The habituated gamer diverged

A qualitative research into the relation between the procedural rhetoric of gameplay and the habituated schemata of video game players

NEVER THE END IS NEVER THE END IS NEVER THE END IS **LOADING** NEV

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Abstract

The aim of this thesis is to gain an understanding of gaming conventions and the gameplay that today's 'video game natives' are familiar with. A large part of society has come in contact with video games and is therefore able to quickly pick up new games when they come in contact with them. This is why we are exploring elements in video games that go against these gamer's conventions. The games DEFAULT DAN and THE STANLEY PARABLE are analyzed on how they go against a gamer's familiarity. It is proposed that habituation is present with video gamers and that they are able to play new games easily because of the connections they make through schema theory. Using this theory as its framework and building upon theories of procedural rhetoric, this study has conducted a textual analysis of the elements and processes present in DEFAULT DAN and THE STANLEY PARABLE. Together with an autoethnography, it is found how a player reflects upon these themes and how it is related to one's own culture. It is shown how DEFAULT DAN and THE STANLEY PARABLE use different connotations, role reversal and the corruption of authority, to convey the diverging from habituation and schemata of players. This is put into perspective with the current gaming industry, the players and its developers.

Keywords

"Just like the notion of 'Internet natives', who have never known a world without Internet access, we, who have lived our entire lives with video games, can be known as 'video game natives'."

Alexei Maxim Russell (2015)

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1. Introduction

Video games are definitely not just for kids anymore. The graphics and gameplay are improving, awards ceremonies are held to honor video games on their impact and narrative and people of all ages are enjoying them. From consoles to mobile games, many people are playing them. Therefore, Thursday the 10th of November in 2016 was an exciting day at my job: the Nintendo Classic Mini gaming console had just become available in the Netherlands. My colleague placed some calls and at the end of the afternoon the console was delivered to our office. The original Nintendo Entertainment System (NES), where the mini is modeled after, came out in 1986 and the new mini is able to play thirty of the old games (e.g. SUPER MARIO BROS, PAC-MAN and THE LEGEND OF ZELDA).[1] Most of my colleagues had no problem playing these games. Everybody knew how to jump, where not to land and some even knew the shortcuts in levels. More so, unfamiliar games were quickly figured out. When asked who actually owned or had a friend who owned an original NES, there weren't many people who said yes. We categorized everybody's age into different generations: the NES generation, the PlayStation generation and even the Wii generation. In reality, everybody there was between the ages of 18 and 40, but all of them had some experience in gaming. Everybody seemed to know the basic information of gameplay. It can be assumed that this generation will be the first to grow up and grow old with video games.

But you could also see this anecdote as a cautionary tale: my colleagues and I knew how to play all of these games. Due to our habits and familiarity with playing games, the surprises, and maybe enjoyment, in the gameplay could decrease. Is gameplay and video game mechanics becoming the same? This research purposes that the current generation of 'video game natives' can easily grasp the basics of new games because of habituation. Habituation is a form of learning that revolves around familiarity: when the same action is repeated over and over again, that action will become a habit which needs less energy than in the beginning.[2] This is a human evolutionary function that helps us live. Another example of this is schema theory. In this theory, humans link and categorize information to help us understand our world easier.[3] For example, we know not to touch a lit candle because we know it will burn and hurt us. Habituation and schema theory are hypothesized to be present in video games. That is how my colleagues knew how to play the games which they've never been in contact with: they've used their video game habits and connections they've made

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[1] "Nintendo Classic Mini," last modified November 14, 2016, https://www.nintendo.nl/Divers/Nintendo-Classic-Mini-Nintendo-Entertainment-System/Nintendo-Classic-Mini-Nintendo-Entertainment-System-1124287.html

[2] Christopher T. Fennel, "Habituation Procedures," in *Research methods in child language: A practical guide*, ed. E. Hoff (Oxford: Wiley-Blackwell, 2011)

[3] Paul DiMaggio, "Culture and cognition," *Annual Review of Sociology* Vol. 23 (1997): 263 – 287, accessed November 10, 2016, doi: 10.1146/aanuver.soc.23.1.263

with schemata to play them. Game designers can change the story of a game and the graphics, but the basics are all the same.

The video gaming industry is considered to be relatively small and is still in its developing phase. It can be assumed that the industry wants to grow and become just as big as other media predecessors, such as the radio, cinema or television. In order to grow, we must take a step back and look at the present. Research has to be done on the current games in order to build a future for the gaming industry. To explore this, games will be chosen that are developed by video game developers that in some way give critique on gaming overall. Since there are many aspects in gaming that can receive feedback in order to progress, a specific facet of video games is chosen for this research: the defamiliarization and subverting from schema and habituation in video games. This research could give game developers leads on how to imbed this critique into the gaming industry. Subverting from schemata and habit has only been investigated in the 'negative' sense: for example, gamers getting accustomed to violence.[4] [5] This research will not see new habituation or changed schema as a negative, but as a possibility to explore new fields in video game research.

This research will focus on two of those games to study their approach of subverting and defamiliarization. The games DEFAULT DAN and THE STANLEY PARABLE will be analyzed on their elements that diverge from a gamer's instinct and relate to the theory of procedural rhetoric. Procedural rhetoric will make it evident how the processes portrayed in the games persuade players and emphasize the diverging of schemata and their way of critiquing habitualization.[6] Therefore, the main research question will be: How do the video games DEFAULT DAN and THE STANLEY PARABLE diverge from habitualization and familiarization and critique the increasing habitualization of platform and first-person exploration games? To answer these questions first several sub-questions are explored: (1) which procedural rhetorical elements in both games are used to diverge from the player's schema and habituation? (2) How do these elements influence the player and his behavior? And (3) How can rhetorical elements in games be understood as critique on habitualization?

Although research has been done on schema theory and gameplay, there is no study on the case of DEFAULT DAN specifically.[7] No research has been done on the gameplay of this game and neither on what a physical or mental reaction a person can have when diverging

[4] Craig A. Anderson & Catherine M. Ford, "Affect of the Game Player: Short-Term Effects of Highly and Mildly Aggressive Video Games," *Personality and Social Psychology Bulletin Vol. 12 No. 4 (1986)*: 390 - 402

[5] Michelle Fleming & Debra J. Rick Wood. "Effects of Violent Versus Nonviolent Video Games on Children's Arousal, Aggressive Mood, and Positive Mood," *Journal of Applied Social Psychology Vol. 31 Issue 10* (2001): 2047 – 2071, accessed November 20, 2016, doi: 10.1111/j.1559-1816.2001.tb00163.x

[6] Ian Bogost, *Persuasive Games,* (Cambridge: MIT Press, 2007), 25

[7] Charley Reed, "Resident Evil's Rhetoric: The Communication of Corruption in Survival Horror Video Games," *Games and Culture* 11, No. 6 (2015): 625 – 643, accessed on October 10, 2016

from schemata. Some research has been done on THE STANLEY PARABLE, but not on this theme. It can be beneficial to the research field to look at games and video game theory from an interdisciplinary method or theory.

In this document the literature and theory relevant to answering the research question is explored first. Their relevance to research in general and this specific exploration into video games is clarified. Furthermore, the method of answering the research question is introduced and the corpus. Then, the analysis of the two video games will take place. They are researched on the elements and processes that diverge from habituation and schema in the games and the defamiliarization. To relate these concepts to the researcher's personal perspective and knowledge, an autoethnography will take place. Out of these two parts of the analysis, a conclusion and recommendation for further research is made.

2. Theory

2.1 The habituated gamer

The main concept that is used in this research is 'habituation'. For certain new game consoles people need some level of habituation of response.[8] For example, a professional golfer needs a form of habituation before playing a golf game on the Nintendo Wii, because swinging the controller gives a different effect - direction or velocity - than when swinging a physical golf club. This is a form of habituation that happens during the game, whereas the same can be said about habituation of the gameplay before even starting or during the first couple of seconds in the game. For example, games can withhold the 'gygaxian game design': good versus evil, a principle that almost every gamer is familiar with.[9] Most research done on habituation is used in psychology and on how humans develop and become familiar with objects and people.[10] Although not often researched, the concept of habituation can be used interdisciplinary with gaming studies. Usually this research is focused on the concept of a video game player becoming familiar with violence and how it sets a new habit for the player.[11] Moreover, analysis has been done on the desensitization of players with exposure to violence in video games and if they were linked to being habituated with the content.[12] Whereas some studies find no evidence of this, others do show a correlation between the habituation of game violence, proven by biophysical and self-reported responses.[13] Although, habit to violence and habit towards knowing which button to press in a game is a big step, but there are similarities. In both cases the gamer turns something mental – seeing violence or similar gameplay – and turns that into something physical – aggression or quickly making a connection between the brain and the movement of the hands. Aside from violence, habituation in combination with video games has not been studied often.

The form of habituation that this research will focus on is the habituation of gamers and their familiarity with interchangeable gameplay. We can assume that most people are familiar with some form of play. In the Netherlands more than half of the teenagers between

[8] David Myers, "The Video Game Aesthetic: Play as Form," in *The Video Game Theory Reader 2,* ed. Bernard Perron & Mark Wolf (New York: Routledge, 2009) 50 - 51

[9] Lars Konzack, "Philosophical Game Design," in *The Video Game Theory Reader 2*, ed. Bernard Perron & Mark J. P. Wolf, (New York: Routledge, 2009) 36 - 38

[10] Chris Fraley, *Attachment Stability From Infancy to Adulthood: Meta-Analysis and Dynamic Modeling of Developmental Mechanisms* (Champaign: University of Illinois, 2002)

[11] Dave Grossmane & Gloria DeGaetano, *Stop Teaching Our Kids to Kill: A Call to Action Against TV, Movie and Video Game Violence* (New York: Crown Publishers, 1999)

[12] Frithjof Staude-Müller, Thomas Bliesener & Stefanie Luthman, "Hostile and Hardened? An Experimental Study on (De-)sensitization to Violence and Suffering Through Playing Video Games," *Swiss Journal of Psychology* 67, No. 1 (2008): 41 – 50, accessed on October 10, 2016

[13] Grizzard et al., "Habituation and Generalization of Biophysiological and Self-reported Arousal Responses to Video Games," *Communication Monographs 82* (2014): 64 –87, accessed November 25, 2016, doi: 10.1080/03637751.2014.971418.

the ages of 13 and 16 play video games on a weekly basis.[14] But adults play just as much, or even more. In America 42 percent of the whole population play video games on a regular basis of at least three hours a week.[15] Some people don't have to play video games in order to be familiar with them, because the same study showed that the largest group of people playing games is between the ages of 18 and 35 and that 94 percent of parents pay attention while their kids are playing a game.[16] We can therefore assume that most of the western population is habituated with gameplay and can understand the gameplay of almost any game they come in contact with.

2.2 Schema's of the mind

A theory that is used most often in the psychology of humans is schema theory. A schema describes a pattern of thought or behavior that organizes categories of information and the relationships among them.[17] Schema theory goes in depth on how people experience narratives and stories and sometimes conjoin or partially interchange them with what they are familiar with from their own experiences.[18] Humans utilize these categories because otherwise they would constantly be disoriented and with each new experience it would "challenge our ability to function".[19] For example, Brewer and Treyens experimented with the expectations of participants.[20] The researchers asked the participants to wait in a room that they called an 'academic's study' and later asked the participants to recall items that were in the room. Several participants said that there were books in the room, but none were: they expected them to be there because of the association they made with the 'academic's study'.

Schemas are used by humans on a daily basis. One's schema could be bias, different from that culture's ideology or able to change. What this does to a person is of value to the field of psychology, as well as in other fields of research. To investigate the experience of the person when a schema is changed, could give a new perspective on development of e.g. video games. Is it beneficial that one's schema is questioned more often, how can we challenge

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[14] Van Rooij et al. *Monitor Internet En Jongeren: Videogames En Nederlandse Jongeren.* (Rotterdam: IVO, 2008), 8

[15] Ipsos MediaCT. "The 2015 Essential Facts About the Computer and Video Game Industry." *Entertainment Software Association.* Available online at: *http://www. theesa.com/wp-content/uploads/2015/04/ESA-Essential-Facts-2015.pdf* (2015). 2

[16] Idem, p.3

[17] Paul DiMaggio, "Culture and cognition," *Annual Review of Sociology* Vol. 23 (1997): 263 – 287, accessed November 10, 2016, doi: 10.1146/aanuver.soc.23.1.263

[18] Jean Matter Mandler, *Stories, Scripts, and Scenes: Aspects of Schema Theory*, (San Diego: Psychology Press, 1984)

[19] Susan Fiske & S.E. Taylor, *Social cognition: From brains to culture* (New York: McGraw-Hill, 2008), 92

[20] William Brewer & James Treyens, "Role of Schemata in Memory of Places," *Cognitive Psychology* Vol. 13 No. 2 (1981): 207 – 230

one's schema in gameplay or is that even something the players want? These questions add to the social relevance of this research. This could lead to innovative games with different habituation. Schema is researched interdisciplinary in the context of gender distribution in video games: Downs and Smith studied if the representation of females in video games will create schema's of females as sexual or submissive.[21] Likewise, the deviation of schema as a gameplay element is studied by Charley Reed: he researched how the horror game RESIDENT EVIL uses the notion of corruption to interfere with the players' schema in order to provoke fear.[22] This research is a prime example of how utilizing schema theory by game designers can contribute to different video game genres. RESIDENT EVIL goes against the schema of the player with the intention to scare them in a horror or thriller video game. Reed's investigation into schema theory related to video games is therefore used as exemplary case for this research.

Aside from adding to one's schema or stepping away from it, the utilization of people's existing schemata play a role in video games as well. As demonstrated by this quote from Douglas and Hargadon: "Our enjoyment in engagement lies in our ability to call upon a range of schemata. The pleasures of immersion stem from our being completely absorbed within the ebb and flow of a familiar narrative schema".[23] Therefore, the notion of schema can be beneficial to the player's experience when retained, while deviation from it does call upon emotions but has not been studied yet in correlation with player experience. That is why this effect on player experience will be analyzed in this research.

2.3 Unfamiliar with the familiar

In some instances, after seeing an object for several times, we begin to overlook it without recognizing the object: "The object is in front of us and we know about it, but we do not see it – hence we cannot say anything significant about it".[24] Therefore, there is a technique that keeps viewers on their toes and goes against their habit and schemata: defamiliarization. This is a theory mostly used in art and is written on by Viktor Shklovsky.[25] To him, an artist can defamiliarize art by keeping an object's fundamental meaning but changing the way the object is conveyed. This technique uses objects in a way that they are not normally portrayed and also makes our awareness for the object return: "And art exists that one may recover the

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[21] Edward Downs & Stacy L. Smith, "Keeping Abreast of Hypersexuality: A Video Game Character Content Analysis," *Sex Roles 62* (2010): 721, accessed November 20, 2016, doi: 10.1007/s11199-009-9637-1

[22] Charley Reed, "Resident Evil's Rhetoric: The Communication of Corruption in Survival Horror Video Games," *Games and Culture* 11, No. 6 (2015): 625 – 643, accessed on October 10, 2016

[23] Yellowlees Douglas & Andrew Hargadon, *The pleasure principle: Immersion, engagement, flow,* (New York: ACM Press, 2000), 153 - 160

[24] Viktor Shklovsky, "Art as Technique," in *Literary theory: An Anthology*, ed. Julie Rivkin & Michael Ryan (Oxford: Blackwell Publishing, 1917), 8

[25] Idem, p. 15 – 21

sensation of life; it exists to make one feel things, to make the stone stony".[26] To give an example of this, we look at the movies directed by Quentin Tarantino. Tarantino is known for using overused characters in familiar genres. But to keep the audience interested and on their toes, he adds comedy in combination with shocking violence in his movies. As he states himself, he uses this defamiliarization because "it keeps the audience off balance – you never know when a funny scene is going to turn a dark corner or if a murder is leading to a punch line".[27] This is how the director goes against the habits that viewers have from watching other movies and breaks through the schemata and expectations of the plot from the viewers. Quentin Tarantino 'foregrounds' the violence and comedy to defamiliarize. According to the theory of defamiliarization "the immediate effect of foregrounding is to make strange, to achieve defamiliarization".[28] The opposite of automatization is foregrounding, and the more something is automized, the less it is consciously executed. "The more it is foregrounded, the more completely conscious it becomes. Objectively speaking: automatization schematizes an event; foregrounding means the violation of the scheme".[29]

2.4 Processes and persuasion

Now that it has become evident that some easy games can be explored by using one's schema and familiarity, some games require more than that. With some games, understanding the message and procedures of a game can be done by reading a summary or a review. But certain genres, such as art games, may need some explanation. For example, the game THE MARRIAGE by Rob Humble.[30] For an observer THE MARRIAGE is nothing more than a game about a pink and blue square that bounce around the screen while they collide with circles (as seen in Figure 1).

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[26] Viktor Shklovsky, "Art as Technique," in *Literary theory: An Anthology*, ed. Julie Rivkin & Michael Ryan (Oxford: Blackwell Publishing, 1917), 9
[27] Quentin Tarantino, interview with Joshua Mooney, in *Quentin Tarantino Interviews,* ed. Gerald Peary (Jackson: University of Mississippi Press, 1998)
[28] David S. Miall & Don Kuiken, "Foregrounding, Defamiliarization, and Affect Response to Literary Stories," *Poetics University of Alberta Vol. 22, Issue 5 (1994):* 391, accessed on March 2, 2017, doi: 10.1016/0304-422X(94)00011-5
[29] Jan Mukarovský, "Standard language and poetic language," in *A Prague School reader on esthetics, literary structure, and style*, ed. P.L. Garvin (Washington DC: Georgetown University Press, 1964) 19
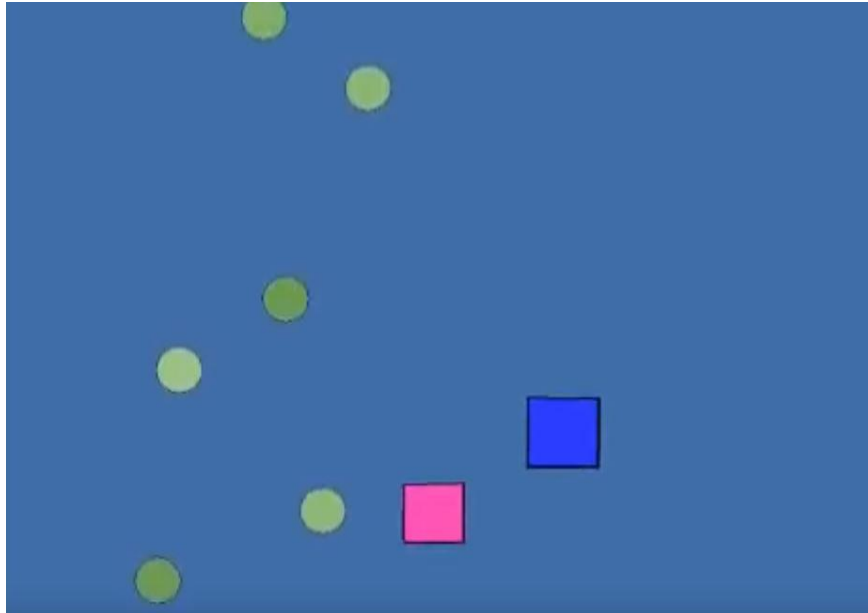[30] Rod Humble, *The Marriage*, Video game, Rodvik, 2007

Figure 1: Screenshot of the game THE MARRIAGE

Aside from reading the long explanation text the creator of the game has written, there is another method to give meaning to this game. One of the ways that make video games interesting is their ability to let players influence the game, as well as the other way around, giving it ways other narrative styles may lack. This method of game development is characterized by rhetoric: "The ways in which signs influence people".[31] A rhetorical analysis makes use of rhetorical concepts to describe the social or epistemological functions of the object of study. Rhetoric can be subdivided into verbal and visual: but neither is explored in video games yet. Verbal rhetoric is the practice of using speech persuasively, and visual rhetoric uses images to do this. To see what kind of rhetoric needed to use to decipher games, we can look at other media. For example, in advertisements the visual rhetoric is a standout notion. What advertisers try to avoid is the implications of persuasion: persuasion implies that the audience thought thoroughly before buying the product and make a conscious decision. Instead, the advertisers want to let people buy a product without them even knowing why. So an unconscious decision; a visceral response to a stimulus. Unfortunately, visual rhetoric is best done through images: "In procedural media like video games, images are frequently constructed, selected, or sequenced in code, making the stock tools of visual rhetoric inadequate. Image is subordinate to process".[32]

Since video games are played on a digital device, digital rhetoric seems a logical notion to look at next. Digital rhetoric "abstracts the computer as a consideration, focusing on the text and image content a machine might host and the communities of practice are which that content is used and created". While digital rhetoric does convey characteristics

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[31] Barry Brummett, *Rhetoric in popular culture* (London: Sage, 2006), 4
[32] Ian Bogost, *Persuasive Games,* (Cambridge: MIT Press, 2007), 25

that are a part of computers and games such as speed, reach, anonymity and interactivity. What it lacks is 'procedurality', according to Ian Bogost. This then leads to the term derived from Bogost's work, procedural rhetoric. It can be described as: "The practice of using processes persuasively. More specifically, procedural rhetoric is the practice of persuading through processes in general and computational processes in particular".[33] The rhetoric focuses on the persuasion, whereas procedures are understood as "established, entrenched ways of doing things".[34] Together procedural rhetoric is the game makers act of making an expression or argument through a game's processes or rules. Procedural rhetoric is a sub domain of procedural authorship: "Its arguments are made not through the construction of words or images, but through the authorship of rules of behavior, the construction of dynamic models".[35] Therefore, this research analyzes the procedural rhetoric in DEFAULT DAN and THE STANLEY PARABLE, in order to give meaning to the elements that diverge from schema and habituation.

The study by Treanor, Schweizer, Bogost and Mateas builds further on the notion of procedural rhetoric. To find meaning in a game, they read the game and present a framework for meaning derivations.[36] A meaning derivation is "a hierarchical, structured 'proof' for what a game means and is the method for a procedural reading. The point here is not to say that meaning can be objectively proved, but instead to compensate for the lack of attention to detail in the current state of video game interpretation".[37] The pieces that the researcher finds are thus put together to give meaning. An important notion that Treanor et al. use is culture. For example, light can be interpreted as something powerful and happy, but that is not the case in every culture. In that study, as well as this one, a meaning derivation should hold for at least one culture.

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[33] Ian Bogost, *Persuasive Games,* (Cambridge: MIT Press, 2007), 3
[34] Idem, p. 3
[35] Idem, p. 29
[36] Mike Treanor, Ian Bogost & Michael Mateas, "Proceduralist Readings: How to find meaning in games with graphical logics," in *Proceedings of the 6th International Conference on Foundations of Digital Games,* (University of California: ACM, 2011) 115 – 122
[37] Idem, p. 7

3. The method

3.1 Textual analysis and autoethnography

In this research, the main research question and sub questions are answered through a qualitative analysis. Qualitative analysis, the counterpart of quantitative research, is a method where the focus lies on the search for interpretation and meaning, instead of numbers. It is used to investigate the core of a certain phenomenon. Through interpretation "empirical data are gathered, analyzed and reported in a systematic and ascertainable way".[38] The different steps of analysis (defining the problem, drafting the questions, data collection, analysis, etc.) are not done in a specific order. Returning to a step or doing this several times is also conventional and therein lays the strength of this method: "The method lets the researcher come in close contact with the complex reality that in qualitative research is often studied in a natural and day to day context".[39] To specify this method, a textual analysis will take place. This is a qualitative method by studying the 'text' of a video game, where the text is used as a sample or case study in order to make sense of a specific issue or topic.[40] This is done through not just observing but also describing the arguments and inductive reasoning. "While textual analysis is party trying to make sense of a text, while it may also address the varied ways in which different people can interpret it".[41] This wide approach limits the amount of games to investigate, seems to fit best with this research and will be combined with procedural rhetoric.[42] The key procedural rhetorical elements that subvert from schema and habituation will be investigated. DEFAULT DAN and THE STANLEY PARABLE are analyzed for key areas to see how they subvert from schema and habit to see if they defamiliarize the audience with their product.

In this research, two games that are textually analyzed will first be categorized in the different elements of procedural rhetoric. The analysis focusses on these specific elements and how they are used on diverging from schema theory and habituation. To explore this connection between the object of analysis and the player experience, an autoethnography is executed as a supplementary method. General ethnography is a qualitative research method in the social sciences that uses fieldwork to decipher human social phenomena. Whereas autoethnography puts the researcher as the primary participant and subject. Autoethnography can be described as "a form of qualitative research in which an author uses self-reflection and writing to explore their personal experience and connect this

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[38] Thomas Plochg & Myra van Zwieten, "Kwalitatief onderzoek," In *Nederlands Handboek Gezondheidszorgonderzoek (*Amsterdam: Bohn Stafleu van Loghum, 2007), 77

[39] Idem, p. 77 - 93

[40] Clara Fernández-Vara, *Introduction to Game Analysis*, (New York: Routledge, 2015)

[41] Idem, p. 9

[42] Ian Bogost, *Persuasive Games,* (Cambridge: MIT Press, 2007)

autobiographical story to wider cultural, political, and social meanings and understandings".[43] So the focus lies on making a portrait of the 'self', as opposed to a portrait of a group, another person or culture. This research method is based on personal experiences and how an event or practice has impacted the researcher's life and therefore has a different writing style than an academic report. Carolyn Ellis has researched how autoethnographic papers should be evaluated because of the unusual writing style and personal claims made in the research. Ellis found a research done by Laurel Richardson and the five factors she uses when reviewing personal narrative papers that include analyses. The criteria are: "1) Substantive contribution. Does the piece contribute to our understanding of social life? 2) Aesthetic merit. Does this piece succeed aesthetically? Is the text artistically shaped, satisfyingly complex, and not boring? 3) Reflexivity. How did the author come to write this text? How has the author's subjectivity been both a producer and a product of this text? 4) Impactfulness. Does this affect me emotionally and/or intellectually? Does it generate new questions or move me to action? 5) Express a reality. Does this text embody a fleshed out sense of lived experience?".[44] Since this evaluating method is not specifically tailored for autoethnography, Ellis, Adams and Jones created a list of Goals for Assessing Autoethnography. According to them, autoethnography should: "Make contributions to knowledge, value the personal and experiential, demonstrate the power, craft and responsibilities of stories and storytelling, and take a relationally responsible approach to research practice and representation".[45] With these criteria, the autoethnographic analysis of THE STANLEY PARABLE and DEFAULT DAN will be made. This analysis is made to give an insight into the sub question: how do the procedural rhetorical elements influence the player and his behavior? Through the researchers own experiences and views on the games, a depiction of a player of both games will be made. By following the guidelines, as described previously, the researcher will contribute to answering the sub question and therefore also the main question of this study. This method is chosen so that it will shed a different light on video games and its players that related studies have not yet done. This approach has several strengths according to Manning and Adams.[46] Firstly, autoethnography uses personal experience to reflect upon and find resemblance popular culture theories and texts. Second, this method is also used to criticize or go against popular culture texts. Thirdly, the researcher in the autoethnography can act as an audience member and how he or she

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[43] Carolyn Ellis, *The ethnographic I: A methodological novel about autoethnography* (Walnut Creek: AltaMira Press, 2004)

[44] Laurel Richardson, "Evaluating ethnography," *Qualitative Inquiry* 6, No. 2 (2000): 253- 255, accessed on January 15, 2017

[45] Tony E. Adams, Stacy Holman Jones & Carolyn Ellis, *Autoethnography: Understanding Qualitative Research,* Oxford: Oxford University Press, 2015

[46] Jimmie Manning & Tony E. Adams, "Popular Culture Studies and Autoethnography: An Essay On Method," *The Popular Culture Studies Journal, Vol. 3 No. 1&2 (2015): 199 – 200, accessed on November 20, 2016*

engages to the subject at hand. Next, autoethnography can describe the processes that contribute to the subjects' production. Lastly, autoethnography finds its strength in that it creates accessible research texts that can be grasped by a variety of people.

To answer the research question and the additional sub questions, the two different video games DEFAULT DAN and THE STANLEY PARABLE were selected. Although they conceptualize separate video game genres, they both diverge in different ways from players' schemata or subvert habituation. By observing the game DEFAULT DAN it is shown how it uses explicit elements to convey defamiliarization: it conveys its procedural rhetorical elements through visuals and gameplay implications. What you see is what you get. Contradictory, the game THE STANLEY PARABLE uses so called implicit elements to convey the diverging of habituation and schema: the underlying message and self-reflectivity of the player. Just these two games were selected because they embody the implicit and explicit approach to defamiliarize video game players and possibly critique the industry. No more than two games were selected to keep the research focused and small-scaled. The games will be analyzed on the basis of 'playthrough' or 'walkthrough' video's. This way, the researcher hasn't played either game in the first half of the analysis, but is still able to analyze the games proficiently. After the first half of the analysis, both games will be played by the researcher. By playing the game, the elements analyzed before, can be explored in this autoethnography and hopefully validate and add to the findings in the formal analysis with the autoethnography. Those rhetorical elements that have the most impact, influencing habituation and diverging from schemata, while playing the game, will hopefully be confirmed.

3.2 The corpus

The games that will be studied for this research are DEFAULT DAN and THE STANLEY PARABLE. DEFAULT DAN is developed by Kikiwik Games and was released on the 15th of January 2015. This platform game started as a crowd funding campaign through Kickstarter in 2013, but can now be played and downloaded from entertainment platform Steam. In the description, Kikiwik Games writes: "In this world, looks can be deceiving. Dan's dimwitted best friend has been abducted by a mean-spirited little princess. In order to rescue his friend, Dan must defeat the princess and her army of cute minions".[47] This description shows one of the many ways this game goes against gaming conventions. In a classic game, such as SUPER MARIO BROS., the princess needs to be saved from the evil reptile/monster but DEFAULT DAN flips this around. Furthermore, this narrative is not the only gameplay element that goes against a gamer's instinct. The gaming mechanics are 'backwards': coins, power-ups

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[47] "Default Dan," last modified on 18th of January, 2016, http://store.steampowered.com/app/337670/?l=dutch

and hearts are negative and can kill the player. Whereas the elements that are negative in conventional games, are positive in DEFAULT DAN: enemies and hazards help the player out in this game. The player has to collect dangerous objects, as bombs, and avoid smiling clouds, as seen in Figure 2.

Figure 2: A screenshot from the game DEFAULT DAN

The second game that will be researched is THE STANLEY PARABLE. At the age of only 22, Davey Wreden released the free downloadable modification of the popular game Half Life 2 in 2011 that was THE STANLEY PARABLE. Within two weeks of the game's release, the game was downloaded over 90.000 times. Due to its success, the game was developed into as a full game on Steam in 2013. In the game, the player assumes the role of the main character Stanley. A disembodied narrator starts off the game by saying that Stanley works at a monotonous job, but that he is happy with what he does and doesn't question it. But one day, all of his colleagues have gone missing and it is up to Stanley to find out what is going on. One of the ways that makes this game remarkable is the narration. The most narratological element in the game is the narrator that talks to the player in a past tense about Stanley. For example, the player encounters two doors while the narrator says: "When Stanley came to a set of two open doors, he entered the door on his left." This exact moment is depicted in Figure 3. The player can choose to follow the directions of the narrator or not and this leads the game to eighteen different endings. On the modification host page in the 'About' section, Wreden wrote: "The game is an experimental narrative-driven first person game. An exploration of choice, freedom, storytelling and reality, all examined through the lens of what it means to play a video game. You will make a choice that does not matter. You will follow a

story that has no end. You will play a game that you cannot win".[48] In an interview with Wired magazine, Wreden was asked about the design ethos for THE STANLEY PARABLE and he said: "I wanted this to be a kind of slap to the face [to video game developers]".[49] For that reason, the video game has been studied in several researches.[50] These investigate how the game is about games themselves, self-awareness of the player, the agency of the play, etcetera.[51] [52] The game goes against conventions and is therefore a prime example of rejecting habituation.

Figure 3: A screenshot from the game THE STANLEY PARABLE

[48] "The Stanley Parable," last modified on 20th of October, 2013, https://www.stanleyparable.com/
[49] Jason Schreier, "Brilliant Indie Game The Stanley Parable Will Mess With Your Head," *Wired,* August 16, 2011, accessed on October 6, 2016, https://www.wired.com/2011/08/the-stanley-parable/
[50] Muscat et al., "First-Person Walkers: Understanding the Walker Experience through Four Design Themes," in *First International Joint Conference of DiGRA and FDG* (Melbourne: RMIT University, 2016) 1 - 15
[51] Astrid Ensslin, *Video Games as Unnatural Narratives*. (Wales: Bangor University Meson Press, 2015)
[52] Lars de Wildt, "Precarious Play: To Be Or Not to Be Stanley," *Press Start* Vol.1 No.1 (2014): 1 – 20, accessed on October 11, 2016.

4. Analysis

4.1 Default Dan: good is evil and evil is good

DEFAULT DAN is a seemingly straightforward game. All the basic video game elements are there: a main character Dan, a friend, an enemy and good or bad beings that you run into along your way towards the end goal. But the details in this game show how it diverges from habituation. Therefore, two categories are proposed to highlight the diverging procedural rhetorical elements: score and instructions.

The category score embodies every component in DEFAULT DAN that influences the calculated score at the end of every level. When the player finishes a level, a scoreboard appears. The player's score depends on the amount of trophies collected, times died and time needed to complete the level. But to get a score and finish a level, there are elements that can influence it and also go against the initial habituation of the player. Firstly, there is a distinction between 'good' and 'evil'. Since the player can't judge these elements by how they look, they are put into this category because of their functions. The 'evil' summons the things that are there to counteract or halt the player from advancing in the game. The 'good' summarizes things that help the player in the game or are just there. Things that can be classified in DEFAULT DAN as 'evil' are: the seemingly happy critters, certain platforms, hearts, the princess and her cloud, springs and jumping hearts. All of these elements are depicted in Figure 4.
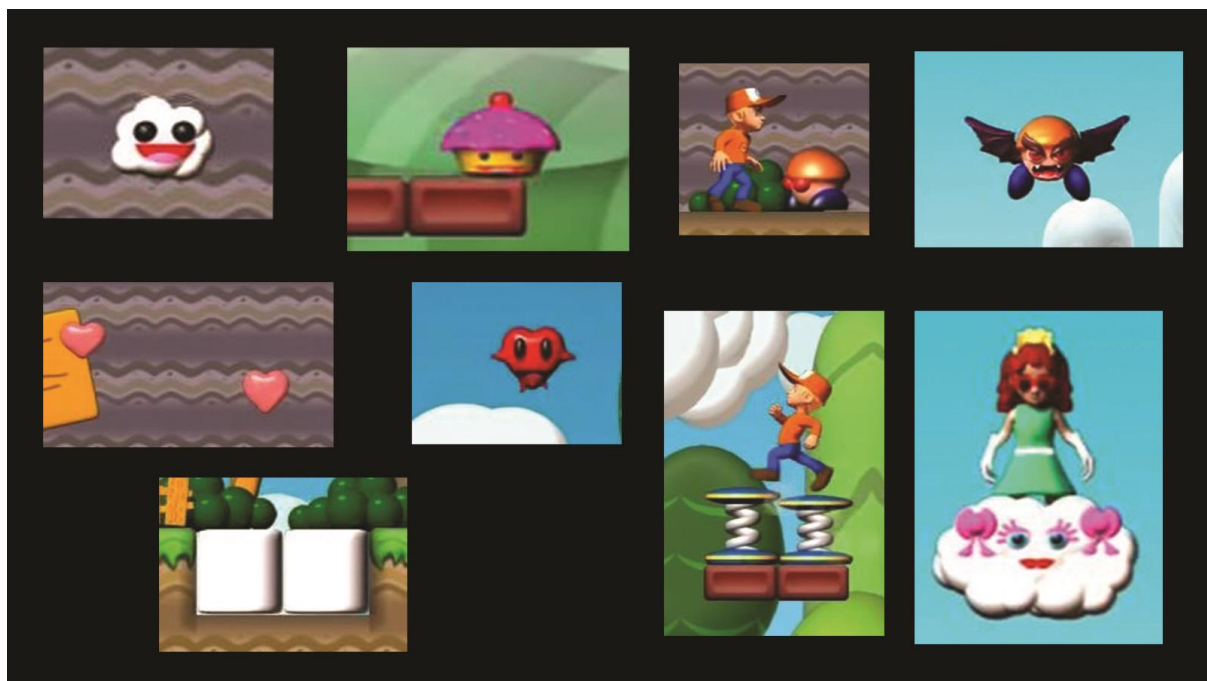

Figure 4: The 'evil' elements in DEFAULT DAN

Making contact with some beings will kill Dan and make his body separate in several pieces that explode and fly around the level. Whereas, other procedural rhetorical elements don't kill but halt the player and inflict the score. The 'good' elements are depicted in Figure 5. This category entails the friendly turtle, the carnivorous plants, cliffs, spikes and the actions of standing on top of a critter or attacking it from below. All of these elements benefit the player when encountering them and help the player get a better score at the end of the level.

Figure 5: The 'good' elements in DEFAULT DAN

The elements of 'instructions' entail the signs that are visible on every stage in this platform game. The programmers have used the basic knowledge of a gamer to be able to skip over some instructions for the game: there is no instruction on how to move from left to right and how to pause the game, but other aspects are explained. What makes these signs interesting is their text. For example, the first sign the player encounters states: 'You know x-actly how to jump'. This refers to the x-button on a player's controller and by pressing it, it makes Dan jump. The first couple of signs give helpful instructions, but later on the signs deceive the player. For example, a sign says: 'I'm sorry for tricking you, have a cupcake'. When the player passes that sign, he encounters a cupcake critter for the first time. If the player accepts the offer and touches the cupcake, he dies. From that point on, the player has to decide with either sign if he should trust it or not.

What all of these elements do is defamiliarize the player with the objects that are present in the game. There are certain foregrounded aspects that the player usually skips or

ignores, in order to break the player's habit and schemata. Firstly, the game developers have played around with the visual connotations. A pallet of bright colors has been used throughout the game in combination with visuals that tell of something or someone is good or evil. The elements that are categorized as bad all show bright, usually pink and happy colors. The critters that are evil all have smiles on their faces. In games and in real life, people assumedly linked smiling and radiant colors to something positive in their schema. The opposite is evident for the 'good' beings in DEFAULT DAN. For example, the carnivorous plants have dark eyes, sharp teeth and are known for eating meat. Their visuals do match with the habituation a player may have, but not what they represent in the game. The developers used an element the player is familiar with, a heart or spike, and kept that object as it is, but added an unanticipated element.

Then there are the gameplay connotations: the elements that gamers have made schemata of because of their exposure to other video games. There are certain processes and constructions that a player could be familiar with because of his/her gaming experience. For example, the mushroom figure looks like the 'goomba' in the SUPER MARIO games. In SUPER MARIO, the goomba can be killed by jumping on its head. Since SUPER MARIO is such an iconic game, a game that set the basic rules and standards for games that were made later, that it can be said that these SUPER MARIO standards and rules are habituated with most gamers. But as shown, the processes and rules that are evident in other games are defamiliarized in this video game. This includes the actions a player can take to further himself into the game, for example how to kill or avoid a critter. It can be assumed that these gameplay connotations to make the player recognize – and not just ignore – the elements that make a platform game extraordinary. In other words: "To make the stone stony".[53] The connotations that the player has become too familiar with, such as collecting coins and specific creatures, are foregrounded in order to make them stand out and to let the player see what makes a game special.

The plot of the game goes against schemata through role reversal. The main enemy of the game is a princess and her cloud and the friend of Dan is a turtle. The princess kidnaps Dan's friend in the beginning of the game and therefore Dan has to fight her in the final level to free the turtle from a cage. The player may recognize this reversal because of fairy tales: the princess is usually the hero of the story and a monster, in this case a turtle, is the foe. The roles in DEFAULT DAN are reversed from regular fairy tales, and the roles therefore are foregrounded in the game and defamiliarized.

Lastly, there are some in-game signs at work to defamiliarize the player with the instructions of the game. As discussed earlier, the signs in DEFAULT DAN are placed to give

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[53] Viktor Shklovsky, "Art as Technique," in *Literary theory: An Anthology*, ed. Julie Rivkin & Michael Ryan (Oxford: Blackwell Publishing, 1917), 9

player instructions on how to play the game, but also contradict its own signs to tease the player. In the first level the signs tell the truth on how to progress, but the signs later on contravene; if the player does the exact opposite of what these signs say, he can progress. This shows how the game developers toy with the players schemata on authority. Road signs are a sign of authority: of the developers speaking directly to the player and guiding the player. By falsifying what an authority figure is conveying, the schemata of authority for the player are challenged. Similarly to the research of Reed on corruption and schema theory, DEFAULT DAN evokes not fear but lets the player reflect on the relationship between the player and the developer.[54] This relationship has been challenged by the signs in the game and goes against the habit of not questioning an authority figure like the developers.

4.2 The Stanley Parable: the end is never

Similarly as the analysis of DEFAULT DAN, two procedural rhetorical elements of the game THE STANLEY PARABLE will be researched: score and instructions. THE STANLEY PARABLE is not as straightforward as DEFAULT DAN and therefore the elements are a bit more abstract. Firstly, the game is non-linear because there is no end goal and the player can or has to reset the game to keep playing. There are about eighteen 'endings' to THE STANLEY PARABLE. The word ending is written here between quotation marks because the game doesn't stop on its own: the player chooses to reset the game in order to find the other 'endings'. This element is emphasized by the text in the loading screen. Every time the player resets the game or the game has to load a new area, the text 'the end is never' is looped at the bottom of the screen. This can be seen in Figure 6.

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[54] Charley Reed, "Resident Evil's Rhetoric: The Communication of Corruption in Survival Horror Video Games," *Games and Culture* 11, No. 6 (2015): 625 – 643, accessed on October 10, 2016

Figure 6: The loading screen in THE STANLEY PARABLE

There are other first-person exploration games that are non-linear as well. What makes THE STANLEY PARABLE different from those games is that the player gets no indications on when the game stops or what the expected end goal is. Throughout this game, there is no indication that this game has an ending. The Narrator even says: "You think this video game can be beaten?". In one playthrough of the game, the player gets the words 'YOU WIN' on the screen, only to find out that this is a sarcastic joke and that the game restarts itself after that point. Moreover, there is only one ending that the game indicates as correct. The playthrough that leads to that ending can be assumed to be the only normal, habituated ending. To get to this ending, the player has to follow every instruction the Narrator gives and not stray from that path. This path could have been a separate game altogether: it explains the backstory and future of the main character Stanley, the story gives answers to the main problem in the game and it is clear where this specific playthrough ends. In other playthroughs, the Narrator tells Stanley that the previous path was the 'correct' one, and gets angry at Stanley when he doesn't take that route. In other games, for example the non-linear first-person explorer THE VANISHING OF ETHAN CARTER, the player has to decipher how the main character has disappeared by walking around the environment and piece the story together.[55] But what makes this game different from THE STANLEY PARABLE is that here the player gets hints on what the goal of the game is through the name of the game, the narration and the sequences of the plot. The player could be familiar with these kinds of games, but it is defamiliarized for him by the foregrounding of the ability to reset and follow different paths. The habit of the player would be to play a game through until he gets an indication

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[55] "The Vanishing of Ethan Carter," last modified on September 15, 2015.
http://store.steampowered.com/app/258520/?l=dutch

that the game is over. The player gets this indication only with 'the correct playthrough', but is left on his own to decipher when to restart the game or when all the possible paths have been taken. It can be said that the gameplay connotations, the rules the player has learned from other games, are defamiliarized in this game in order to foreground the rules and make the player and game developers reflect upon and question them.

The instructions in the game are quite direct and present for the player. The most prominent element that gives the player instructions is the Narrator. He starts out like any other narrator: explaining the story and telling how Stanley feels about the situation. Then there is a shift in power: shortly after Stanley makes the choice of walking out of his own office space and into the main building, he steps into a room with two doors. The Narrator then speaks the lines: "Stanley comes to a set of two open doors. He enters the one on his left". The player has the choice to obey and choose the door on the left or to go against the grain and choose the door on the right. When a different path than the direction the Narrator has provided, the fourth wall is broken. The Narrator reacts when you don't take the path he has set out for you and can become angry at Stanley and the player separately. From this point on, power and the abuse of it becomes clear in THE STANLEY PARABLE. The Narrator's voice is almost always present in the game: he says how Stanley is feeling and thinking, what choices Stanley has made in story form ("Stanley walked into the boardroom"), and talks about what is on his own mind. Likewise, other instructions are placed throughout the environment of the game. During one certain playthrough, the player encounters a yellow line on the floor. This line is the main subject of that playthrough and it leads the player to rooms that previously weren't open. Both the line and the Narrator are authority figures in the game: they help the player prosper in the game, but also lead the player to a dead end or lie to the player. Just as in DEFAULT DAN, corruption takes place through misleading authority figures. It goes against the schema that people may have of hierarchy and dominance. Authority figures, such as the guidance of the yellow line or the Narrator, are associated with beneficial services but their roles are reversed in THE STANLEY PARABLE. The fact that a usually objective narrator is turned into a lying, humanized voice-over goes against the schemata of a player. The habit of just following instructions in a video game is opposed and defamiliarized by giving the narrator deceiving qualities.

All of these elements combined leads to the foregrounded notion of freedom of choice in video games and real life. In one playthrough when the player teases the Narrator, the voice-over chooses to change the exterior of Stanley: Stanley suddenly becomes a fat loser that only got the job because of his family connections. There, the Narrator is in full control, but in some situations it looks like the tables have been turned. During one path the player can choose to commit suicide by climbing up a couple of stairs and jumping off the edge. Here it becomes clear that the Narrator has his own purpose: staying 'alive' by keeping the

player from resetting or leaving the game. In this segment the player has the power to end this path/game by committing suicide and the Narrator has seemingly no influence on this. Even though committing suicide seems like a free choice and a powerful option, in the end there was no free will at all. There were only three options for the player all along: jumping off that edge, resetting the game before doing anything else, or quitting the game all together. It becomes evident that the developers want to defamiliarize the player with their freedom and what actual freedom is. It can be assumed that this notion is taken for granted and by highlighting it in this game, can make the player reflect on his own life and show the processes in video games. Whereas other games have the process of following a process, the structure in this game is free to a limit.

The game programmers are aware of the entire player's options, mapped them out and confront the player with each of these choices. Later on, a female narrator tells the player: "Stopping now is the only real choice you can make". The repetition of certain elements emphasize that: suddenly changing a hallway into a looping circle gives a sense of being trapped by the programmers. It shows the power they have over the player and that there is no escape. Another example of this is when the player chooses a path that leads him to an apartment. The Narrator talks about Stanley's job and how he does nothing but being forced to push buttons at work. While the Narrator speaks, text appears on the screen telling the player to push a certain button to proceed. By doing this, a parallel is shown between Stanley's monotone existence and the exact same thing the player is currently doing. The game wants to make clear that your choices have no value. Other games try to hide the fact that the player has no freedom of choice, by masking it with an entertaining plot or graphics. THE STANLEY PARABLE purposefully makes this the main subject of the game and the plot and (lack of) graphics fade to the background. This is a subject that the player or any person doesn't come in contact with very often. It turns the story of the game from entertaining to existential. It can be assumed that this is the motivation of the developers: to make the player reflect on his own life as a video game player and as a human being. As well as making game developers question what their games do to challenge the player and what message it is sending. This is made evident by the developer of THE STANLEY PARABLE with the quote: "I wanted this to be a kind of slap to the face [to video game developers]".[56]

4.3 Autoethnography

When I was ten, I got my very own Game Boy. Before that, I had to share one with my sister, but that only ended in high pitched screams and nail marks on my arm. Every summer that my family and I would go on holiday to Italy, I would be glued to the screen of my Game Boy.

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[56] Jason Schreier, "Brilliant Indie Game The Stanley Parable Will Mess With Your Head," *Wired,* August 16, 2011, accessed on October 6, 2016, https://www.wired.com/2011/08/the-stanley-parable/

I even played when it was dark outside, because I saved up to buy an attachment that had a magnifying glass and lights on the sides. It was my favorite toy I as a kid: me and my yellow Game Boy were inseparable. The first game thatme and my sister had was the Asterix & Obelix game. Our parents bought us the game in Italy and the only languages the game could be set to were English, French and German. We couldn't understand one bit of the story of the game and for some reason Obelix was playing rugby in the game all of a sudden. Very strange, but it didn't matter to us. That game kick started my love for video games. But we had the most fun when we handed the Game Boy to one of our parents: they were terrible at it.

The first gap. They couldn't get past the first gap in the game. It was hilarious. But it did make me aware that I was good at video games and that I didn't have to think about every move I was making in the game. My timing and reflexes were able to play almost every game. But when I started playing Default Dan, I felt like my mom. I felt like a beginner again. Every jump felt like an impossible task and I have never had to think that much while playing a video game before. Now I get why my mom would try to jump that first gap in Asterix & Obelix ten times, get frustrated, and then put the game away for a while. Everything I had learned from my hours of playing Super Mario Bros., The Powerpuff Girls and The Lion King were wasted and could be thrown out of the window. The connotation that I had learned in games and offline were useless when playing this game. But how did these elements influence my behavior as a 'video game native'? I was hoping that I could say that these visuals, gameplay and role-reversal in the plot made me reflect upon my attitude as a gamer, but unfortunately it did not. They didn't affect me much: a little smile appeared on my face and I let out a little air through my nose, but that was it. For me these connotations weren't represented strong enough to have an impact on me. Surprisingly, there was one element in both games that did leave an impression on me: the corruption through authority. This made me reflect upon the many jobs I've had: delivering newspapers, working behind a register in a supermarket and kiosk, being a 3D animator, student assistant, tutoring high schoolers and currently as a freelance journalist. And with every job that my boss would talk to me about my performance or tasks, I would slightly feel like Stanley: sometimes you just don't know which instructions you should follow in order to do your job well. There was always a colleague giving me instructions, or the boss, or the boss's boss. And just like with Stanley, following the voice that is the loudest or most obvious, doesn't always lead you to the destination that you think you were going to. For example, when I was working in a supermarket an announcement came one day that a meeting would be held for all the staff and that it was mandatory. I only worked there in the weekends, so when I asked the boss about it she stressed that I should come. But when I talked to the supermarket manager, he said that I didn't have to come because I was just a

girl that worked two days a week. Later on, when I asked that other weekend employees, none of them were planning on going. It left me very confused. I was a very shy person, so in my head I had to follow the orders of my boss. I did, and I regret it because that meeting was of no use to me. I went because I wanted to make a good impression at my job, because I thought that was the thing I had to do. I felt betrayed, unimportant and not taken seriously. The authority figure that is supposed to help me, didn't guide me correctly. And now that I have an actual adult job, I will question the authority figures. I won't go as far as to say that the company that I work for is corrupt, but every job comes with a set of unwritten rules that I slowly uncovered when I started working there. Of course the actual signs at my job, the fire exit for example, I will still follow, but the signs given by humans will be taken into question from now on. Just like the voice-over in THE STANLEY PARABLE and the signs placed by the developers of DEFAULT DAN, the suggestions done by humans are questionable and should not be followed as a brain-dead zombie. It is clear to me that that is one of the main messages of these games: think for yourself.

I won't say that from now on I will play every game very consciously. The games that I play, I play because I want to unwind and just be entertained. And the best way to do that is immerse yourself into the game and be mindless for a while. But DEFAULT DAN and THE STANLEY PARABLE were good for me to have experienced. Just like watching a documentary about how people are destroying the environment or eating too much fast food: I reflect on my own lifestyle for a while and discuss it with others, but in the end, I return to my own habits and schemata, maybe with some added consciousness about my actions.

5. Conclusion and discussion

This thesis is centered on the following research question: *how do the video games DEFAULT DAN and THE STANLEY PARABLE diverge from habituation and familiarization and critique the increasing habituation of platform and first-person exploration games?*

It becomes evident in the analysis that DEFAULT DAN and THE STANLEY PARABLE have different methods of diverging from a player's schema and habituation. It becomes clear how the games toy with what the player is familiar with. By embracing the visual connotations and the gameplay connotations the player could be familiar with and reversing them, the developers defamiliarized these elements. Moreover, the corrupt authority figures are foregrounded to go against the habit of following the dominant instructions of games. In DEFAULT DAN this is done more explicitly, by simple signs on the side of the road, and in THE STANLEY PARABLE more implicitly, by letting the player discover this on his own. Lastly, in the autoethnography it becomes evident that this doesn't influence the player and her behavior much, but does make the player conscious about these design choices and let her self-reflect.

It can be concluded that both games critique habituation. This becomes most evident through the notion of freedom of choice in THE STANLEY PARABLE. By implying that video game developers gloss over the fact that the player is more than a consumer that doesn't think for himself. Additionally, by corrupting the authority a parallel is made between the authority of game developers and the submissive player and how that relation needs to be questioned from time to time. It can be assumed that this relationship between developers, researchers and video game players should be investigated elaborately and could therefore possibly change the video game industry and research.

Though not large in its size or arguing to be representative of all video games, this research does add to an understanding about games that diverge from habituation and schema. Extending to a focus group or interviews with video game natives could give a better understanding on the topic of this research. The opinion of one person in the autoethnography may have embodied several gamers, but not all of them. A larger group of people at the analysis could give a clearer insight into the population of 'native gamers' that are present in today's society. Another limitation of the current research is the theory of schema in combination with the reflexes and psychology of gamers. There is a large array of games and today's culture is partially fixated on quick adaption of change. Added research on schema theory on the brain of video game players could be beneficial to see if the assumptions made in this study are acknowledged by this specific group.

Further research could build upon the notion of culture, as discussed during the theory of procedural rhetoric.[57] The culture that is chosen for this research is the western culture, but this could be extended to for example Asian culture or the culture of one specific country. Those cultures are presumably different from the culture studied in this research and could give new insights into different habituation, behavior, schema theory and defamiliarization. Moreover, the player experience and enjoyment could be studied further on this topic of diverging from habituation. Although research has been done on the player experience of video games and the brain reaction to these games, the defamiliarization of these games has not.[58] [59] This additional research could tribute to see if the enjoyment and habituation of the player changes when playing these games and how these unconventional games could be improved, or made at all.

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[57] Mike Treanor, Ian Bogost & Michael Mateas, "Proceduralist Readings: How to find meaning in games with graphical logics," in *Proceedings of the 6th International Conference on Foundations of Digital Games,* (University of California: ACM, 2011) 115 – 122

[58] Chris Pedersen, Julian Togelius & Georgios N. Yannakakis. "Modeling Player Experience in Super Mario Bros," in *Computational Intelligence and Games (*Copenhagen: University of Copenhagen, 2009), 132 – 139

[59] Nacke et al., "Playability and Player Experience Research," in *DiGRA International Conference: Innovation in Games, Play, Practice and Theory* (England: Brunel University, 2009) 1 - 5

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