when it comes to reflection factors

**Full transcripts** of the playtesting of the prototype and the follow up interviews on it, along with some extra analysis notes, can be seen on the following link:
https://drive.google.com/drive/folders/1J5AZyfIDZWbUdDHvRiG2i6dKpZc6YtHb?usp=sharing