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**The Games that Play with Us:
How Invisible Agency Affects the Player's Experience
and Changes Narrative?**

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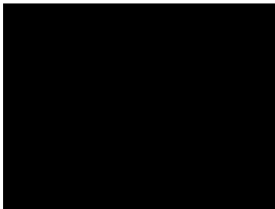
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Abstract:

This paper aims at exploring and developing the concept of the invisible agency in video games and the way it enhances narrative experience through the morality and self-reflection. Three cases are analysed to define the role of invisible agency, where it fully defines the game environment and narrative structure (Silent Hill: Shattered Memories, 2009), measures the morality borders of the player (Papers, Please! 2013) or used to diversify playing experience and broaden the borders of Interactive Digital Narrative (Undertale, 2015). The methodology includes Hartmut Koenitz's System, Process, Product framework and hermeneutic strip extension for the analysis of invisible agency integration in the game systems, accompanied by the Morality Play model, assessing the player's response and morality impact. The final inspection of Invisible Agency potential proves that its use may add deeper and broader experience for branching narratives with systemic choices approach, though some problems may arise, such as systemic misunderstanding of player's actions and intentions. Nevertheless, Invisible Agency develops the Hermeneutic Strip model and adds a delayed reaction of the player to the reaction to the system level, that is specific for this phenomenon and can be used in future works to achieve more realistic approach to the use of agencies in interactive narrative.

Keywords:

Interactive Digital Narrative, Interactive Narrative Design, Agency, Invisible Agency, Paidia, Ludus, Narrative Game, Video Game, SPP Model, Hermeneutics, Morality, Player Choice, Undertale, Papers, Please!, Silent Hill: Shattered Memories

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List of Abbreviations

IDN — Interactive Digital Narrative

SPP — System, Process, Product model

IA — Invisible Agency/Agency

NPC — Non-Player Character

PP! — Papers, Please!

SH:SM — Silent Hill: Shattered Memories

PI — Personal Inventory

Introduction:

Games have come a long way from simple pixel interactions to photo-realistic experiences, from a pure gameplay entertainment, like *Asteroids*, to a complex combination of narrative and game mechanics, like *The Last of Us II*. Every year hundreds of game production studios announce new projects, that vary in the graphics, genres, budgets and styles, but comparatively few games come out as an experiment with the narrative part of a player's experience.

The majority of games, that have branched story systems, follow the clear and predictable way of interacting with players: they offer a series of choices and change the following game according to the actions of the player, who is aware of other options and can expect the outcome of choice they made. However, there is a number of games, that exploit so called "invisible agency" (IA), that was initially proposed as a term by Sercan Şengün in his paper "*Silent Hill 2 and the Curious Case of Invisible Agency*" to describe the way game interacts with the player by examining the actions of the player and their attitude towards the game elements.

In *Silent Hill 2* (Konami, 2001) the ending a player could get depended on the amount of time James, the main hero and player's avatar, spent with some of the characters, the way player behaves (takes risk or plays safe) or inspects objects. During the game process the player makes a number of choices, not knowing about the influence their actions have, and only after finishing the game and trying other play styles or reading the guide one can see how several actions may change the course of narrative the other way.

Such use of game mechanics creates a unique narrative experience, different one for every player. Apart from being simply entertaining, IA works on a deeper psychological level, offering somewhat a disturbing analysis of a player, an intimate and unforgettable experience of finding yourself through the actions of a game hero (though this experience can only be gained once in the majority of the games, a few titles have a long-lasting way of reminding the player of their past actions). Despite such an interesting influence on a player through the narrative system, it is quite hard to find games that would extensively use IA in their narrative system.

But it is possible. With the growing popularity of game production, more and more independent developers and studios started to create projects, that are bold enough to experiment with the narrative and gameplay part, and some of them also followed the idea of using IA for a deeper impact on a player. When *Undertale*, developed by Toby Fox in 2015, was released, critics specifically noted the storytelling, complexity of the story and the impact of the choices, taken on the way of the main hero's adventure, and that are remembered even after playing it all over again¹. *Paper, Please!*, that came out in 2013, also offers a high degree of unpredictability in the story development with over 20 endings, each one heavily depending on the actions of the player, at the same time providing the player with the responsibility for moral choices, that easily break the fourth wall. And, finally, a successor of *Silent Hill 2*, *Silent Hill: Shattered Memories*, first released in 2009, that develops the original idea² of using the IA and exploits it for the new narrative experience and interaction with the player, giving a straightforward psychological analysis of all the actions and choices the player has made, additionally making every playthrough unique as every answer, action in the game and other little details have a significant impact on the game world and the overall ending.

The objective of this paper is to answer the following questions:

- What exactly makes use of IA so memorable and effective in terms of impressing and affecting the player?
- How IA affects the narrative experience?
- What are the reasons for the rare use of IA in the multiple-choices games?
- How IA is implemented in the SPP model and hermeneutic stripe?
- What is the potential of IA for the IDN systems?

To answer these questions, a comparative analysis of the three mentioned games (*Silent Hill: Shattered Memories*, *Papers, Please!* and *Undertale*) will be made with the focus on the use of IA in the narrative, the specific features of their storytelling, player's role in the development of the game story and, finally, the psychological effect IA can cause after having the game finished. Interactions with the player usually happen through the interactions with the player's avatar in the game, however, as IA clearly reflects the

¹ "Undertale Review", Kallie Plagge, IGN, IGN Entertainment, January 12, 2016, <http://ign.com/articles/2016/01/13/undertale-review>

² "Konami Gamers Night 09: Interview With Sam Barlow, Mark Simmons And Tom Hulett (IGN)", *Silent Hill Memories*, April 9, 2009, https://www.silenthillmemories.net/creators/interviews/2009.04.09_barlow_simmons_hulett_ign_en.htm

choices, that are most usually closest to the true will of the player, it has the effect of breaking the fourth wall, that also will be a mentioned part of the study in this paper, and the way this game cause moral choices and psychological effect on the player through interaction. In addition to this, the aim of this paper is to develop the idea of the importance of unawareness of the player for additional narrative experience and the matter of involvement of the player in the story by exploring the most of the game and the narrative.

Because games using IA lack explicitly presented narrative branching, it helps to analyse the behaviour and reaction of the user without breaking the narrative momentum and add up intense exploration value by noting the possibility of different endings (like giving the possible number of them in the end) without actually paving the way to each one.

Chapter 1 — Agencies and Interactive Narrative Design

The idea of interactive narrative design is special for its emphasis on the "interactive" approach to the storytelling and involvement of the player into the game. The interactivity, respectively, is intertwined with the idea of agencies, which were described by Janet H. Murray as "the satisfying power to take meaningful action and see the results of our decisions and choices"³ in her book *"Hamlet on the Holodeck: The Future of Narrative in Cyberspace (1997)"*. The will of the player to change the way story goes by making their own decision is highly important for both the development of narrative branches and the satisfaction of the player, who feels the impact of their actions, or autonomy.

But how often do we get to clearly see the moment of "narrative" choice in our real life? The actions or decisions that impact our future life and alter the possible outcomes never look like a window with the options or a fork in the trail — that's something that happens in the background, unnoticed or hidden from even our own eyes. In other words, something *invisible*.

In the following, this paper will apply two core ideas: the invisible agencies and players interactivity and response, as they will be used to investigate how the world of the game and the narrative design may become closer and more intimate to the players' feelings by increased involvement through unawareness.

³ Janet H. Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, 2 ed. (Cambridge and London: MIT Press, 2017), 159

Invisible Agencies

In the previously mentioned game *Silent Hill 2* the player has the option of making a series of decisions, that will eventually lead to one of the endings. Though this may sound like a usual game, the trick is in the way those decision being made: the player, of course without the guide, will never notice that the decision was made. Every action in the game is counted and taken into attention without warning the character or the player. And because it happens unnoticed, Sercan Şengün called it an IA in his paper, studying this phenomenon through the narrative of *Silent Hill 2* game⁴.

While many games openly offer the player a choice (by letting the player choose a dialog option, participate in quick-time event or other methods of interaction), IA relies on the reaction of the system to the player game strategy. During the development of the Moral Gameplay Taxonomy⁵ a series of conclusions showed that the IA can exist in the narrative system of the game, when both branching narratives and systemic choices are presented.

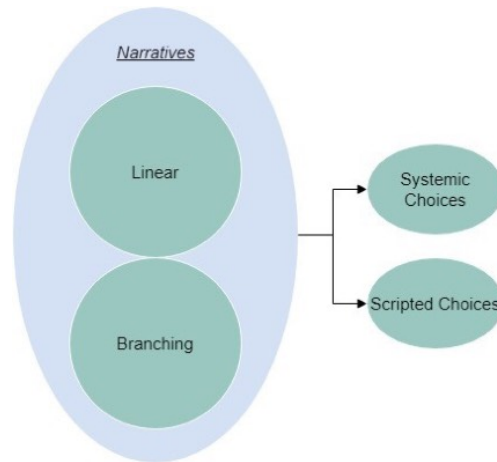


Figure 1: Narratives and their connections to different choices

Branching narratives assume the existence of one ending with the Bottleneck narrative model, where ending is predefined, but the ways to the ending can be different with every playthrough, or two or more endings, that can be gained through the development of several narrative plots, preferred game style or any other way and are

⁴ Sercan, Şengün. "Silent Hill 2 and the Curious Case of Invisible Agency". Conference paper, Istanbul Bilgi University, 2013
https://www.researchgate.net/publication/261873609_Silent_Hill_2_and_the_Curious_Case_of_Invisible_Agency

⁵ Tancred, Nicoletta & McMahon, Nicole & Wyeth, Peta & Turkay, Selen. (2018). Player Choices, Game Endings and the Design of Moral Dilemmas in Games. 627-636

opposed to linear narratives, that have specifically one ending, which is unalterable and fatalistic, sometimes, though, accompanied by the "false" illusion of control over the development of the plot, that doesn't offer alternative ways of achieving the ending⁶. As IA determines the selection of the endings for the player based on their actions, it is impossible to adjust this agency for the linear narratives and Bottleneck structure as several ending are needed for revealing the influence of player's choices, that are inconspicuous with only one ending available.

As for the systemic and scripted approach, Paul Formosa, Malcolm Ryan and Dan Staines state in their article that systemic choices are hidden from the player, and there is little or no sign of the change in the narrative flow, while scripted choices make sure that the player sees and uses the ability to change the following narrative branch. It is logically derived that IA fulfils the idea of the choices being hidden from the players, thus making the presence of systemic choices integral⁷.

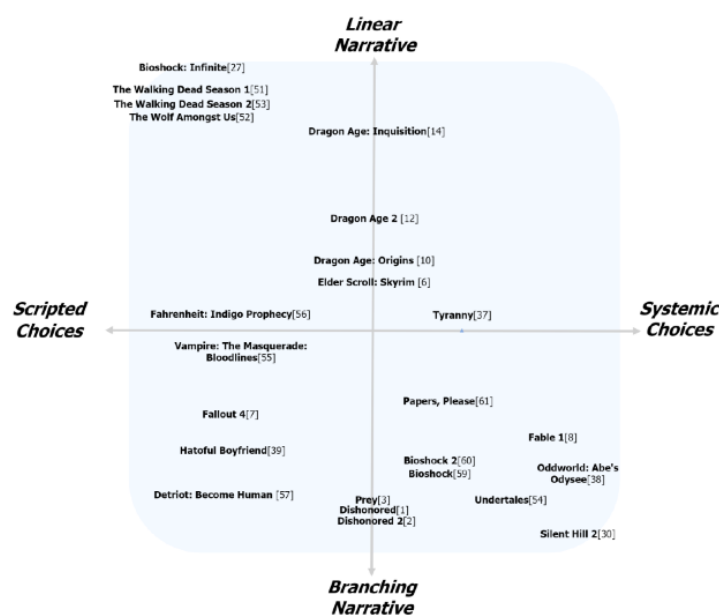


Figure 2: The Moral Gameplay Taxonomy⁸

As the Figure 2 shows, the games, that are soon to be analysed during case studies, such as PP! and *Undertale* are already presented there, as they have been taken

⁶ Harrell, D. & Zhu, Jichen. (2009). Agency Play: Dimensions of Agency for Interactive Narrative Design. 44-52

⁷ Formosa, Paul & Ryan, Malcolm & Staines, Dan. (2016). Papers, Please and the systemic approach to engaging ethical expertise in videogames. Ethics and Information Technology, 5

⁸ Tancred & McMahon & Wyeth & Turkay, Player Choices, Game Endings and the Design of Moral Dilemmas in Games, 631

as an example for the Moral Gameplay Taxonomy research⁹, while SH:SM, that follows and develops the ideas of *Silent Hill 2* (which is present at the table) can also be considered suitable due to the branching narrative and a huge amount of systemic choices.

Thus, the specific use of IA is limited to the games, that support systemic choices and branching narratives, but with this IA allows to increase the emotional impact on the player, thus employing a greater experience and psychological response to the results of the game (especially after learning that there are several endings in the finished game¹⁰).

⁹ Tancred & McMahon & Wyeth & Turkay, Player Choices, Game Endings and the Design of Moral Dilemmas in Games, 632

¹⁰ Sercan Şengün, "Silent Hill 2 and the Curious Case of Invisible Agency ", 6

Player's response and morality

The history of videogames with morally based themes, narratives and choices, also referred as "ethically notable videogames"¹¹ starts approximately from 1980s with the appearance of *Ultima IV: Quest of the Avatar* (1985), introducing the so called Virtue system, that can be presented as one of the early representations of morality meter, karma or morality calculus in videogames.



Figure 3: A screenshot from *Star Wars: Knights of the Old Republic*

But morality meters became a trend after *Fable* (2001) and *Star Wars: Knights of the Old Republic* (2003) became a success, and few big releases excluded morality from the gameplay and the narrative. At those times morality meter usually was a scale with two opposite moral values (usually as evil/good, dark/light and others), where an indicator moves towards one of the extremes, depending on the player's choices, or two scales with the opposite values, that would fill simultaneously, but with different speed, also depending on the player's choices.

But with such extremes greatly affect the player's ability to make decisions that are inherently their own — whenever there is a choice between something that is considered by the game as "good" or "evil" options, games "deliver to our players all the exciting possibilities of either being Mother Theresa or being Hitler"¹², as the game always

¹¹ Zagal, J.P. (2011) "Ethical Reasoning and Reflection as Supported by Videogames", Schrier, K. & Gibson, D. (Eds), *Designing Games for Ethics: Models, Techniques and Frameworks*, pp. 19-35

¹² James Portnow, "Opinion: Mother Theresa Or Hitler? Designing for Ambiguous Moral Choice", *Gamasutra*, July 9, 2009

controls you as the player, noting and visualising your responses, as if you are closely watched after. Such intrusive mechanic though creates the ability to follow your progress, at the same time it destroys any type of personal response to the presented action, because instead of choosing what is closer to the player's real intentions, the player may start counting the amount of points each possible decision may bring. Another downside of this method "arises when the player is allowed to act inconsistently (a good character suddenly decides to become a murderer or vice versa). Although primarily this may be perceived to enhance freedom, being able to make inconsistent choices ruptures the player's attachment with the storyline and the character"¹³.

With time, however, as the moral meters were heavily criticised for the lack of flexibility and fixed subjective moral codes¹⁴, more and more games started to treat the morality, especially grey morality, with greater care, excluding the judgemental aspect of the meters and adding the depth to the narrative. Such games as *This War of Mine* (2014), *The Witcher 3* (2015) and *Dragon Age II* (2011) offer the choices, that, at first, may seem like they fall under universal morality, but at the same time have some underlying moral dilemmas: like killing an person that have committed serious crimes for the survival of their family. The outcomes then are either shown in the future moments of the game as a part of the narrative, or affect the gameplay.

Player's response to the possible choices is then affected mostly by their inner feeling and moral codex, allowing the narrative part of the games to impress the user more with the possible outcomes and create a personal experience, instead of acting as a moral mentor (apart from educational games, that focus on raising the moral awareness, but they do not fall under the aim of this paper's research). Therefore, the less the user knows about the obvious results of the deeds, more sincere their gameplay is.

¹³ Sercan Şengün, "Silent Hill 2 and the Curious Case of Invisible Agency ", 5

¹⁴ Melenson, J. (2010). The Axis of Good and Evil. In K. Schrier (Ed.), *Designing Games for Ethics* (pp. 57-71).

Methodology

For this paper it is essential to understand the methods for the analytical research of the cases with the implementations of IA, and there are several frameworks that initially allow to critically assess future cases and the use of IA in them, also taking into account the ethical and morality approaches throughout the game narrative system.

As the primary feature of video games and agencies is interaction between the player and the game system, which was previously mostly impossible for other branches of narrative media, it was just a matter of time before new frameworks, methods and analytical methods would arise to create a unified idea of interactive narrative systems and all the subsequent ideas following them.

Starting with the discussions between ludologists and narratologists regarding the nature of narrative in video games, ending with the updating the numerous aspects of the theory and improving the narrative simulation systems, the IDN has achieved its place as a separate and autonomous, even considering the challenges it faces, such as "the dependency on legacy analytical frameworks (Groundhog Day), the lack of a shared vocabulary (Babylonian Confusion), the missing institutional memory of the field (Amnesia), the absence of established benchmarks (No Yardstick) and the overproduction of uncoordinated and quickly abandoned tools (Sisyphian Tool Production)¹⁵".

One of the frameworks, that has been developed through the years of research is a Koenitz' SPP model (system, process, product)¹⁶, that reflects the participatory process of the IDN. *System* is regarded as a digital artefact (including novels, games, movies and other forms of narrative), *Process* as an interactive experience with the System, and *Product* as the received result of the experience, expressed in sharing it to others. The goal of this model is to show that anything with the cognitive frame of the narrative can be considered IDN. But the SPP system itself in the terms of our research is not as important as its development with the *protostory*, *narrative design* and *narrative vectors*, that describe the space for the narrative, connection of the elements of narration and specific directions of the story respectively. Being a part of IDN System, they form the overall idea of the media artefact, and reflect the connection of IDN to the user.

¹⁵ H. Koenitz and M. P. Eladhari, "Challenges of IDN research and teaching," in *Interactive Storytelling*, R. E. Cardona-Rivera, A. Sullivan, and R. M. Young, Eds. Cham: Springer International Publishing, 2019, pp. 26–39

¹⁶ Koenitz, Hartmut & Palosaari Eladhari, Mirjam & Louchart, Sandy & Nack, Frank. (2020). INDCOR white paper 1: A shared vocabulary for IDN (Interactive Digital Narratives). pp 11-14

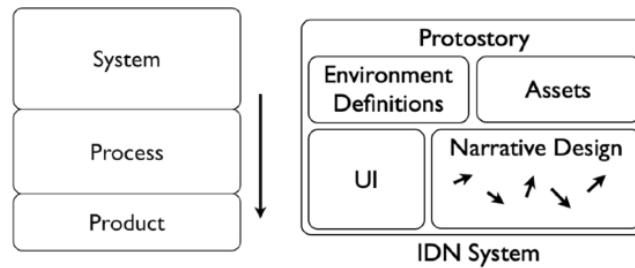


Figure 4: SPP model and protostory elements

As this paper is dedicated to the idea of agency, it is important to note that SPP model was extended to introduce agencies as a part of it and a part of IDNs. This extension is also known as hermeneutic strip or double-hermeneutic circle, that shows the correlation and dependence of the freedom of using agency and player's interpretation of the gained narrative. In other words, hermeneutic strip refers to the way player reacts to the reaction of the system, reacting to the player, and this loop continues until the final product of the SPP system is released.



Figure 5: SPP model with the extension by double-hermeneutic circle

The combined use of SPP and hermeneutic strip will be a core model behind the qualitative analysis to understand the coherence between the way game responds to the actions of the player in terms of IA and systemic choices and how the player may react to the changes, triggering even more IA.

But when it comes to the morality part of the games, it is essential to refer to other frameworks and theories, as they are needed for deeper understanding of the moral decision-making mechanism in the context of games with increased branching narrative and psychological motives in the core. One of them is a model called *Morality Play*¹⁷,

¹⁷ Staines, D., Formosa, P. and Ryan, M., 2019. Morality play: a model for developing games of moral expertise. *Games and Culture*, 14(4), pp.410-429.

which was developed for model for ethical expertise development. Respectively, *Morality Play* is based on the Integrative *Ethical Education framework* and the *Lens of the Toy* model for serious game design.

Moral expertise is based on the inspection of the so called "toy", referring to the system with the simulation of a world, that can produce moral issues and the options to address them. A proper moral "toy" is created with the attention to the following questions:

Moral focus: What motivates the player to treat moral decisions as moral decisions and not as instrumental choices?

Moral sensitivity: Are morally salient features clearly signposted or is the player expected to recognise them without prompting?

Moral judgment: What are the different moral norms or values that might drive the player's choice?

Moral action: Are persistence, leadership and communication skills needed to implement moral choices?

The player should be exposed to the game's moral challenges, through *identification* (introduction to morally important features of the game), *elaboration* (letting the player to take first actions), *procedural* (problem solving with the gained experience and rising stakes) and *execution* (development of the knowledge execution and coordination of moral skills for achieving objectives).

This model of *Morality Play* describes and evaluates the idea of narrative and gameplay approach to the development of ethically notable video games across disciplines, and though they can be considered as a guide for creating moral dilemmas in the games, it can be also used reversely to analyse the way games achieve the psychological effect and impose moral choices on a player. This methodology will complement and expand the use of SPP and hermeneutic strip for the researching, analysing, comparing and processing data, presented in future case studies.

Chapter 2 — Case Studies

Silent Hill: Shattered Memories

SH:SM is the seventh game in the Silent Hill main series, that was developed in December 2009 for Wii by British studio Climax Studio, that has also developed one of the previous games in Silent Hill universe — *Silent Hill: Origins* (2007). SH:SM was conceived as a reimagining of the original game for the celebration of the tenth anniversary of the series and a return to the original ideas. Though SH:SM uses the names of the characters and of the places from the original Silent Hill game, it is set in a different fictional universe with different plot and characters.

The gameplay of SH:SM is divided in two parts: first-person therapy session fragments and a third-person journey of Harry Mason, the main hero, through the Silent Hill with occasional "Nightmare" sections, the alternate dimension, full of monsters and different from the real world by the icy and frozen landscapes.

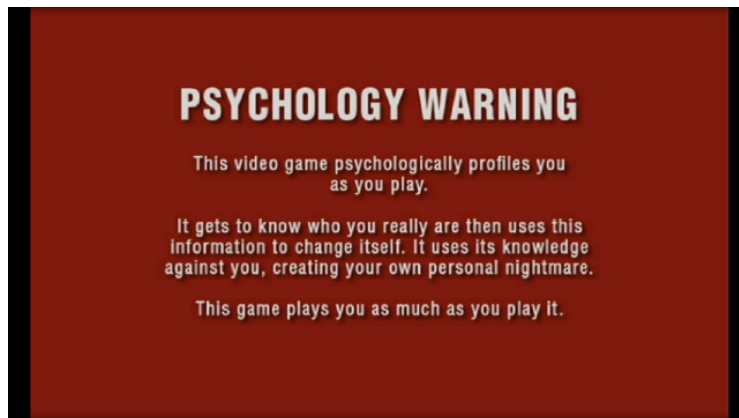


Figure 6: Screenshot from the beginning of SH:SM, where the player is warned that they are psychologically profiled.

The journey through Silent Hill section consists of meeting the NPCs, solving puzzles, interacting with the in-game phone and high-interference object to help Harry find his daughter, Cheryl. When the scenery changes to the "Nightmare" world, the player needs to navigate through the linear spaces to a predetermined exit, escaping monsters, that chase the character upon detection.

All the actions in the game, including the answers during the therapy session, attention of the player and the way he acts in the game world, change the possible

outcome, as there are 8 endings (3 in the Encounter Ending segment, 4 in Video Tape segment and 1 UFO Ending), and give a major space to study the case of invisible agency and morality of the player throughout the game experience.

Plot

The game starts with the scene from Dr. Kaufmann's cabinet, where he is noted that the patient has arrived early, and he replies that it is good they can start. Just after that we see how Harry Mason gets into car crash on an icy road and crawls out of the car. Therapy session immediately continues (Therapy session 1: Questionnaire), and Dr. Kaufmann offers the patient, that is played by the player, a "personality inventory form" with the statements, that the player can either agree (true) or disagree with. The statements include such expressions as "I make friends easily," "Having a drink helps me relax" or "I have never cheated on a partner". From this point, game starts to actually count player's choices and behaviour, using the system, similar to the PaSSAGE system¹⁸, that will be described later.

After the therapy session scene we switch to Harry's point of view, as he recovers and travels through the snow-covered streets of Silent Hill in search of Cheryl, his daughter. He then reaches the diner, where he meets Sybil Bennet, or the bar, where he meets the bar maid (depending on the therapy session choices). As they talk and Harry gets the mobile phone, he learns the address of his house and receives a call, which makes him think that Cheryl is back home and waits for her dad. Soon Harry receives another call with Cheryl's and a stranger's voice, that makes Harry believe that his daughter is in danger. But as soon as the call terminates, main hero gets into the "Nightmare" world, where he has to escape Raw Shock monsters and get to the exit.

¹⁸ Thue D, Bulitko V, Spetch M, et al. Interactive storytelling: A player modelling approach. In: Proceedings of the 3rd artificial intelligence and interactive digital entertainment conference, 2007, pp. 43–48.



Figure 7: Depending on the questionnaires answers, player can meet one of three kinds of Cybil appearance (Brown-haired Cybil, Police Outfit Cybil and Sexualized Cybil) and two kinds of behaviour (Friendly and Aggressive).

Another therapy session begins (Therapy session 2: Family), and the player asked some true or false questions before being provided with a picture "Happy Family" and offered to colour it. All the colours that the player picked for the house exterior and the clothes of the family are then shown in game. In this house he encounters a couple and tries to learn whether Cheryl is in the house. The couple claims that there is no Cheryl there, and this house can't belong to Harry as the couple has been living there for 14 years. The couple then shuts the door and Cybil arrives to pick Harry up, as things with Harry don't add up. They try to ride to the police station, when snow storm interrupts them, and Cybil leaves the car. After some time she doesn't return, so Harry escapes the car and goes into the woods towards the police station, where he once again gets into "Nightmare" world.

He arrives to Midwich High School's football field. There he is contacted by Cybil, who directs him to the high school's gym. The third therapy session begins (Therapy session 3: High School), and now Dr. Kaufmann asks questions regarding high school, and offers to create a "perfect school day". We return to Harry in high school, where he soon meets Michelle Valdez, who is acquainted with Cheryl and shows Harry the school photo of his daughter, however, Cheryl is an adult on the picture. They get to the principal's office to get the records and discover that it was indeed Cheryl's photo, but she moved to Simmons Street. After another "Nightmare" world sequence, Harry and Michelle meet outside the school and head to the night club The Balcan.



Figure 8: Three variants of Michelle's look based on the player's choices.

Michelle is left downstairs while Harry looks for her car keys, but as he returns, young Dahlia is sitting in Michelle's place. She explains that she expects to get Harry to Cheryl, but as they get in the car and start driving, Harry gets into "Nightmare" world, and as the car was on a bridge at that moment, bridge turns into ice and breaks. Car falls in the water. Depending on the player's actions, Harry can either drown or escape car. New therapy session starts (Therapy session 4: Death), and Dr. Kaufmann allows the player to distribute the pictures of the people between "dead" or "sleeping" categories.

After the session, Harry wakes up at the Hospital, saved by Cybil, who tries to convince Harry that the events, described by him, including swimming in the river, are impossible, but interrupted by another "Nightmare" world transition. After the completion of this segment Harry meets Lisa Garland, a nurse, that also survived car crash. They get to her house, and Harry is asked to get Lisa headache pills. As Lisa falls asleep, Harry heads to the mall. Another therapy session starts (Therapy session 5: Guilt), and Dr. Kaufmann tells a story, on completion of which offers the player to put the figurines in the order from most guilty to least guilty, commenting the final choice.

Then we return to Harry and help him to get to the mall. He has to return to Lisa's apartment after her call, in which she begs for help. When Harry enters apartment, he either sees Lisa dead or dying (depending on whether the player chose right pills). Cybil appears and confronts Harry, noting that he isn't Harry Mason, when everything turns into the "Nightmare" world. After that Harry appears in Shopping Center and reaches Simmons Street. He meets Dahlia, that looks older and claims that she and Harry are married, and Cheryl, their daughter, is at the lighthouse. World freezes once again, starting the "Nightmare" world sequence, at the end of which Harry enters Cheryl's bedroom and falls asleep.

Meeting with Dr. Kaufmann starts (Therapy session 6: Marriage), where he asks questions regarding the attitude to the marriage and then offers to match up 6 people into couples. As the player is done with that, Harry wakes up with Michelle next to him, suggesting riding to the lighthouse. They get in the car, where Harry meets Michelle's boyfriend, John. During the ride the couple starts arguing and gets out of the car. Harry escapes the car and reaches Annie's bar, where he meets Michelle, who broke up with John, and tells that Harry can get to the lighthouse by swimming across Lake Toluca with the boat behind amusement park. Therapy session starts (Therapy session 7: Sex). Player is instructed to decide whether offered pictures can be considered sexual or not. Regardless of the choice, Dr. Kaufmann will initiate the discussion about death.

Harry finally gets to the boat, where young Dahlia is waiting for him. Harry asks her to take him to the lighthouse, and as she agrees, they have sex. Later Harry wakes up to find Dahlia frozen and the world becoming a "Nightmare" again. He travels to the lighthouse by ice of the frozen lake, when it suddenly turns back to water, making Harry to swim to the lighthouse. He barely makes it (or doesn't whether player decides to do so), but gets saved by Cybil on the beach nonetheless. Cybil tries to clear the situation, saying that she looked at his file, stating that Harry Mason died 18 years ago in a car crash. She notes that if Harry wants the answers, they are waiting him in the lighthouse.

Lighthouse turns out to be a name for the Dr. Kaufmann's clinic, and as he gets to the end of it, we get in the chair for the therapy session again (Therapy session 8: End), where we learn that this whole time the patient was a grown-up Cheryl Mason. She denies the death of her dad, clinging to the memories of Harry, who was just Cheryl's illusion. Kaufmann tells Cheryl to move one and accept that Harry is just a man and in no way a hero. As Harry enters the room, the ending sequence starts.

As it was mentioned before, there are 8 ending, but as the UFO ending is a joke one, it has no importance in the context of research. The Encounter Ending reflects Cheryl's ability or disability to accept father's death.

- **Broken:** in this ending Cheryl accepts Harry's death, and, as they gaze at each other, Harry promises that he will always be with her, and they share a final goodbye;
- **Bearer of Guilt:** Cheryl refuses to forgive Harry and refrains from his comfort. Harry asks to forget him, freezes and crumbles.

- **Hero Forever:** Cheryl can't accept Harry's death and acts delusional, saying that father is a hero and her memories of him is all she has. They hug and cry. Despite Cheryl being happy, she still clings to her fantasies of father.

The Video Tape Ending is presented as a part of the home video and represent the true personality of Harry before his death.

- **Love Lost:** videotape shows how Harry and Dahlia stay by the car and peacefully prepare for one of them leaving. They explain to Cheryl that though mom and dad don't love each other anymore, they still love Cheryl no matter what.
- **Sleaze and Sirens:** videotape shows Harry with Michelle and Lisa as they discuss being in Harry's new book and having it dedicated to them, but Harry says that are dedications are to his wife and daughter, and they all laugh before falling back on the bed.
- **Wicked and Weak:** videotape shown Dahlia shouting at Harry, humiliating and beating him for being pathetic and useless. At one point Harry notices the camera and looks at it ashamed and silent.
- **Drunk Dad:** videotape shows Harry approaching the porch late at night, drunk. He demands Cheryl to bring him more beer, adding that it is the family that makes him drink.

Narrative Design and Invisible Agency

SH:SM is a survival horror game, that heavily relies on player's participation in the narrative part of the game, and is presented in a first-person mode and third-person mode, eventually making a separation between the player's perspective and player's avatar perspective. Unlike the other games of Silent Hill series, SH:SM has no combat mechanic, but fleeing, sneaking and evading.

Taking the SPP system as an analytical framework, the **system** in SH:SM is the game itself with interactive environment, shifting gameplay sequences and all the hardware behind the graphical output. For example, Wii console, that was initially chosen as a platform for the game, has the ability to track user's movements on the screen and physical movements (such as shaking or turning the console), was then used to solve puzzles by imitating the needed actions with the console (like turn, shake, etc.), use it as a phone and control user's flashlight (and track the attention of the player).

The protostory in this system is defined by the game itself and the sequences of therapy sessions, exploring Silent Hill and escaping "Nightmare" world, interface design, including use of the flashlight and control of the "eyesight", puzzle systems and physical interactions with the console in Wii version, movement mechanics and monster escaping, use of in-game phone and many others, that create the "space of potential narratives"¹⁹. Narrative design is presented by the unwrapping story with the fixed order of scenes and gameplay sections, but demonstrating its branching narrative in the changing details of each scene, overall exterior of the NPCs and places and different endings. In order to encourage players follow the game story, it uses narrative vectors, including the immediate results of agency and development of the plot as the player continues, plus notions regarding the psychological effect, that assume the replayability and self-reflection.

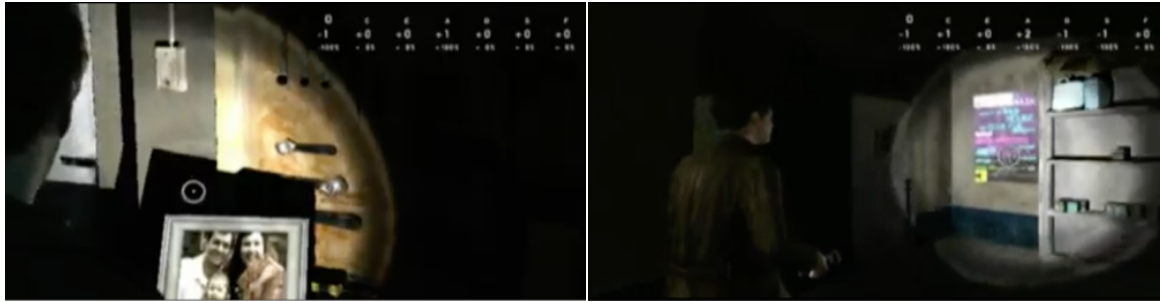
For SH:SM **process** is the interaction with the game, however, it isn't just a simple use of agency. Game system, as it was mentioned, tracks players attention, with which it applies points for specific scales (or Personal Inventory) for specific actions (see Figures 9 and 10)²⁰. PI resembles the aforementioned PaSSAGE system²¹, but, unlike it, PI doesn't concentrate on the adaptation of the story by learning the preferences of the player, as the flow of the story in SH:SM doesn't change, instead PI adapts the surroundings of the game and the final sequence to the personality of the player by studying their choices.

Despite the fact that the player is warned about game's ability to follow and profile the progress, it is anticipated that the "IA" influence is coming from the therapy sessions. However, testing, done by Dr. Kaufmann accounts for only 25% of the data, and the rest of the data, 75%, is taken from the player's actions in the game, observing which items are interesting to the player, how long do they spend looking at them, does the player rush through the story or are they investigating the places and look around for alternative routs. Game also pays attention to the interest of the player regarding looking for memos and facts, interest in sexual imagery or alcohol, how often does the player consult their map and other details.

¹⁹ Koenitz, Hartmut, "Towards a Specific Theory of Interactive Digital Narrative", *Interactive Digital Narrative*, edited by Hartmut Koenitz, Gabriele Ferri, Mads Haahr, Diğdem Sezen and Tonguç İbrahim Sezen, 91-105. New York: Routledge, 2015.

²⁰ Climax Studio, "Silent Hill Shattered Memories - Behind the Psych Profile", Facebook, April 23, 2013. <https://www.facebook.com/climaxstudios/videos/510825778976550>

²¹ Thue, Bulitko, Spetch, et al. "Interactive storytelling: A player modelling approach", 45.



Figures 9-10: The PI change throughout the game is made by simply looking at the photo or examining a poster

In the end the player gets the **product**, that has an extreme kind of uniqueness, correlated to the uniqueness of each players' personality. Apart of reaching the end of the main story and getting one of the endings, along with the end credits players would get their own psychological profile, thus increasing the value of the product by getting both the game and self-reflection experience.

The work of invisible agency is best analysed and evaluated with the framework of hermeneutic stripe, as it describes the connection of the player's actions, system reaction and player's response to the narrative outcome. In SH:SM every decision, movement and even simple glances have direct impact on game response and the player's experience. For example, if the player shows interest in sex, for example, answers no to "I have never cheated on my partner" in the first therapy session, scrutinises posters with half-naked women or peeps on a NPC changing clothes, the game will then direct the following narrative in coherence with this trait and provoke the player with even more sexualised content, that will lead the player to the **Sleaze and Sirens** ending.

But more than just having the immediate reaction, hermeneutic strip in SH:SM is also involved with the perception of the characters in the game. The player starts the game with Harry Mason, and they control him, see him, engage in dialogs using Harry as an avatar. On therapy sessions though we never see the patient, and the power of choosing answers and participating in tests is fully on the player. Most logically players will believe that the patient is Harry Mason too, but later in the game it is revealed that all this time it was Cheryl, his daughter, in Kaufmann's office, while all other sections were just the matter of her imagination, the one that the player shaped and altered.

So who is really the main hero of the game? It is not Harry Mason, as he is just a projection of Cheryl's memories and fantasies. It is not Cheryl, as the player doesn't consciously control her. The only person left is the player, and the game returns to this idea through the hermeneutic strip, directly achieving and reflexing player's actions, and

even openly giving the player's psychological profile in the end, as if this whole time the player was the patient of Dr. Kaufmann.

Morality Play and Player's Response

The game starts with the questions, regarding the morals of the player, social position and inner rules. Further in the game player faces a number of moral choices, like watching the woman, changing her clothes, or averting the eyes, choosing the guilty ones in the fictional story, offering the right pills or wrong ones, and other, shaping the game and narrative. Morality system in SH:SM is not presented as a simple "bad" or "good" path and it doesn't judge the player for any choice, but instead represents the consequences as they are.

In Morality Play framework SH:SM is the "toy", simulating a world with its own rules, story and characters, offering moral issues for the player to solve. SH:SM follows the original idea of Silent Hill series, putting emphasis on the darkness in people's minds more than just shooting and fighting monsters, therefore morality is a priority, and all the decisions in one way or another reflect the need to refer to the player's set of beliefs. Those morality choices are presented with the therapy sessions and gameplay sequences, and though some of them are clearly seen and talked through (like in Therapy session 5: Guilt), the majority of them are left for the player to interpret themselves.

The goal of the player, however, is not in any way affected by their choices: Harry still needs to find Cheryl, no matter what, but as Harry is just a projection, it turns out that the moral judgement lies not in the main game or even the final plot twist and ending, but rather in the global moral judgement of human actions. While Encounter Ending reflects the acceptance of the truth and cooperation with NPCs, Videotape Ending reflects specifically morality rules and player's conscious and unconscious action towards either morally accepted or morally rejected behaviour. And because there is no point of "no return" in regards of morality in the game, but overall analysis of the actions and player's response to them, moral problem is solved only after the very end of the game, where psychological profile of the player is presented.

One of the examples is the therapy session system. Its existence already exposes the player to the identification to the morality of the game. Dr. Kaufmann presents the player to the upcoming system of choices and follows to the elaboration by granting the player a questionnaire, where first action are taken, and, based on the player's answers, demonstrates the varying results of those answers, and encourages execution of the

gained knowledge for solving future tests. This way Morality Play framework in SH:SM demonstrates a fully working system of interaction with the player through moral choices and dilemmas in the narrative structure and system, that encourage the player to solve moral issues considering personal beliefs and traits.

Papers, Please!

PPI, developed by Lucas Pope in 2013, offers the players to take up a role of a border-crossing immigration officer in Arstotzka, dystopian totalitarian country, clearly inspired by the USSR regime. The gameplay is relatively simple and mostly consists of checking immigrants' passport and supporting documents for inconsistencies in the consistently growing set of rules with the number of instruments, choosing to deny entrance, approve it or detain person for committing crimes and causing trouble. For every accepted immigrant player gains credits, apart from bribes and gratitude payments. As the main hero of the game, nameless immigration officer has a family, he has to balance his finances to bring food and provide heat for his wife, mother-in-law and son.

PP! has 20 endings (excluding 4 immediate death endings) that depend on the number of choices made throughout the game. Only 3 endings are considered to be good ones, indicated by a unique soundtrack, while other 17 are considered as bad endings.

Plot

The main story game is divided in 31 days, the majority of which have either some events on the border, interesting encounters or a new rule adopted due to the ever-changing political situation. Except for the random people, going through your booth, all the events are scripted and appear on specific days and after the completion of needed requirements. Main events, affecting the story and the gameplay are usually displayed in the front page of the newspaper "The Truth of Arstotzka", that is demonstrated in the beginning of each day.

The story starts with the end of October labor lottery, where Inspector's name is pulled, and he gets assigned as a border inspector in Grestin border checkpoint, reopened after six years. Inspector moves to the Class 8 apartment from his home village with his family.



Figure 11: Gameplay space of the game. Character's stories are presented in the dialog bubbles.

With every day passing new restrictions or their lifting happens, adding the growing challenge to the gameplay. Some of the days get cut short because of the terrorist attacks. Later in the game player gets the ability to use weapons (a tranquilliser gun or a rifle) to help keeping peace at the border. On the 8th day the player for the first time meets a messenger of The Order of the EZIC Start, organisation, planning to free Arstotzka from the tyranny of its corrupted leaders by any means possible. During the game the player may receive up to 5 tasks from the Order, and depending on their completion and the amount of completed tasks the endings may differ. Inspector may also contact with the officials, inspecting his quality of work or offering cooperation.

Other than that, random people may have small stories behind them, like visiting children, looking for a better life or moving for the job opportunity. Visitors arrive from 9 neighbouring fictional states, and their goals may differ drastically: from diplomats, reporters and refugees to criminals and smugglers. Their stories are demonstrated through the dialogue system. However, sometimes people just hand over the documents silently.

Depending on the decisions, made throughout the game, financial state of the Inspector's family and his cooperation or non-cooperation with the Order, Inspector may become an anti-government agent of EZIC, stay a loyal servant of Arstotzka, flee the country, get fired, get imprisoned and/or die. Only three endings are considered to be good: **Snowier Pastures**, where Inspector and his whole family flee to Obristan, **Member of the Order**, in which EZIC gains power and Inspector moves with the family to a better apartment and becomes an agent, and **Glory to Arstotzka**, for which the player should not cooperate with EZIC or flee to Obristan, and he keeps his position.

Narrative Design and Invisible Agency

PP! has a branching narrative with the Gauntlet structure: it has a main line of story with the several branches, that either lead to alternative development of the story or endings. The **system** of PP is relatively simple: the player is offered with the booth, where people come and offer their documents, the player needs to check if those documents follow the rules and either approve visitor's documents, deny them for discrepancies or detain visitors, if they are suspected in criminal intentions. For that player uses a special mechanism, made of two stamps. Later in the game, as set of rules grows, player gets more interactive mechanics, like a third stamp for a reason of denial, scanner, printer and two guns. After each working day, limited in time, player gets \$5 for every approved person, penalties for mistakes if there were any, and occasionally bribes or financial support from third parties, and money can be spent on feeding and providing heat to family members, buying upgrades, moving to new apartments, etc. Player's agency is limited to receiving the documents, checking and returning them, and also distributing savings after the working day.

The protostory in this game can be described as a monotonous repetition of similar actions and interactions with game elements during working day and economic simulation after it, with the narrative design being both straightforward and flexible at the same time: scripted events combined with randomly generated stories, close to linear main story developments with several branches, open for exploration by the player. Narrative vectors, controlling the order of access to content is presented by the successful finish of the day, survival of the family members and other results of agency, that either open new branches or prevent from getting others.



Figure 12: Savings distribution between family members to meet their needs.

Depending on the player's decision and actions, additional storylines may appear and resolve, either changing the narrative or acting as secondary story branches. Other than choosing between approving and denying visitors, it involves secondary actions, like scanning, shooting and interacting with other objects. The **process** consists of the aforementioned in-game interaction, that then results in the completed game with one of 20 endings, which prompts for replayability and exploration of possible options of interaction with that game, and ends with the **product**, that may be different for every player depending on the development of the plot, actions and skills.

As it was mentioned, player's agency is limited, as gameplay abilities of the game are bounded; at the same time, player, though being just a small part of a governmental machine, has enough power to determine human lives and either engage in their issues and help solve them or refrains from any involvement and simply follow the protocols, offered by the game. But as soon as the player gets involved in some of the narrative branches, they are bound to follow it, and their inner choice defines the following game development. So the agency, presented in PP!, combines scripted and systemic choices, with the first ones triggering the player to either participate or not, and the second ones pursuing invisible agencies for the progression of the game and elaboration of one of then possible endings.

This involves the hermeneutic stripe framework, as the player's have no understanding of the future game possibilities when they start: little lore is given, and as some of the narrative branches of the game are closely related to the politics, lack of overall information about the world of the game creates uncertainty regarding the "rightness" of taken decisions.

For example, the main plot with The Order starts with the idea of fighting against current Arstotzka's government. For the player it is clear that Arstotzka is a country, based on Eastern European socialistic countries, and that some people appreciate it (for example, immigrants, noting that they move here for a better life), while others act against it. Anything else, including the motives of The Order, real state of things in the country and other details are too vague to get a rational and balanced opinion on whether the player should cooperate with The Order or not. However, if the player helps The Order even once, they trigger the alternative story development route, and based on created situation and game's reaction, they have to adapt to new challenges and rules. Harsh narrative of the game trains players to ignore pleads for the sake of your salary and Arstotzka, but inner moral rules may contradict this choice. This way game reinterprets player's reaction

and creates more situations, where specific narrative points make player's react in different ways.

"When a player is presented a choice with blatantly obvious means, he may become painfully aware of where the story is going either way. The choice could then be made out of efficiency rather than narrative concerns²²", but PP! doesn't offer an apparent choice or notes the player about the upcoming events. The whole game system creates the invisible agency, almost untraceable, where player's reaction to scripted events works for the arousal and increased moral attention, and invisible agencies seek to suppress it.

Morality Play and Player's Response

Morality in PP! is one of the key game elements, and whenever players rely on generally accepted moral norms or prefer dehumanised approach to individuals' problems, the world of PP! appears to be full of moral dilemmas and context, as it makes the player work with people, and some of them are in dire situation.

As the player is strongly connected to the identity of Inspector and wields power, enough to decide for the future of the country, moral focus of the game is a reflection of this identity and power. The player has the choice of developing this identity in terms of their loyalty to Arstotzka or just their own family, supporting revolution or keeping the precarious peace. As the loved ones of the Inspector are dependant on his success, it is irrational to risk your income for the strangers, but at the same time player may at one point appear on the other side of the booth (as in Snowier Pastures ending), and then he will be defenceless against the decision of the border checkpoint officer. Moral sensitivity of PP! consists of many small choices, arising from the systemic approach of the game, where the majority of the characters have little background, but have moral issues for the player to solve. Because there is no identification of the morality of decisions, players need to use their moral sensitivity to recognise the presence of moral content. The moral judgement of PP! is executed by the controlling organs of Arstotzka, a couple of NPCs and the state of the family, the only ones who can actually react to the decisions of the Inspector and suffer from them. But when player is given a choice of profit, moral action may distort, like passing the smuggler for the bribe.

With the growing set of rules and increasing tension between government and The Order, Arstotzka and other countries, Inspector and visitors, player has to choose

²² Sercan Şengün, "Silent Hill 2 and the Curious Case of Invisible Agency ", 6

between morality and gameplay success and balance it out. PP! creates moral issues along the narrative and encourages the player to act, even if it's wrong to break the rules for a woman in need or vice versa, it is wrong to ignore her for mere \$5, and the game deliberately makes the player choose one of these options, that rely exclusively on player's beliefs and norms.

Undertale

Just as with the PP!. Undertale cannot fit into the existing frameworks of a single genre or a single idea. Instead, it combines a number of philosophical questions, gameplay mechanics and narrative techniques to offer the players a unique experience of freedom in a fictional world.

Undertale was created by an independent developer Toby Fox in 2015, and combines open-world RPG game, bullet hell fightings, tricky dialog systems and puzzles. Game has a branching plot, depending on the actions, choices and curiosity of the player, as some content opens only after second or even third run of the game. One of the most prominent feature of the game are the numerous characters, that have strong personality and backstory, eagerly reacting to any action of the player. As the player initiates fights with some of them, they can either fight them to gain level, weapons and experience point, or subdue and spare.

Plot

Game starts with a tale about the times when there were two species on Earth: monsters and people. But one day a war broke out between them, in which the latter won. The seven greatest human mages locked the monsters underground with a Barrier spell. The only entrance to the Dungeon is a small hole in the mountain.

Many years after the end of the war, a human child, the avatar of the player, accidentally falls into this hole. Their gender or age is unknown, only the name can be later discovered if the player follows Pacifist route — Frisk. After waking up, Frisk meets Flowey, and the monster explains the main game mechanics to the hero (acting as a tutorial, thus breaking the forth wall) and offers to increase the "LV" (which is traditionally used for the indication of level number) or "LOVE" indicators, earning "EXP" points (traditionally indicating experience points) by killing monsters, and tricks the child into harming themselves.

When Flowey tries to kill the child by taking his soul, the hero is saved by Toriel, a goat-like monster. On the contrary, she trains the child to solve puzzles and solve conflicts in the dungeon, avoiding violence. She treats the hero with maternal love and wishes to protect him from Asgore Drimurr, the lord of the dungeon. The main task of the hero is to explore the world of monsters, get acquainted with its inhabitants and find a way out of this dungeon.

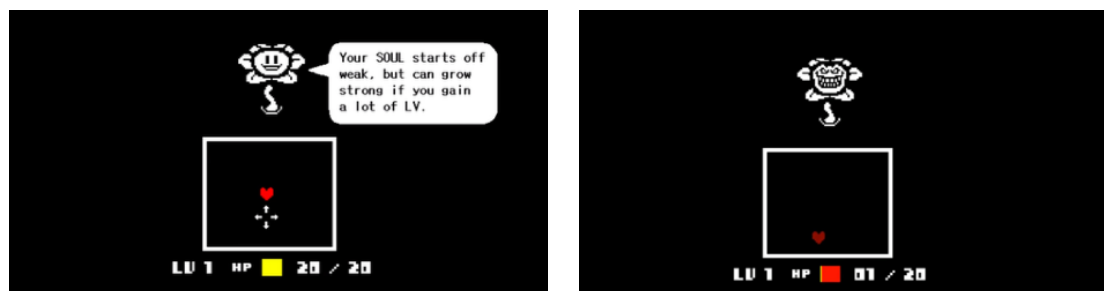


Figure 12-13: Flowey explains main mechanics and tricks the hero.

The hero leaves Toriel in search of the castle of Asgore, which contains a barrier, leading to the surface. During his adventures, the child meets other monsters, the most significant for the plot are Sans and Papyrus, the sentinel skeleton brothers of the Forest of Snowdin, Andine, the head of the royal guard, Alphys, the court scientist, and Mettaton, the TV presenter-robot created by Alphys. With some of the characters described above, the child has to engage in battle. The player can choose to kill them or show mercy, in the latter case, the child can make friends with them. As you progress, the hero gradually learns about the reasons for the outbreak of war between monsters and people and that, as it turned out, before the main hero appeared in the Underworld, other children happened to get there too.

Azriel, the son of Asgore and Toriel, befriended the first human child, who was also adopted by Asriel's parents. However, the child committed suicide by eating the poisonous flowers. When Azriel returned the child's body to the humans, they attacked him in a rage and mortally wounded him, after which Asgore declared war. Now Asgore is trying to break the barrier and get to the surface, but to do this, he needs to collect seven human souls, and to complete the plan, he lacks one soul, meaning that it must be the soul of the hero. The further development of the game depends on what decisions the player made when encountering monsters, the game identifies three main ways of developing the plot:

- **Neutral Route** is obtained if the player killed some monsters and spared others.

Main hero arrives at the castle of Asgore and learns that to cross the barrier he needs the soul of a monster and he enters into a fight with Asgore. Before that, Sans explains that the "LOVE" indicator is actually an indicator of the level of violence (**Level Of Violence**), and "EXP" is the execution points (**EXecution Points**), not the experience points, as the player might think. The hero fights Asgore again, but they are interrupted by Flowey, killing Asgore and stealing

human souls. With the help of the rebel souls, the hero defeats Flowey and appears in a room that has an exit to the surface. After the player passes through this exit and the credits pass, Sans calls him and tells him what happened to the dungeon after the human left. The epilogue has many variations depending on who the hero killed or spared.

- **True Pacifist Route** opens only if the player avoids killing any monsters. During the game the player needs to make friends with everyone, using various actions and in some cases flirting. By the end of the story, the hero learns that Flowey is the reincarnation of Azriel, created as part of Alphys' research. Before the supposed battle with Asgore, Toriel and the other monsters that the hero has befriended decide to intervene. However, Flowey sets up an ambush, taking all the human souls and monster souls to take on his old form and fight the hero. During the battle, the human reunites with his new friends, eventually winning. Azriel transforms into a child form, breaks the barrier, and expresses remorse to others before leaving. The hero falls unconscious and after waking up, finds himself in a circle of friends. Monsters open a passage to the surface and they unite with people. Toriel can become the hero's foster mother.
- **Genocide Route** opens if the player will kill absolutely all the monsters if possible. When the protagonist enters the "last corridor" in front of the castle of Asgore, Sans tries to stop him, but the child kills the skeleton and goes to the castle of Asgore. Flowey, in an attempt at redemption, kills Asgore, but is himself killed by the protagonist. A spell appears that gives the player a "choice", but destroys the world anyway.

Every ending in any Route has influence on the following replays of the games, with characters (specifically Flowey) remembering Frisk or recalling meeting him, some secrets can only be opened after the second run and the plot develops differently based on the choices of the main hero.

Narrative Design and Invisible Agency

The narrative of Undertale may be presented as a main line events, changing with the gamestyle of the player, with branches, access to which is gained depending on player's choices and previous playthroughs. Undertale offers the fighting and sparing systems, the latter relying on talking to the characters, learning their weaker spots or fulfilling their desires, sometimes in comedic ways. The more player learns about the

characters, the more idea they get about the state of the world and more access they gain to the secrets of the game.

The system in Undertale is composed of the code, defining the game process, like moving around locations, engaging in fights, solving puzzles and trading. The battle system has an interesting feature: in defending sequences player controls the heart of Frisk to avoid enemy projectiles, but after that sequence player gets the option of either striking back or "act", option which includes several options for communication with the monster, and that are used for peacefully resolve the fight by learning monster's individual needs through their dialogs amidst the fight. But "act" option is completely voluntary, and players that prefer fighting games and do not consider sparing options may never learn how to properly use "acting" system. As the player progresses, the harder defending sequences get, increasing the importance of growing skill and mechanics knowledge. Other systematic interactions include use of items, which can be either offensive, like weapons, defensive, like armour, or be used to heal or interact with the monsters. If the player kills a monster, they gain LOVE and EXP, that increase their offensive indicators, but shift the game narrative at the same time.



Figure 14: Act mechanic inside the fighting sequence.

The protostory in Undertale's system is the sequences of world exploration, dialogs and fighting scenes, all of which change in dependance with the player's actions: the more player kills, less dialog options will be available, fighting will be significantly harder and exploration will be limited. Player is controlled just by any movement control option (like thumbsticks or WASD buttons) and confirm/exit options (like buttons on a gamepad or keys on a keyboard), with the interface reminding JRPG: rectangle menus, gaining access to saving game, inventory or main menu. The narrative design is flexible as it changes with the main hero using violence or escaping it, and with the growing number of victims some options for story development become unavailable, while others

appear. Narrative vectors in Undertale are presented by quest system, that guide the player towards their next goal, unexplored parts of the map or initiate interaction with the NPCs, and are supported by the emerging fights with the monsters, availability of which point to the narrative development direction.

Undertale's process consists of interactions with the game process, including fighting sequences and exploration, the progress of which greatly depends of the player's playstyle. Player goes through the narrative and studies the world around them, that may result in three routes: neutral, pacifist and genocide, with the first one drastically diverse based on the monsters player killed or befriended. The product is a unique playthrough, that depends on player's choices and habits of some sort.

But why the habits? Undertale gives you a choice from the very beginning — to kill the monsters that player meets on the way, or try to negotiate with them. During a short training session, the game focuses several times on the fact that you can try to talk to monsters, and teaches you under what conditions the player can "spare" the enemy. However, as many games just suggest killing monsters instead of negotiating them, some players will follow the familiar route of killing enemies on their way, even if they feel no compassion towards this playstyle²³. The hermeneutic strip reflects that kind of player-game interaction: if the player strives for the peaceful route, the system will reply and offer more friendly options and ease the gameplay to focus on the relationship development, and if player seeks for challenge and fight, it will increase the difficulty of fighting sequences and narrow the narrative to this specific purpose.

As both resolution mechanics coexist, and the player can use them both for some extent, invisible agency manifests itself in assessing the gameplay of the player and changing the ending, that would correspond with their intentions and remind of the "mistakes": for example, if the player kills selectively — just for the sake of experimentation, the remaining characters will remind him of the crimes committed. Undertale does not try to justify evil or good, does not hide anything and does not keep it until the very end, but uses invisible agency to sustain the environment that the player wants or intentionally created.

²³ Nathan Greyson, "Fantastic New RPG Lets You Talk Your Way Out Of Every Battle", Kotaku, September 17, 2015, <https://kotaku.com/fantastic-new-rpg-lets-you-talk-your-way-out-of-every-b-1731237446>

Morality Play and Player's Response

The moral dilemma of the game offered as soon as the player meets Flowey. NPC shows the player that the world around them is welcoming and friendly, and then betrays the player next second, rooting the idea of distrust and the fact, that the player meets monsters. But as Toriel arrives and saves the player, they are shown that alternative ways of dealing with enemies exist. And as the player fights Toriel, he meets the first morality choice: leave by killing Toriel or try your best to convince her let the player go.

In Morality Play framework of Undertale, unlike the previous cases, there is a morality meter, but it relies mostly on subjective views of the monsters, where killing their friends and loved ones is obviously bad, but that cannot be addressed the same way from human side. The moral focus of the game lies specifically in this difference, as for the player main goal is to leave the underworld, monsters wish to survive, and they use common morals to note the player about "good" and "bad" decisions. But as the player may wish to pursue their own goals, moral action suggests that no specific skills needed for solving moral issues apart from player's intentions.

One of examples is that same fight with Toriel. Player goes through identification, elaboration, procedural and execution of the morality system and fighting in the game, and as the player has the goal of leaving Toriel's house, they engage in a fight. Toriel doesn't hurt the player, no matter how often she attacks. The player can easily kill her and pursue on their adventure, or struggle more to let Toriel live. No skills are needed for this, but player's determination and curiosity can play a crucial role in encounter.

This scheme applies to the whole game, and player's response to each encounter determine the development of the story and the way world reacts to the player, either making the players regret their choices, enjoy the company of new friends or exploit the power they achieved.

Chapter 3 — Inspection of the Invisible Agencies Potential

As the three cases of games, using invisible agency, were studied and analysed with the use of SPP and Morality Play frameworks, this chapter uses the gained information to evaluate the influence of IA on the gameplay experience and possible integration into other game systems for increased narrative experience.

Possible Implementation of Invisible Agencies to Other Games

In the three cases, studied before, all of them have IA, that affects the narrative development and perception of the game, however, each case uses IA to varying degrees.

While SH:SM or Undertale rely on the subconscious actions of the player and lets them shape the world and narrative according to their morality or preferences, PP! relies on IA only when it comes to the development of alternative story branches. But one feature that unites this game is that players are bound to continue until the end of the game, and only when they replay it in a way different, from their first playthrough, they learn that another option, story branch or narrative development exists. IA is barely traceable, and when first initiated, it doesn't announce its presence, but discreetly adapts the game to the player's expectations and playstyle, though always hinting that other outcomes and endings are possible, if gamestyle is changed.

In order to understand, how IA can be implemented to other games, let's imagine how the cases, studied in this paper, would work without IA. For example, SH:SM could have a menu with the PI, that would change as the player acts, explores the world, makes a decision or talks to the NPCs. After every change the notion would appear and remind the player that his indicators are renewed and some scenes were changed due to the new numbers. By the end of the game the player will have a clear understanding of the possible outcome, their shortcomings and imperfections, and constantly reminded about the influence of some actions. It may be an interesting game, but with the blatant choice mechanic like this any kind of intrigue or subconscious choice system disappears, as the player, aware of the effect their actions have, will not act freely and naturally, but work towards the "best" ending and narrative development. Working with IA meant to "...read

player's intentions and reactions to the storyline, sometimes without his consent — thus never having the player make an obvious choice. By this way the direction of the narration becomes extremely personal — and almost subconscious. Then the final impact of the overall experience becomes deeply imposing and sometimes even a bit disturbing.²⁴

With the example of Undertale apparent choices instead of IA may be presented as the notions regarding the immediate effect the player has made, like "Alphys will remember that" or "The merchant won't sell you anything", that would immediately nod towards the chosen route and ruin the self-reflective effect and narrative build-up. Just as in SH:SM, in Undertale choices have long-lasting effect, that is subject to change with the following actions of the player, but if they are apparent, game risks to lose the player's uniqueness in the narrative.

PP! demonstrates a limited use of IA, but it still plays significant role in endings distribution and long-lasting moral effect on the player. If Lucas Pope preferred apparent choices, then whenever player met the representative of The Order for the first time, they would be notified about the changes to the narrative, like "some of the endings will be unavailable after helping EZIC", and, again, it would distance the game from the player and decrease player's subconscious response to the arising morality questions.

Nevertheless, due to the specific requirements of the IA coding, some downsides may arise. For example, in SH:SM one of the possible ways to trigger IA is to closely watch at some objects. As it is proposed in the "Lecture Notes on Interactive Storytelling", an obvious problem in IA is that the player is not aware of the effect their actions have, because the meaning of it is not directly communicated, so in the situation where player doesn't pause the game or outside interruption happens, game system may still count the point of current interest as a player's intention, though it is not so.²⁵ Another problem arises with the complexity of player's actions, that may not follow the logic of IA, such as increased curiosity of the player, who will look at all the objects just for the aesthetic reasons or simply out of research interest (looking for easter eggs, for example). Though those actions can also be counted as subconscious, the motivation behind them is not the lustfulness, alcoholism or distrustfulness, but simple curiosity.

²⁴ Sercan Şengün, "Silent Hill 2 and the Curious Case of Invisible Agency ", 6

²⁵ Jouni Smed, Tomi 'bgt' Suovuo, Natasha Trygg, Petter Skult, "Lecture Notes on Interactive Storytelling", March 2019, https://www.researchgate.net/publication/332013128_Lecture_Notes_on_Interactive_Storytelling

With that in mind, it is still possible to note that IA is a great addition to the arsenal of game mechanics. If carefully elaborated, it can add the deeper story development and consistency to the narrative design, because morality in games suggest consistency in your choices, that can be disrupted when game uses apparent meters for demonstrating your progress. For example, in *Detroit: Become Human* (2018) a branching narrative is presented, and player can clearly see which choices lead to which narrative branches. However, if IA is applied, a deeper narrative experience could have been achieved: players won't know how their reaction to events will affect the development of the plot, and, for example, their overall attitude to the rules for androids (prone to following or breaking them) would affect NPCs reactions and choice of ending. The same game will have a different approach, deeper moral choices and more precisely assessment of the idea of humanity in androids.

Transformation of Hermeneutic Strip

In Methodology part it was elaborated that "hermeneutic strip shows the correlation and dependence of the freedom of using agency and player's interpretation of the gained narrative. In other words, hermeneutic strip refers to the way player reacts to the reaction of the system, reacting to the player, and this loop continues until the final product of the SPP system is released". As IA and the processes it participates in are hidden from the player, players cannot react directly to the reaction of the system, as they are unable to calculate whether there was a correlation between their actions and changes in the system or not. So hermeneutic strip system gains a new dimension of agency dependence — the delayed reaction of the player to the reaction to the system, as the actual reaction of the system is later learned in other playthroughs with different approach to the same narrative point.

Does it mean that proposed system of hermeneutic strip is irrelevant in case of IA? Though it may need more work and additional development, hermeneutic system still works in the context of SPP model, but with the IA as a possible mechanic, notes regarding delayed players' interpretation of the system should be used.

Chapter 4 – Conclusion

After studying the IA and comparing its options and effects with the apparent agencies and blatant choices, it is clear that IA as a concept increases the narrative experience by granting deeper development of narrative in the game and increasing involvement of the player through subtle use of their subconscious preferences and morality, that can create a new level of narrative design and expand the concept of hermeneutic strip.

IA can be implemented with different goals and in different capacity, to partially control the story development or to drastically change every detail of the narrative, be more influential or base on morality systems. And though use of IA has its difficulties and challenges, the effects that can be gained by the use of IA can "forsake blatant choice mechanics for subtle methods of reading the reactions and intentions of the [player]²⁶". But as interesting IA is, as rare it is used in games, as it relies on a complex structure of interactions, that are applicable only in limited spaces. For IA to work, systemic approach and branching narratives are essential, as without systemic approach IA will have no ability to emerge in a gameplay, and without the option of branching narrative it will have no use due to the lack of elements to change.

The player's response is then gaining more feeling of freedom and actual importance, that is crucial for the successful IDN and player involvement in the story and opens more options for developing a psychologically backed experiences. When the player feels consistent morality of the game, coherence between choices and system reaction and immediate influence of the choices, narrative feels more realistic and structured. IA provides these qualities and grants players with the challenge to see, what other outcomes can appear, adding a new depth to the replayability.

²⁶ Sercan Şengün, "Silent Hill 2 and the Curious Case of Invisible Agency ", 6

References:

- 1 Climax Studio, "Silent Hill Shattered Memories - Behind the Psych Profile", Facebook, April 23, 2013.
<https://www.facebook.com/climaxstudios/videos/510825778976550>
- 2 Formosa, Paul & Ryan, Malcolm & Staines, Dan. (2016). Papers, Please and the systemic approach to engaging ethical expertise in videogames. Ethics and Information Technology, 5, https://www.researchgate.net/publication/305344662_Papers_Please_and_the_systemic_approach_to_engaging_ethical_expertise_in_videogames
- 3 Harrell, D. & Zhu, Jichen. (2009). Agency Play: Dimensions of Agency for Interactive Narrative Design. 44-52, https://www.researchgate.net/publication/221250432_Agency_Play_Dimensions_of_Agency_for_Interactive_Narrative_Design
- 4 H. Koenitz and M. P. Eladhari, "Challenges of IDN research and teaching," in Interactive Storytelling, R. E. Cardona-Rivera, A. Sullivan, and R. M. Young, Eds. Cham: Springer International Publishing, 2019, pp. 26–39
https://www.researchgate.net/publication/337187136_Challenges_of_IDN_Research_and_Teaching
- 5 James Churchill, "Feature: The Making Of Silent Hill: Shattered Memories", Nintendolife, August 26, 2016, https://www.nintendolife.com/news/2016/08/feature_the_making_of_silent_hill_shattered_memories
- 6 James Portnow, "Opinion: Mother Theresa Or Hitler? Designing for Ambiguous Moral Choice", Gamasutra, July 9, 2009, https://www.gamasutra.com/php-bin/news_index.php?story=24128
- 7 Jouni Smed, Tomi 'bgt' Suovuo, Natasha Trygg, Petter Skult, "Lecture Notes on Interactive Storytelling", March 2019, https://www.researchgate.net/publication/332013128_Lecture_Notes_on_Interactive_Storytelling
- 8 Koenitz, Hartmut & Palosaari Eladhari, Mirjam & Louchart, Sandy & Nack, Frank. (2020). INDCOR white paper 1: A shared vocabulary for IDN (Interactive Digital Narratives). pp 11-14, https://www.researchgate.net/publication/344780136_INDCOR_white_paper_1_A_shared_vocabulary_for_IDN_Interactive_Digital_Narratives
- 9 "Konami Gamers Night 09: Interview With Sam Barlow, Mark Simmons And Tomm Hulett (IGN)", Silent Hill Memories, April 9, 2009, https://www.silenthillmemories.net/creators/interviews/2009.04.09_barlow_simmons_hulett_ign_en.htm
- 10 Melenson, J. (2010). The Axis of Good and Evil. In K. Schrier (Ed.), Designing Games for Ethics (pp. 57-71).
<https://www.igi-global.com/chapter/axis-good-evil/50731>
- 11 Nathan Greyson, "Fantastic New RPG Lets You Talk Your Way Out Of Every Battle", Kotaku, September 17, 2015, <https://kotaku.com/fantastic-new-rpg-lets-you-talk-your-way-out-of-every-b-1731237446>

- 12 Sercan, Şengün. "Silent Hill 2 and the Curious Case of Invisible Agency". Conference paper, Istanbul Bilgi University, 2013, https://www.researchgate.net/publication/261873609_Silent_Hill_2_and_the_Curious_Case_of_Invisible_Agency
- 13 Staines, D., Formosa, P. and Ryan, M., 2019. Morality play: a model for developing games of moral expertise. Games and Culture, 14(4), pp.410-429, <https://philpapers.org/archive/STAMPA-5.pdf>
- 14 Tancred, Nicoletta & McMahon, Nicole & Wyeth, Peta & Turkay, Selen. (2018). Player Choices, Game Endings and the Design of Moral Dilemmas in Games. 627-636, https://www.researchgate.net/publication/328546028_Player_Choices_Game_Endings_and_the_Design_of_Moral_Dilemmas_in_Games
- 15 Thue D, Bulitko V, Spetch M, et al. Interactive storytelling: A player modelling approach. In: Proceedings of the 3rd artificial intelligence and interactive digital entertainment conference, 2007, pp. 43–48, https://www.researchgate.net/publication/220978472_Interactive_Storytelling_A_Player_Modelling_Approach
- 16 Zagal, J.P. (2011) "Ethical Reasoning and Reflection as Supported by Videogames", Schrier, K. & Gibson, D. (Eds), Designing Games for Ethics: Models, Techniques and Frameworks, pp. 19-35, https://www.researchgate.net/publication/291193440_Ethical_Reasoning_and_Reflection_as_Supported_by_Single-Player_Videogames

Figure References:

- Figure 1-2 Tancred, Nicoletta & McMahon, Nicole & Wyeth, Peta & Turkay, Selen. (2018). Player Choices, Game Endings and the Design of Moral Dilemmas in Games. 627-636.
https://www.researchgate.net/publication/328546028_Player_Choices_Game_Endings_and_the_Design_of_Moral_Dilemmas_in_Games
- Figure 3 *Star Wars: Knights of the Old Republic*, PC version. Bioware, 2014. (Screenshot)
- Figure 4 Koenitz, Hartmut & Palosaari Eladhari, Mirjam & Louchart, Sandy & Nack, Frank. (2020). INDCOR white paper 1: A shared vocabulary for IDN (Interactive Digital Narratives). pp 11-14
https://www.researchgate.net/publication/344780136_INDCOR_white_paper_1_A_shared_vocabulary_for_IDN_Interactive_Digital_Narratives
- Figure 5 Roth, Christian, Tom van Nuenen and Hartmut Koenitz. "Ludonarrative Hermeneutics: A Way out and the Narrative Paradox." In *Interactive Storytelling: 11th International Conference on Interactive Digital Storytelling, ICIDS 2018, Dublin, Ireland, December 5–8, 2018, Proceedings*, edited by Rebecca Rouse, Hartmut Koenitz and Mads Haahr, 93-106. Cham: Springer, 2018. (Page 98).
- Figure 6-10 *Silent Hill: Shattered Memories*, Wii version. Konami, 2009. (Screenshots)
- Figure 11-12 *Papers, Please!*, PC version. Lucas Pope, 2013. (Screenshots)
- Figure 13-15 *Undertale*, PC version. Toby Fox, 2015. (Screenshots)