SAVING THE GAME IS SHAPING THE GAME

Defining and Understanding the Save Mechanic

Abstract

Saving is omnipresent in games and the mechanic with which to do so can provide new insights and possibilities. In this paper, the save mechanic will be classified and examined, providing the building blocks for further research. This paper will use Lankoski & Björk's formal analysis of gameplay as its core method, and will be providing a typology for saving in games (Lanskoski & Björk, 2015). The aim is to examine how death, time and the invisibility of saving are connected to the saving mechanic, and what role the mechanic plays in the procedural rhetoric. Using concepts from Consalvo & Dutton such as interaction mapping, and Sicart's theory on classifications of mechanics, among other renowned researchers, this paper will provide an in-depth discussion into the saving mechanic (Consalvo & Dutton, 2006, Sicart, 2008). The game *Undertale* will function as an example to show how the saving mechanic can influence the narrative, and highlight how broad the influence is of this basic mechanic in games. By performing a case study on *Undertale*, a game that uses this mechanic in a novel way supplemented by the method of play by Aarseth and Van Vught & Glas, this paper will examine how the saving mechanic can shape the game (Aarseth, 2003, Van Vught & Glas, 2017).

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CHAPTER 1: INTRODUCTION

* The ability to play God!
* The ability to "SAVE."

- Flowey, from *Undertale*

1.1 | A BRIEF HISTORY OF SAVING

In the earliest iterations of games, saving was impossible. This was due to the platform capabilities of the time; a computer had limited memory and processing power, and could only play the simplest of games. These games also did not require a save, as the games were simple, they were short and were meant to be played in quick, solo sessions. Later, when gaming platforms expanded in their capabilities, so did games, and as the games grew, there was a need for the player to be able to quit the game while keeping their progress intact (Moran, 2010; web). This was where the concept of save files was invented, with one of its earliest shapes being save codes. These save codes would have to be written down and filled back in manually, although this type of saving made it fairly easy to share ("The Next Generation", 1996; p. 38). This meant being able to save all the progress made up to the point of saving it, creating a file that can be accessed when starting play, and nowadays often during play too. Saving has become a fundamental to games, to a point where no one seems to question its existence anymore. Often, it is made to be as invisible as possible, however that is not always the case (Moran, 2010; web).

Mia Consalvo & Nathan Dutton call to attention the numerous of mechanics, although they do not name them as such, that surface in almost every game, such as onscreen menus, health gauges or information screens. They explain that "[a]s of yet, there has been no clear and careful elaboration of a systematic method for examining how these various elements operate singly and in conjunction to constitute the 'text' of a game, and what the larger significance of that game might then be" (Consalvo & Dutton, 2006; web). Consalvo & Dutton see these elements and agree that there has been a lack of definition for such elements. In this paper, this would apply to the saving and reloading mechanic.

The save mechanic is in nearly all games, and yet has received little attention. It is however, a vital mechanic in almost every game; without it, most games would become unplayable. As such, it does have a great influence on the player experience and expectations. With the save mechanic, actions are reversible, a choice merely temporary. However, when a game incorporates its save mechanic into its narrative, it can have great consequences for the

player experience; think of *Dark Souls*, where one can only save at certain moments, when the characters are, indeed save. Or survival modes that have been added to games such as *Fallout 4* and *Rise of the Tomb Raider*, which deliberately changes the saving mechanic from being able to save anywhere at any time, to only certain places and times, making a save point something to strive towards. The save mechanic in games can do a lot for the experience of a game, and nearly every game is subject to it. As such, it is a central and vital mechanic and yet often neglected, and it warrants a good look as it has shaped games and possibilities for ages. *Undertale* is one such game that attempts to address the save mechanic and incorporates it into their narrative. In several instances in the game, the player is confronted with certain characters that know the player character does not die, can turn back time and even prevent certain events from happening. Flowey is one such character, and tries to persuade the player character to turn that power to certain ends. In this paper, I aim to create a deeper understanding of the saving mechanic and what it can do to the experience of game. To achieve this, I will use *Undertale* as the window through which to analyse how the saving mechanic is shaping the game.

1.2 | RESEARCH QUESTION

The main research question of this paper will be the following: How does the saving mechanic interact with the narrative in games, using an analysis of the game *Undertale* to examine the possibilities?

To understand how exactly, I will subdivide my research into the following questions:

SQ1: What is the definition of the saving mechanic and how has its history shaped the current expectations of the players towards it?

SQ2: How does the save mechanic effect player perception on time, causality and death in games?

SQ3: What role does the save mechanic play in the procedural rhetoric in *Undertale*?

1.3 | OVERVIEW OF THE THEORETICAL FRAMEWORK

First, to define the save mechanic and it role in shaping games, I will draw on the research done into defining game mechanics. For starters, Consalvo & Dutton stress the importance of game mechanics and research into them. They mark up a few questions that will be relevant to my own research. For example, one of the questions delves into the how the save mechanism is integrated into the game world, and whether the mechanic provides consistency or breaches it, or if there are any limitations. These critical points of view will help me analyse the saving mechanic and allow for a deeper understanding. Although many of their initial theory seems to focus on the superficial qualities of the elements mentioned within the game, they do note that looking at these seemingly insignificant items, it can "help us to see what information is privileged (…) and what information is absent or difficult to find" (Consalvo & Dutton, 2006; web). Other work I will be drawing upon is *Fundamentals of Game Design* by Ernest Adams, and Miguel Sicart's article "Defining Game Mechanics" in which he proposes ways to define these mechanics (Adams, Ernest, 2014, Sicart, 2008). I will draw mainly upon these three to structure how the save mechanic would fit into the overarching discourse surrounding game mechanics.

Secondly, to understand what saving does to the player experience, I will draw upon the works of, among others, Jesper Juul and namely his article "Time to Play: An Introduction of Game Temporality", as well as Koskimaa's work "Playing with Time in Digital Ficiton", discussing how time affects game and where the save mechanic would fit in here (Juul, 2014, Koskimaa, 2015). Furthermore, to discuss how the saving mechanic has become such an integrated part of games and, as I argue, an invisible game mechanic, I will combine discussions on affordances as proposed by Norman, and how that could explain the view of the save mechanic in games. Now, affordances as described by Norman are generally applied to software and technical object, but has not often been applied to game mechanics (Norman, 1988). I argue Norman's theory of affordances can be applied to games, as they are form of software, and can lead to new insights and in this case providing a new look on the save mechanic. I will do so combining works of Soegaard and Zagal, amongst others (Soegaard, 2015, Zagal, 2010).

Finally, to show what the save mechanic can do for a game, its narrative and its experience, I will perform a case study on *Undertale*, examining how previously discussed notions are apparent or overturned in this game, and what the role of the save mechanic is (Lankoski & Björk, 2015). Undertale is an uncommon game, which has deliberately used the

save mechanic as part of the procedural rhetoric of the game. In short, this game will showcase a more reflective look into the save mechanic than a game using a more standard, common use of the mechanic.

1.4 | METHOD

For the first chapter, I aim to provide a typology with which to analyse the save mechanic, and to do so I will first provide an in-depth look into this mechanic, providing a solid definition and developing a base from which further research can be done. Here, I will create classifications for types of saving to create said tools for further examination. This will be based on Lankoski & Björk's theory on formal analysis, which they define as research where "an artifact and its specific elements are examined closely, and the relations of the elements are described in detail" (Lankoski & Björk, 2015; p.23). This will be the main method for this paper. In this paper, I aim to use this method to examine the save mechanic as such an artefact. To do this, I will perform a textual analysis on research done on fringe subjects, such as research into the shape of time in games and general game mechanics, drawing on well-known game studies scholars such as Jesper Juul. As such, theories and research will be discussed in the chapters below in greater length; this way, I hope to provide the reader with the ability to search and read the appropriate theories without having to double check back to a general theoretical framework to accommodate any further research based of off this paper. As Lankoski & Björk argue, formal analysis is a method "provides an understanding of the game system that can in a later step be used for further analysis", and this is exactly what I aim to achieve with this paper (Lankoski & Björk, 2015; p. 23).

In the following chapter, I will research how the save mechanic can shape the experience of the player and how it interacts with the narrative. To do so, I will analyse the mechanic according to Consalvo & Dutton's method of analysing game mechanics (Consalvo & Dutton, 2006). Using that in conjunction with the previous method will help create a greater understanding of the topic, and builds on academic research. This paper will add to the academic bases already in place by adding specific nuances and terms to the formal analysis. This will be achieved by using research done into the experience of various instances that have direct ties to the save mechanic, in this case the invisibility of the mechanic, the experience of time in games and the experience of death. Here I will use

research done on those subjects to connect that to the save mechanic and how the save mechanic shapes that experience.

Finally, I will perform a case study on one game, *Undertale*, to examine how the save mechanic interacts with the experience and narrative there. This will examine the game's use of the save mechanic in its procedural rhetoric as described by Ian Bogost, where the procedural rhetoric is "the art of using processes persuasively", in this case the use of the save mechanic in the narrative (Bogost, 2010; p.3). For this, I use my own experience with the game, having played multiple playthroughs and completed every major narrative possibility. This includes Neutral, Pacifist, and Genocide playthroughs, these will be discussed at greater length in the case study chapter. This method of research is supported by Aarseth's article on the methodology of examining and researching games, where according to him there are three ways of approaching a game for research: the first studying the design and the mechanics, the second observing others playing or reading their reaction, and the third being playing the game first-hand. He supposes that while "all methods are valid, the third way is clearly the best, especially if combined with the other two" (Aarseth, 2003; p. 3.). Therefore, I combine my own player experience with an extensive research into its narrative, using the information from the wiki and its connection to the save mechanic, and then examine the ramifications according to the research described in the previous two chapters.

Now Van Vught and Glas raise questions regarding the position of the researcher as player, most notably in their consideration of play and context (Van Vught & Glas, 2017). To answer some of those questions, and to further elaborate on my position and context as to clarify my stance as both the researcher and the player, I will briefly address the forms of play I employed while researching this game and from what context I approached the game. Van Vught and Glas argue that playing according to the formal components presented by the game, and taking the "route of least resistance" is what they term "instrumental play" (Van Vught & Glas, 2017; p. 6). According to them, if a researcher wishes to "focus on the formal characteristics of a game and the way they encourage certain play responses, [they] need to fulfil those expectations" (Van Vught & Glas, 2017; p. 6). In regards to my research, this applies most to the first two playthroughs I completed, the Neutral and the Pacifist, as the game will repeatedly offer the ability to grant mercy to the monsters, to spare them rather than to kill them, and will warn the player to stop their actions if they are on the Genocide route. Although it can be argued that this particular game confuses the player by granting them two distinct ways to deal with encounters, where one is the more traditional way of

attacking and killing them. This leads to the second part of their research, namely the context from which the player approaches the game. In this case, *Undertale* engages with the level of literacy about games the player has. The more familiar with games the player is, the more the mechanics and the questions they raise in the narrative become apparent, as stated before, the attacking and killing monsters is generally the way to continue from encounters in games, but in *Undertale* another option is added, and by the narrative it is designed to be the morally superior one, as I will elaborate on further. To surmise, as a researcher and player I approached this game with the intent on completing three distinct routes that the game offers, the first two mostly adhering to the instrumental and implied play as discussed by Aarseth and Van Vught & Glas, and the third broaching closer to free play, although as will be discussed the game reacts on a player who embarks on a Genocide route. Furthermore, to put myself in context, I am a player with relatively broad knowledge of games and as such recognise where *Undertale* adheres or subverts certain perceived standards in games. In all, I aim to show how this particular mechanic, abundant in its presence in games but often designed to be invisible, can be used within the rhetoric of the game, highlighting the effects the save mechanic can have and how some are subverted this way.

CORPUS

To examine the potential of the saving mechanic, I will perform a case study on the game *Undertale*, which uses this mechanic as a narrative device. As this paper will show, saving and reloading is a mechanic found in nearly any game nowadays, but there are few games that do something revolutionary with the mechanic, often it is tucked away as invisible as possible, and completely ignored in the narrative. Recently there has been a shift in this attitude, as more games are starting to play with the save and reload mechanic, such as integrating it into either gameplay, such as shooting boxes in *I Wanna Be The Guy: The Movie: The Game* or using a visual shape that fits the setting, such as audio cassettes in *Grand Theft Auto: Vice City* which takes place during the mid-1980s. It brings a new addition to the aesthetic vocabulary of games and has the potential to shape future games (Hayward, 2005; web). It is possible, and I would argue highly likely, that more games will incorporate at least the shape of their save mechanic into the setting of the game. Yet, saving is something unique to games and it does quite directly in many cases interact with the narrative, albeit in a meta way. However, in *Undertale*, this so-called power is actually

addressed in-game and becomes an important plot point throughout the game's narrative. I will examine how *Undertale* is structured, what types of saving *Undertale* uses, and what the narrative is about, according to my earlier research. With this, the effect of the save mechanic will become apparent and how this method of researching a game on how it handles the save mechanic will allow for new insights.

1.5 | ACADEMIC RELEVANCE

Few scholars have looked at game mechanics, and fewer still look at mechanics that have seemingly become normal, resulting in few papers with explicit focus on the save game mechanic despite its abundant presence in all games. Mia Consalvo & Nathan Dutton for example explain the importance of game mechanics and research into them, as does Migual Sicart, but they do not focus on the saving mechanic (Consalvo & Dutton, 2006; web, Sicart, 2008; web). Juul has looked at how saving interacts with the player's game time, but not quite on how it affects the narrative itself (Juul, 2004; web). Not only can they tell much on the shape of video games, but indeed the ethics and morality involved in them. By examining one of them, I hope to show how these standardised mechanics can have great influence Ideally, this paper can serve as a starting ground for further research, where other scholars can use the tools I provide to examine the save mechanic and how it interacts with narrative in different games. Furthermore, virtually no research has been done as of yet into *Undertale*, which utilises this mechanic in its narrative. There has been a paper on the ambiguity of the main character's gender by at that time student Robert L. Quinn, and more non-academic articles discussing pieces of the game (Quinn, 2015; web, Cobbett, 2015; web, "Undertale and Social Justice Themes"). It is here my paper will attempt to amend the gap, and closely analyse the save mechanic and how it interacts with narrative in games. I will draw upon papers that talk about mechanics and propose ways to research them and adapt them to research the saving mechanic, alongside with methods of analysing games. This will provide a solid base for further research, giving other scholars a base with which to examine other games according to their use of the save mechanic.

DEFINING AND CATEGORISING

2.1 THE THEORY OF SAVING IN GAMES

In "Defining Game Mechanics", Miguel Sicart attempts to redefine game mechanics, most notably in its relation to rules and the challenges that come with it. He delves into the research already done about game mechanics and its previous definitions, and concludes a better, cleaner, and hopefully unified term is needed. He starts with defining game mechanics as methods that are "invoked by agents, [and] designed for interaction with the game state" (Sicart, 2008; web). In the end, he defines game mechanics as "discrete units that can be created, analysed and put in relation to others" and that "for any agent in a game, the mechanics is everything that affords agency in the game world" (Sicart, 2008; web). He provides further divisions into sub-categories of core, primary, and secondary mechanics. Saving and reloading is an integral mechanic in nearly every game found, and as such Sicart's research will be helpful in defining where exactly this mechanic would stand in the broader scope of game mechanics.

Now the more problematic part of his article is the sub-categories of core, primary and secondary mechanics. As he explains, these categories come from the design literature around games, and have been generally termed as mechanics that "describe the actions a player repeatedly performs" (Sicart, 2008; web). Saving could well fall under this description, although considering the different ways one can save the game, especially automatic, there is an argument to be made that the player does not necessarily perform this action. Sicart feels this falls short in precision and adds that for a game mechanic to be considered core, it should not only be a repeated action, but also one that is "used by agents to achieve a systemically rewarded end-game state". Although I agree that the previous definition is lacking, I do not agree that Sicart's addition is particularly helpful. It is open to heavy subjectivity and more questions, what is defined as strictly systemically rewarding or what if a player is not playing towards an end-goal, would none of their actions count as using core mechanics? In relation with saving, this definition would apply as well as the previous; saving is used to achieve an end-game state. Sicart does use several examples of games without an end state, such as *Sim City* and *Everquest*, but solves that problem by

insisting they do have a desired end state after all, rendering the point moot and ignoring any other form of gameplay available to the player, such as deliberately upsetting the equilibrium in *Sim City* instead of striving for it. I would argue this is a valid way of playing the game and it does not mean there are no core mechanics involved.

As saving and reloading are generally used to indeed achieve an end-state, it is certainly not the only use regarding play. In the game Skyrim, for example, players can save their game and do something which they actually do not want recorded in the progress of the rest of their game, such as slaughtering a town. In this case, players use the save and reload mechanic to allow themselves to play in a way that will not be recorded for the entire duration of their gameplay. In the game *City Skylines*, there are achievements and unlockable in-game items exactly by doing things against its primary goal, which is to create a stable, growing city, such as unlocking a building when the player has a city with a crime rate over 50% for 5 weeks ("Cities: Skylines Wiki"). In short, I would argue that Sicart's definition of core mechanics detracts from the mechanics themselves and instead focuses too much on the intended gameplay. I would like to reform his definition to include not only an end-game as the reward, but progress in narrative or change in the game state, such as deliberately upsetting the balance. Although this may not achieve a desired end-state, it does work towards a change in the game state, which in turn adds to the playability of a game, especially in games designed without a clear end goal such as *The Sims*. However, this opens up the problem that there are many trivial ways in which a game state can be conceivably be changed. Therefore, the definition of core will include, alongside repeated action, that a core mechanic is a mechanic without which the game would fall apart. For example; the mechanic of mining is integral to the game Minecraft. It is core because it is a repeated action, an action that affects change within the game state, and a mechanic that without which the game Minecraft could not exist. In conclusion, for the purpose of this paper, core mechanics as described by Sicart will be further defined as follows; core mechanics are actions that are repeatedly performed, that without which the game could not exist, and used by agents to achieve change within the game state.

In the case of the saving mechanic, it would fall under the definition of core and repeated, as it is a mechanic that is repeatedly employed and in most cases does contribute to the player's effort to reach the end-game. As per the definition above, saving & reloading, as I feel both are intrinsically linked to one another, is a mechanic that is core, and repeated. However, there is more to this particular mechanic, as it is also necessary for the player to play the game on a basic core need, whether or not the player can reach an end-game at all.

Namely, even games without a so-called end-game, are in need of a save mechanic to allow the player to return to their game state. The need to store a player's progression, and return to it in a later moment, is a basic need. Therefore, I define saving, and consequently reloading, a mechanic that is not only core, but also meta in its ability to connect the player's, for a lack of better word, real world to the narrative of the game's world.

2.2 CATEGORIES OF SAVING

Consalvo & Dutton do talk about the saving mechanic, and argue that the "larger game world or system compromises such elements as the construction or deployment of save points or save mechanisms" (Consalvo & Dutton, 2006; web). This does change per game, however, as there are different types of saving. Consalvo & Dutton raise several questions, such as how the save mechanism is integrated into the game world, whether it provides coherence or obtrusion, or if there are any restrictions (Consalvo & Dutton, 2006; web). To examine this problem, it is imperative that I clarify the types of saving. Therefore, I will define the types of saving that exist, and create categories for them to provide a clear term for each. This will allow further research to easily continue, picking up these definitions and debating and expanding upon them.

Types of saved games
- Manual Save
    - Menu Save
    - Save Point
- Autosave
    - Checkpoints
- Quick save
- Single save file

There are two main categories of how save files are created; manually and automatically. These two can take on different shapes, and as such, I will divide and explain them briefly. Games often combine several of these, and one can find such hybrid forms in many games (Oxland, 2004; p.182).

MANUAL SAVE

Manual save is when the player can create saves themselves, this type of saving gives the most agency to the player but can be regarded as the most intrusive type because the player has to consciously decide to save, usually pausing the game in the process. Manual saves come in several forms, as described below. It is imperative to distinguish these forms of saving so that the impact of the chosen form of saving can be clearly examined. The use, for example, of a manual save implies different things than an autosave. For manual save, as stated above, the player needs to consciously pause play for a moment to save their current game state. In doing so, the player is removed from the immersion of the game, however brief, and reminded of their connection to the real world and possible consequences of not saving their progress. With an autosave, different conditions apply, as described below. As such, to achieve a clear research into the saving and reloading mechanic it is necessary to first with full clarity describe the types of saving and how they interact with the player.

MENU SAVE

This is one type of manual save. Generally, this is done by accessing the menu and clicking the save button. Many games allow multiple save files, though games may restrict the player to one save file, or limit the amount to certain number, forcing the player to override previous saves. As computers advance, this seems to increase as storage space is less of an issue. Some games will only allow one, or perhaps a limited amount of save files per game. Another element of manual saves is that, as the player has to access the menu, they cannot always be made. Access to the menu is often prohibited during fighting or certain moments in the game, and thus the player will most likely be unable to manually saves at those times.

To make a menu save, the player has to pause play and suspend their immersion. The impact of the menu save is, I would argue, high on the player and their experience in play. The menu save and the game's possibility to make them can heavily influence how a player approaches the game; the player can now save their progress and current game state to access again later and afford actions in game the player may not wish to record but merely try out. One such example would be *The Sims*, where a player can make a manual menu save to then proceed to kill their family only to return to the previous save. In essence, a menu save can give the player access to forms of play they may not otherwise do, as they would not want to

save that particular progress. It means that manual saves affords the player with the choice to preserve their game state or not, and in doing so may break their immersion when they have to make the saves themselves but on the other hand allow the player access to different forms of play they would otherwise not venture to try.

SAVE POINT

Another version of manually saving the game is a save point. These are places in the game where the player can save. Generally, if this method is employed, players cannot manually free save like in a menu save, but only at these designated places within the game. This restricts the user somewhat in when they are able to save, and completely restricts where they can save. However, some autonomy is preserved as the player can access these save points at will, and can often go back to previous save points in the game ("Item-Based Game Save").

Save points can have a dramatic effect on how the player perceives the area. One game that uses the effect of a save point to its advantage is *Dark Souls*. In this game, all saving has to be done via save points, represented as bonfires in the game. The bonfire represents a form of safety and rest that is scarce in the world of the game. As such, so are the bonfires themselves, and whenever a player finds a bonfire this both sooths them in the sense that they have found a place to save their progress but can also alert them to potential danger up ahead, as the game tends to provide these save points before particularly harsh boss battles.

AUTOSAVE

Autosaves are a form that is nowadays found in many games[1], and is usually used in combination with another form of saving, though some games opt to only use autosaves ("Auto-Save"). Autosaves are saves created by the game themselves, this either when there is a pivotal moment in the game or a battle is about to occur, or periodically to ensure the safety of the player's progress, were something to happen with other saves. Imlach defined autosaves in three separate functions:

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[1] In their Auto-Save article, Giantbomb has currently documented well over 323 games featuring this type of save.

1. Time based, where the game state is saved in set intervals of time, such as a couple of minutes or hours.
2. Location based, where the game state is saved after reaching specific locations
3. Task based, where the game state is saved after progressing the story or completing a set task. (Laramée, 2002; p.188).

Autosaving is used often because it is a good way to help the player and it prevents the constant need of the player to save themselves. It is also a good safeguard against corrupted saves. When this is used as the only means of saving, the player is bound to the flow of the game more so than any of the other forms of games, as there is no certainty when these will occur. It also prevents the player from abusing the save system and returning to earlier parts in the game with knowledge gained, also referred to savescumming when this gives an unfair advantage to the player. It can be argued that this allows the game to dictate the narrative progress. The term savescumming is interesting because it a name given by the gaming community. As invisible as the mechanic arguably is, the player is keenly aware of the possibilities it offers and it does influence their approach to the game.

Autosaves however do give important information to the player even if they are not meant to. Often the game will tell when it is creating a save, so as to not have the player quit in the middle of saving and potentially corrupting the save, but in this, it tells the player the game deemed it important to save at that point. This is often before an important moment in the story or a big fight.

CHECKPOINTS

Closely related to the save points, checkpoints are places in the game where an automatic save is created (Adams, 2009, p.282). The difference with save points is that the player has no control over these saves apart from entering or touching the checkpoint. They cannot resave and often checkpoints override a previous save. Checkpoints are at times temporary, as they are often seen in platforms, they give the player a couple of tries at a certain point, but if the player loses all their lives before completing it, the level is reset and the checkpoint save erased ("Checkpoints").

Checkpoint saves are usually visibly represented, if temporarily, to alert the player that the game has made a save. Although this happens automatically, it does signal the player that the game felt it prudent to save at this very point. It alerts the player that you either just

solved a complicated puzzle, came through a tricky platform part or that there is a boss battle waiting just ahead. Although this knowledge is arguably only available to those that have the experience with other games, as I will explain later in this paper, it has become a rather standardised aspect in many games and the interpretation can generally be applied across games.

QUICK SAVING

Quick saving is a form of saving that is accessible with a single keystroke, usually the f5 button (Papes, 2007; web). This prevent the player from having to stop action and go into the menu to select save ("Quicksaving"). These quick saves are generally a single, or sometimes a couple, usually a maximum of three different saves, that saves over themselves. The benefit is the ease with which the player can save their progress, though the downside is the lack of control over these saves as opposed to a menu save. Quick saving can allow players to experiment briefly with things such as jumping off a cliff, without having to backtrack far into other saves or having to create a new save specifically for that purpose.

SINGLE SAVE FILE

Some games will only allow one save file per game, or newly started game. This means that while the player can save their progress, they can only do so for one game state, and not branch out to multiple different ones. This started back in the day when there was too little memory to create multiple save files, but now games deliberately choose for this set-up, in part to reduce the narrative breaking possibilities of saving and reloading.

Single save files have become somewhat of a rarity, although it still exist in some forms. In *Borderlands 2*, for example, one could argue that it uses a type of single saving as the game will automatically save the player's progress and there is no way of reloading a save from a previous game state. This means that it is impossible to redo a quest after completion, barring the option of restarting the game. This is mainly due to its rather unique set-up of limited co-op play, where different players can enter and join the host's game. To assure equal level and quest progression, there is no way of backtracking.

CHAPTER 3: THE EXPERIENCE OF SAVING

INVISIBILITY, TIME, AND DEATH

3.1 | THE INVISIBILITY OF SAVING

The ability to save one's progress has become so ingrained in the design of games, that is has become near invisible. Waters discusses what he terms "invisible game design patterns" (Waters, 2014; web). He argues there are elements in game design which are not obvious to the player or deliberately make them as invisible as possible by not calling attention to the goal of the design (Waters, 2014; web). As an example, he uses the movable parts in the Mario map, where he argues that when the player is taken to a map, the designers use movement to draw the players view to the relevant part of the map, in this case where the character spawns and moves around. Another example he uses is how *Super Mario Bros. 3* has a level which cannot be unlocked unless a player does a collecting mini game in which they have to fly in a plane to collect balloons. This, he argues, is done so that when the players unlock the level, which requires to fly the plane, the player will have had the time to learn the fundamentals of the controls to complete the level. This, he calls, are invisible game design patterns or "sleight of hand mechanics" (Waters, 2014; web). However, his research does not go into design elements which are crucial to a game such as saving, although is partly because his research delves into more limiting, specific parts of the game. Arguably saving, although seemingly invisible as a design element, is different from the patterns Walters mentions. Saving is born out of a necessity to allow players to save their progress and stop playing, rather than the elements Waters mentions which are added to the game to enhance the experience. I will therefore make the difference between added invisible elements such as Waters mentions by calling those "sleight of hand mechanics" as he terms them so as to distinguish them from other invisible game mechanics, ones ingrated into game design as I argue saving is.

Therefore, the saving mechanic can be viewed as a hidden affordance within game design patterns. Although affordances are not typically associated with games, I argue that the theory can most certainly be applied, and with great effect. Norman's definition of the term of affordance is how the "perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used" (Norman, 1988; p.9). This refers to how certain objects in their shape clue as to what their function is

and what they do. An example would be a doorknob, which as a round object suggest turning, and in its placement suggest interaction with the door. With experience and knowledge of doors, it is simple for people to make a logical conclusion in what a doorknob does and how it is used without needing any further instruction. I argue this can be applied to game mechanics, as the player will be able to interpret objects and abilities in games with their experience and knowledge. The save mechanic, being one of the most base mechanics in games, draws similarities with the doorknob; providing affordances often without need to explicitly state that it does. Think of how the save mechanic can afford the player to replay certain parts of a game, although it does not need to say it can.

Although there has been a lot of debate surrounding Norman's definition as it does not separate the perceptual information from the affordance itself (McGrenere and Ho, 2000; p.181). Gaver attempted to separate the two for a clearer distinction between the two, as to differentiate between perceptible affordance and hidden affordance, as well as false and correct affordances (Gaver, 1991; 3). For the purpose of this paper, I will focus on the hidden and perceptible affordance. The difference between these two is, in essence, the presence of visual clues or lack thereof for the affordances present (Soegaard, 2015; web). To apply this to the saving mechanic, I argue that although the initial affordance is usually clear and perceptible, the ability to save the game state, the other affordances this creates, such as reloading and replaying bits and pieces of the game, are invisible affordances.

As mentioned before, a lot of this has to do with a player's ability to, for lack of a better word, read a game's mechanic. As gaming has been building a legacy, a lot of game design has become cemented, as I argue saving has, and is implicitly meant to be understood by the player without needing much of any explanation. There are mechanics in games that have become a part of the needed gaming literacy, or ludoliteracy, needed to understand how the primary functions of a game works (Zagal, 2010; p.22). For the saving mechanic, as perhaps one of the oldest in the literacy of games, this is especially true. Buckingham and Burn argue that thinking of a literacy in games would imply "that there is a competency in using that language that is gradually acquired" (Buckingham & Burn, 2007; p.325). I would argue that this is indeed the case, that players gain a literacy in gaming and assume certain forms and functions to be present. Games also tend to adopt certain forms within their genres, for example keybinds in shooters; often sprint will be bound to left shift, shooting to left click, swapping weapons to scroll wheel and so on. These are simple examples but they do show a certain writing style so to say within the genre. Saving, as a more global mechanic found in virtually every game, can be found in forms described above and I argue that

because of the literacy a gamer has accumulated, they will expect saving to be present in one or more of these forms.

3.2 | TIME AND CAUSALITY

Now I have stated what I have classified the saving and reloading mechanic as, but I have yet to go into its impact on the experience of time. To do so, I have looked at the theory of Jesper Juul in his article "Time to Play: An Introduction of Game Temporality". As the saving mechanic of a game is linked with time, both inside and out, his theory is a good starting point to analyse the saving and reloading mechanic. In this article, Jesper Juul sets forth to create a beginning in theory on game time. He states that his theory "primarily describes the relation between linear, objective time of the player and the event time of the game world constructed by graphics and other cues" (Juul, 2004; web). He defines play time as the time taken to play the game, and to play a game is to interact with the game time, even in abstract games such as Tetris, although these games lack immersion. He also notes that if one cannot influence the game state in any way, one is not playing a game. Event time is another term he employs to define the "events happening in the game world", and connects the event time to the play time; most often, during play time the player can immediately influence the game state and instigate an event, and thus runs parallel to the event time (Juul, 2004; web). Differences will occur when what happens in event time would take years, but only minutes in play time, such as in games as *SimCity*. These relationships between play time and event time he calls mapping. Mapping occurs whenever "the player's time and actions are projected into a game world" (Juul, 2004; web). He briefly talks about cut-scenes, where agency is taken away from the player, thus disrupting play time. He calls them "a different way of creating the event time" (Juul, 2004; web). He also notes that most games move in a chronological way, because any other way is highly problematic as the player should retain agency throughout most of the game.

Most importantly, he discusses violation of game time, and game save files. Although the violations of game time go no further than that music continues to play when one pauses, he does discuss how save games impact gameplay, however brief. For a more in-depth understanding I have looked at both Koskimaa and Bergson's research. As Koskimaa has argued, games, as an "interactive and dynamic media form (…) are specifically temporal in nature", referring to the many ways game manipulate or are contained by time (Koskimaa,

2015; p.19). She names the ability to reload a pervious save a form of time reversal. In a sense, reloading a previous save interrupts the temporal system of a game, and I would argue that of the player's sense as well. Looking at the saving and reloading mechanic, the way it impacts the narrative is connected to "the personal experience of time" for the player (Bergson, 1888; p.99). Even though a game would not centre or even mention time-travel, it does interact with the notion of it through the ability of reloading previous game states. As Koskimaa puts it, a game "manages to operationalize [time manipulation] through its game mechanic" (Koskimaa, 2015; p.27). Through this, I would argue the saving and reloading mechanic is a mechanic unique in its ability to control time within the game regardless of the narrative of the game, and so opens up possibilities for the player that may not be meant as a feature by the designer. As discussed before, the impact of death for instance changes with the ability to reload, as well as encourage certain actions that a player can perform in the game as the reloading mechanic can erase the consequences.

Juul also refers to Chris Crawford, who feels that "the need for save games is a symptom of design flaws". He argues that gamers, and by extension game designers, "have come to regard the save-die-reload cycle as a normal component of the total gaming experience". This is an important reason why the saving mechanic is in need of academic research; it stretches well beyond many games and impacts the playing experience significantly. Although I do agree with Juul's assessment that the saving mechanic is "not an evil to be avoided at all costs" (Juul, 2004; web).

3.3 | THE GRAVITY OF DEATH

To understand how the save mechanic impacts experience, it is important to look at what saving does to several elements in games, in this instance death. Saving a game state helps the player to preserve their progress and, in the event that their character should die, revert them back to a save state that was (hopefully) not too far back. In essence, the save mechanic can relieve the gravity of dying in games. As such, it has a unique and defining effect on death in games. From a narrative perspective, death of the protagonist is incredibly difficult, and arguably unique to games as the player is responsible for the protagonist's fate, rather than a scripted story (such as a book or film) where, if a character dies, it is because the author planned it and it fits in the narrative. When a character can die regardless of the narrative, it is problematic. Most games will not accept any form of death caused by the player, and roll back to the latest save file, also known as respawning. Auto-saves are generally made for this specific purpose; often these types of saves will occur before a tricky part in the game, be it a boss battle or a difficult jumping puzzle, and the game will often save automatically right after that challenge too, preserving the player's progress to the best of its ability. However, the impact of death is harmed in this way; if the player knows they can go back to a previous save file and that there is nothing to lose even in death, its meaning becomes non-existent. From a narrative point of view, this is extremely problematic.

It would be remiss not to mention the genre Roguelikes, which is notorious for its restrictive use of the saving and reloading mechanic in an effort to create a gamer experience where losing certain things, such as lives, characters or items, are irreversible and therefore meaningful. Roguelikes is a genre that actively uses the save mechanic as a means of limiting the player and structuring its narrative around the idea that if someone dies, they are gone for good. The name comes from an old game called *Rogue*, which introduced, or at least popularised, two things; computer generated dungeons, insuring a different gameplay every time you played, and that the player only possessed one life, if they died, the game was over and the player had to start again, without access to a previous safe (Rothman, 2014; web). This gave birth to a new concept later named perma-death, which means there is no going back on characters dying in a game. Perma-death, and the idea that saving cannot be used to change to outcome of a player's playthrough, is an idea that is linked strongly to the saving and reloading mechanic. In part, it drives or limits its design. Although there are ways to cheat the system and retain previous files, in general, a roguelike game will only allow saving

to give the player the ability to take a break. Upon character's death, the save file will typically be removed. The practice of cheating the system and retaining older save files is regarded as a form of save-scumming (Moran, 2010; web).

Roguelikes, although prolific in their way of creating meaning for death, are not the only ones to attempt so. More games have popped up that attempt to give a character's death gravity besides employing the use of perma-death. *Shadow of Mordor*, for example, allows the character to be killed and the effects of that event ripple through the entire game. Not only is there an in-game, narratively appropriate reason for the character to resurrect, the event is not forgotten but rather the player will be confronted with its after-effects. The enemy will be promoted for their deed and will even reference the death of the protagonist. *Dark Souls* is another game that attempts to add gravity to the death of the character, and in doing so aid the dark, gloomy vibe the game and its narrative has. It does this by combining a save file type of checkpoints (bonfires the player can find in the game world) and the protagonist's death results in loss of gear and level progress (although there is a chance to recoup the losses by going where the character died). This not only adds gravity to death, but also aids to instil fear in the player when they walk around the game world; the longer a player goes without encountering a bonfire, a.k.a. a save point, the more progress the player can lose.

CHAPTER 4: CASE STUDY

UNDERTALE

4.1 | THE BROAD NARRATIVE

The premise of the story in *Undertale* is built on what if saving and reloading was a power unique to humans, in a traditional humans versus monsters setting. This is then combined with the monsters in the game being people, having personalities, hopes and dreams ("Undertale Wiki"). The story of the game starts as follows; there has been a war between humans and monsters, which the humans won. The humans sealed all remaining monsters underground, trapping the monsters. The seal can only be broken by seven human souls, and although anyone can enter through it, only by breaking it can one leave. The monsters versus humans narrative is often found, and deliberately used. By naming a group "monsters" the judgement of other ideas linked to the word surface; evil, to be vanquished. The monster is usually portrayed "as other, as a deviation from an idea of acceptability" (Scott, 2007; p.3). Especially within the narrative of games, where monsters are almost always the creatures the player kills, often without much thought (Gee, 2008; p.82)

The game starts when player character falls down into mountain crevice and ends up underground with all the monsters. In *Undertale*, the player plays as their self-named character (which, unlike tradition, does not have a default name when starting out) of undetermined gender, as they try to make their way back to the surface. During the course of the game, it becomes clear that the protagonist is not the first to have fallen into the underground. Depending on which route the player is on, different pieces of information will appear. The story, and even who the main character really is or becomes, depends on the route chosen.

Although the routes do not have names given by the game, the community around *Undertale* have termed the ending as follows, Neutral, True Pacifist, and Genocide. The game itself never names these endings, not even in the form of achievements as other games sometimes do[2], but rather the player base has. Briefly, the routes are as follows:

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[2] In the game *Bastion* for example the player is confronted with a choice on whether to continue in a destroyed world and rebuild, or to turn back time and return to the world before the Calamity. The first ending gives the "The Beginning" achievement and the latter bestows the "The End" achievement.

NEUTRAL

This is the ending most players will face the first time they play the game. This ending will also play if the requirements for the other two are not met by the end of the game. Although this ending has many variations based on what the player has or has not done before reaching the end, ultimately it ends the same way; the human reaches the end and escapes the underground.

TRUE PACIFIST

This route is generally perceived as the "happy ending". There are several requirements the player must reach before this ending will play. First, the player must have finished a play through already, most likely having finished a neutral route first. Then, the player must have spared every single monster they have encountered. Lastly, they must have made friends with every main character. The game ends with the human not only making it out of the underground, but shattering the barrier and taking all their friends with them.

GENOCIDE

This route is generally perceived as brutal and the "bad ending". This one also has several requirements. The first is that the player must have killed every single creature, not only those they happen to encounter, but they have to actively seek out every last creature on every level. They also have to kill every boss, and every character that could have potentially been their friend, had they chosen differently.

4.2 | SAVE FILE TYPE

Undertale uses a combination of save points and autosaves, although the latter are invisible, together with a single save file set-up. This means that the player can only save at predetermined location in the game, and cannot reload to anything but the latest save file. By limiting the player's access to previous game states, the game can allow itself to reference its power more freely as there are limited options for the character to wind back time. In essence, the affordance usually accompanying saving, in this case to turn back time and thereby actions, is being taken away by the game. In effect, although the character can return to their

latest save, they cannot revert any choices from before that save, barring starting over completely. The single save file is also necessary for the narrative, as the route that the player takes can affect any subsequent routes played thereafter. This means that this set-up with the narrative and inter-referencing between game states the player has ever finished, a single save file was necessary to achieve it.

This form has also to its effect that players have the choice to start the loop of the narrative over, and change the type of person their protagonist is (Lees, 2015; web). However, what it also creates is a sense of uncertainty about the game world, and this lead to "a fascinating real-world narrative" in which players actively "refuse to play the game again (…) because they do not want to invalidate the narrative that they created in their most recent save file" (Neeves, 2016; p.20).

The save points in the game are represented by a yellow star shaped point on the map, and when the player walks over to it there will be a line that changes depended on the place where it is but nearly always ends with "fills you with determination" ("Undertale Wiki"). An example would be one of the first save point, where the save point is on top of a pile of leaves; "*Playfully crinkling through the leaves fills you with determination*" ("Undertale Wiki"). The only time the message will have a different structure, is when the player is on a genocide route. As soon as the game has detected a possible genocide route, the message changes to a countdown of monsters present, to, when all are killed, only "*Determination*".

4.3 | SAVE MECHANIC AS NARRATIVE DEVICE

In *Fundamentals of Game Design*, Ernest Adams talks about the consequences of the ability to save and reload to the immersion of the player and the narrative. He argues that "the moment you allow a player to repeat the past, you acknowledge the unreality of the game world" (Adams, 2014; p.344). This in a narrative sense could be considered true; the fact that one can not only walk away from the story at any given time (or at regular intervals) like one can with films or books, but also repeat and influence the narrative accordingly, could result in breaking the immersion. However, there are many moments in which a player would break immersion, such as tutorial quest, the need for specific controls, accessing the menu or reading a codex, the list of potentially immersion breaking actions within a game are long. In a sense, this adheres to the rule of "suspension of disbelief" as Samuel Taylor Coleridge described it (Warran, 2009; p.4). According to Coleridge, a supernatural or romanticised

element in a narrative needs to hold "a semblance of truth sufficient to procure for these shadows of imagination that willing suspension of disbelief for the moment, which constitutes poetic faith" (Coleridge, 1847; p.442). In other words, people engaging with a narrative are willing to accepts certain unreal things as long as enough is grounded in a believable version of truth. I would argue this applies to games as well, with its multitude of mechanics and necessary reality based restricting controls and visuals. The ability to save, however, does seem to fill an odd place within this idea, namely that it often does not interact with the narrative at all, but is simply a necessary structure needed to play a game, as much as a play needs a stage. In all, I argue that players do not consider saving part of a game's narrative, and thus it does not necessarily break their immersion in the story, or rather their poetic belief in the story. However, for *Undertale*, the save mechanic is part of the narrative, changing its particular role in the game.

According to Adams, "[t]he act of saving a game takes place outside the game world and, as a consequence, stopping play to save the game harms the player's immersion" (Adams, 2014; p.344). Indeed, as argued before, the act of saving takes place in the meta world of the player and is there for the purpose of being playable rather than an element unique to the game. However, this fails to take into account methods of saving that are incorporated into the narrative itself, and if one looks at the multitude of saving types, there are already bridges to gap the hole between the game world and player's world, such as the saving points incorporated in the scenery of the game. When looking at *Undertale*, I argue it takes the harm that it causes to the player's immersion according to Warren away almost completely; as it does not harm the immersion, but rather amplifies it by having it incorporated into the narrative. Still, the issue remains that a player can reload the game, on which Warren has to say that "[i]f the player destroys his immersion by repeatedly reloading the game, that is his choice and not the fault of the game designer or the story." This assumes there is blame to assign, which is a rather faulty way of looking at game design. However, it is true that the player has an important role in how the narrative flows.

Giappone talks about the metafictional humour and tendency towards self-parody in adventure games. She notes that humour and parody are present in every game and genre, but most evidently in adventure games, and argues these elements have come to characterise that genre (Giaponne, 2015; web). She focusses on the comic elements in relation to genre and player expectations, mostly "considering moments which seem to foreground disconnection rather than recapture" (Giaponne, 2015; web). She argues how, by using humour, these games do not close off "wrong" paths of the game, but rather encourage the player to try all

of them out, the reward being the humorous results. Bergson theorises that the comic effect comes from the interruption of the mechanisation of life and the inversion of predictability (Bergson, 1924; p.44). In *Undertale*, there are instances where the control over the save mechanic is taken away from the player, and though this is not used for comedic effect, this theory may explain why it is arguably an effective narrative tool. One such moment is during the boss battle, where the boss takes control over the game and informs the player their save games have been deleted, directly threatening the player that they may not go back to a previous game state. Moreover, during one of the final boss battles, the boss crashes the game. This means that the game is shut down without any prompting from the player and when the player reboots the game, it will look different. This is meant to scare not the protagonist per se, but very directly the player. Giappone continues to argue that this reversal of expectation is also a reflection on the skill of the player, and by self-referencing in such a way, it exposes "the medium's manipulation at work by breaching the relationship of trust" (Giaponne, 2015; web).

      Undertale incorporates saving into the narrative as an ability unique to the protagonist (or humans, at least). As the game progresses, it becomes clear that the war between humans and monsters was won by humans because they are significantly stronger as they have the power to save and reload, whereas monsters when they die, they die for good. I would argue that by using the game mechanic in this way, the game frames this mechanic which is traditionally meant to be invisible, as a representation of the ethics in the game; by establishing humans to be unequally stronger than monsters, it concludes that humans will always win. This, when interpreted as the player, would conclude that players will always win, given enough retrying, asking the question whether it is truly a victory at all when the outcome is already established. Giving the player the ability, then, to win in another way by getting to know the monsters instead, and be rewarded with a happier outcome, can be interpreted as the morally better choice. As Navarro-Remesal and Bergillos put it, choosing to subvert the traditional RPG ruleset of killing monsters and gaining experience, and instead reason with the monsters results in an improved "general state of the gameworld", which is the narrative reward for following the pacifist route (Navarro-Remesal & Bergillos, 2016; p. 7 - 8). One could also view this as a subversion of affordances usually encountered in games; killing monsters usually provides a beneficial affordance of levelling up, so when a player is confronted with a battle the affordance of fighting is clear.

      Some of the characters in the game are aware of the player's ability to save, some more consciously then others. Toriel, the true tutorial character, will note speaking with the

protagonist is "like speaking with an old friend" and Papyrus will say they "feel familiar" if the player has encountered them before, but reloaded or restarted the game ("Undertale Wiki"). The character Flowey in particular will converse with the main character about the ability to save, especially in the genocide route. This is because he had the ability to save before the player entered the game world. Flowey will try to persuade the protagonist to kill every monster they meet. Towards the end, Flowey will talk with the protagonist about the saving mechanic and the possibilities this provides to the player, and it touches upon the ideas of morality with using, or arguably abusing, this particular mechanic. Flowey describes how most players would most likely approach a game and how they would play the first time around; they would befriend the characters and solve all problems flawlessly. He then continues to say how, as time would repeat itself, i.e. new playthroughs of the same game, he would deliberately chose different things hoping for different outcomes. He got, as he puts it, "curious" which led to his behaviour that got more atrocious as time passed, such as killing people around him just to see what would happen. Flowey, in his tirade, rather directly addresses the player with their ability to reload the game, and how they use that as an excuse to do things they would not otherwise, such as killing characters. In short, he points out the affordance that restarting a game, erasing the save file, usually provides; the killing of characters and the ability to reverse that action. Of course, with the genocide ending, this affordance is also removed from the player, as the game will flag every subsequent playthrough as having played a Genocide route. Flowey also addresses people who only "stand around and WATCH it happen" and that at the very least, they are better than those (Lees, 2015; web). This addresses the popular uploading of playthroughs for people to watch so they do not have to do that themselves. This raises an interesting moral question; Flowey poses that playing this Genocide route is morally wrong, but better than standing by and watching someone else do it for them. Doing it yourself is better than watching someone else do it, is what he proposes.

4.4 | UNDERTALE AND TIME

As discussed before, the experience of time in games is heavily subjected to the save mechanic. In his article, Juul uses Half-Life as an example, and notes that when he was playing he had hundreds of saves and reloads throughout playing the game. He says that "[s]ave games are manipulations of game time" and that they "allow the player to store the game state at any moment in play time and then later continue playing from that position" (Juul, 2004; web). He names several arguments against save games, noting how save games "allow players to chop up game time" and arguably how saves "make the game easier or too easy". He argues that, although that would be correct, at least in his experience with playing Half-Life, he also states that it would be "humanely impossible to complete the game without them" (Juul, 2004; web). Last, but not least, there is the argument that saving "destroys the player's sense of immersion". This is an important part as to how the save game mechanic works in *Undertale*, and how it attempts to bridge that gap. As discussed above, the saving mechanic is part of the world of *Undertale*. It even becomes a major plot point, and so I would argue that, although it may break the player's sense of immersion in many cases, and still connect the player's world to the real world and in so doing reaffirms the game's world as unreal, in *Undertale* it at least is an acknowledged feature. In doing so, it actually enhances immersion, rather than breaks it. By making the save mechanic part of the game's narrative, the game explains how the player can manipulate time in a way none of the other characters can.

CHAPTER 5: THE CONCLUSION

5.1 | CONCLUSION

In short, I define the saving and reloading mechanic as a mechanic that allows players to create a save file to preserve their progress within a game, and to return to the saved game state at a later date. Furthermore, to clarify and establish a base to examine the mechanic, I divide saving in the following types; manual save, menu save, save point, autosave, checkpoints and single save file. As Waters argues, saving is one of the invisible mechanics in games, and as such warrants further research.

Moreover, with this paper I have created tools for further research into the saving and reloading mechanic. All games are affected by this mechanic, and as such it is important to shine a light on it and allow the mechanic to be placed in solid context. In the future, there may be games that will change the way they handle the mechanic or perhaps even do away with it in its entirety, and I argue those effects have the potential to be tremendous because of the importance of this vital mechanic. As such, with this paper I provide a solid tool to examine and discuss the saving and reloading mechanic.

To define the mechanic that has mostly been invisible, I draw upon Sicart's theory to classify saving and reloading as a repeated action. For the purpose of this paper, core mechanics as described by Sicart are defined as follows; core mechanics are actions that are repeatedly performed, that without which the game would fall apart, and used by players to achieve change within the game state. Furthermore, the mechanic is meta, in its sense that it directly impacts the players time and capability of playing the game.

Moreover, I argue that the saving and reloading mechanic has a profound effect on the experience of death in games, which has been used as a tool before in the genre of roguelikes. Giving the player the ability to reload to a previous game state changes how death in the game affects them, and restricting such access changes the experience. This freedom or restriction of the save mechanic can therefore have great consequences for how the narrative is experienced by the player, and can even change the type of narrative a game may convey.

Furthermore, the saving mechanic's effect on the experience of time and connection with the player's real world has a high impact. This is for now an almost inescapable fact, however the connection to game and real world is useable in a narrative. This connection

between time and time manipulation could be used in the narrative of a game, as *Undertale* has shown.

Performing a case study examining how the save mechanic impacts the game is a fruitful approach. Having researched *Undertale*, I argue that the save mechanic can be woven into a narrative in an effective way, using the impact the mechanic creates on the experience of time and causality. First, the game incorporates the save mechanic as a power unique to humans and refers to the mechanic as a power of great magnitude. Furthermore, the game utilises the form of a single save file combined with checkpoint saves to limit the player and amounts of game states to be able to refer to previous events and choices made by the player as well as make sure the player cannot avoid the consequences of a genocide route, which in turn creates interaction between the player and the game files, enhancing the narrative through the use of the save mechanic. In conclusion, *Undertale* utilises the save mechanic as an effective tool for narration, and creates discussion and cooperation between players outside the single-player shape of the game.

How *Undertale* handles its incorporations is unique to its narrative, and may not appear the same in any other game, although other games can use the save mechanic in this way. By examining *Undertale* through the save mechanic, it has become apparent it is a vital mechanic for this game in more than the usual saving one's progress way, but rather a basis on which the narrative thrives. Other games may not incorporate the save mechanic in such detail, but since the save mechanic is available in nearly every game, how a game approaches this mechanic is vital and can tell a lot about what the game is trying to convey to its players and how it is meant to be experienced.

5.2 | LIMITATIONS

At first I wanted to look at standardised game mechanics, what had started to call the game mechanics canon, and what they meant for the shape of games. However, that was far too broad for the scope of my paper. As such I whittled it down to one mechanic to focus on, and one game with which to analyse it. Therefore, the limitation of my paper is that it only looks at one mechanic, and only at one game. Moreover, the formal analysis such as proposed by Lankoski & Björk, does not focus on the individual player experience, and it is also a qualitative research, and not quantitative (Lanskoki & Björk, 2015; p.26). Lastly, as I analyse one mechanic deeply, it cannot automatically be applied to any other mechanic. For example,

this particular mechanic works heavily with game time and play time, hence my drawing upon Juul's work on game time, where another may not be so heavily involved (Juul, 2004; web).

One rather fruitful avenue I was unable to venture into deep enough was the player community surrounding *Undertale* and I would suggest further research into this could be extremely valuable. Though this is a single player game, the community actively engages with the game and its fellow players, creating content from the game's social interpretation. As Neeves put it, this game "hides its secret in its game files and through community collaboration and theory crafting, fans have been able to unravel the mysteries the game sets up" (Neeves, 2016; p.20). The player community has also given the three endings their names and with them, arguably their moral judgement. Genocide has, in its name, an obvious negative and detestable connotation, whereas pacifist a word more often connected to positive ideals.

Another suggestion for research would be the examination of 4th wall breaking in games, as I noted there are several moments in *Undertale* that a metanarrative approach is taken, for instance when the player finishes a True Pacifist route, the main character's name changes o Frisk, a brand-new character, regardless of what the player has decided to name them (Childers, 1995; p. 186). Undertale is not the only game to do so and more research into this, especially considering an approach from the save mechanic angle, could provide new insights.

On that note, a quantitative research of a comparative nature on how save mechanics are handled in games is another suggestion for research that, I feel, could add to the broader scope of game research. One could take the research of this paper and expand on it; debate my choices of classifications in save mechanics and add new ones or change the existing definitions where necessary. This could shed some more academic light on how the save mechanic is used in contemporary games, and how this mechanic could become a deliberately designed part of the procedural rhetoric of games.

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