İSTANBUL BİLGİ UNIVERSITY
FACULTY OF COMMUNICATION

Six Degrees of Video Game Narrative:

A Classification for Narrative in Video Games

Sercan Şengün

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A Classification for Narrative in Video Games

Video Oyun Anlatımlarının Altı Derecesi:

Video Oyunlarındaki Anlatımlar için Bir Sınıflandırma

Sercan Şengün

111603003

Tez Danışmanı:	Yrd. Doç. Dr. Tuna Erdem
Jüri Üyesi:	Prof. Dr. Feride Çiçekoğlu
Jüri Üyesi:	Yrd. Doç. Dr. Tuna Erdem
Jüri Üyesi:	Prof. Dr. Halil Nalçaoğlu

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Anahtar Kelimeler

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Anahtar Kelimeler

1) Video Games
2) Digital Games
3) Game Design
4) Narrative
5) Interactive Narrative

ABSTRACT

This study aims to construct a systematical approach to classification of narrative usage in video games. The most recent dominant approaches of reading a video game text – narratology and ludology - are discussed. By inquiring the place of interactivity and autonomy inside the discourse of video game narrative, a classification is proposed. Consequently six groups of video games are determined, depending on the levels of combination of narration and ludic context. These *Six Degrees* are defined in detail and example video games are analysized for each. The conclusion composes a six degrees reference system that could be utilized in various fields such as video game design or video game studies.

ÖZET

Bu çalışma video oyunlarındaki anlatı kullanımlarının sınıflandırılması için sistematik bir yaklaşım kurmayı hedeflemektedir. Bir video oyun metninin okunması için en güncel ve baskın yaklaşımlar – naratoloji ve ludoloji – tartışılmıştır. Video oyun anlatılarında interaktivite ve otonominin yeri sorgulanarak bir sınıflandırma önerilmiştir. Sonuç olarak altı video oyun grubu tanımlanmıştır; bu gruplar anlatı ve ludolojik içeriğin kombinasyonlarının seviyesine göre oluşturulmuştur. Bu *Altı Derecenin* her biri detayları ile anlatılmış ve dereceye ait örnek video oyunları analiz edilmiştir. Sonuç olarak ortaya video oyun tasarımı ve video oyun çalışmalarında kullanılabilecek altı derecelik bir referans sistemi çıkmıştır.

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ABBREVIATIONS

4X	: Explore, Expand, Exploit and Exterminate
AI	: Artificial Intelligence
FPS	: First-person Shooter
JRPG	: Japanese Role Playing Game
MMO FPS	: Massively Multiplayer Online First-person Shooter
MMORPG	: Massively Multiplayer Online Role Playing Game
NPC	: Non-playable Character
RPG	: Role Playing Game
RTS	: Real-Time Strategy
STD	: Self-Determination Theory
TPS	: Third-person Shooter
UI	: User Interface

1. Introduction

1.1. A Question of Narrative

Narrative is an enigmatic and slippery entity for video game studies. Disciplines such as literature and theatre have accumulated potent narrative theories within their own domains over the centuries. Even comperatively younger disciplines such as film and television have already established basic foundations to discuss narratives in their own universe.

Yet whenever narrative is mentioned in video game studies, the context of the term seems to be still in debate. Supplementary terms such as intros, diegesis, cinematics, interactive narratives, cut-scenes, interactive stories, avatars, quests, interactive novels, storylines, textuality, adventure games, game worlds, context, open worlds, are used freely within the discourse of video game narrative – and sometimes interchangably. Coupled with the case that not all video games utilize narrative in the same way and with similar emphasis, this creates an impractical atmosphere to approach narrative in video game domain.

The aim of this work is to create a referential system that intends to help study narrative in video games, by creating a basis classification that levels narrative concepts in video games. The objective is for each classified group to have such recognizable characteristics, that the classification itself forms a comprehensible common language when talking about narrative in video games.

For this purpose, basic concepts of video game texts will be discussed to discover the correct criteria to form such a classification. After the criteria axes is finalized, the classification will compose six distinctive degrees of video games in which narrative was formed similarly (hence the name *Six Degrees)*. The theoretical base that forms each degree and the restrictions that limit their reach will be discussed and examples for each degree will be given.

The study also includes an application of the classification system to a practical and commercial approach at the conclusion.

1.2. Reading of a Video Game Text

Although video games have become one of the most consumed medium during the last decade[1], reading of a video game *text* is still an elusive subject. Defining a video game as a text is a conscious choice and the concept that is being referred here is the one Roland Barthes defines in his essay *From Work to Text*, the one that is "experienced only in an activity, in a production" and the one that "exists only when caught up in a discourse" (Barthes, 1977). In this aspect, a video game is more of a *Writerly Text* than a *Readerly Text* (as described by Barthes) not in the sense that it does not disturb common sense or "is controlled by the principle of non-contradiction" (Barthes, 1974, p. 156) but in the sense that the reader is no longer the consumer but also the producer of the text.

John Fiske extends this distinction by defining a third model; the *Producerly Text* that "relies on discursive competencies that the viewer already possesses, but requires that they are used in a self-interested, productive way […]" (Fiske, 1997, p. 95). This is relevant with the medium as the nature of video games invite its players to engage, interact, participate and thereby produce the meanings that result in pleasure for them. Fiske also concludes; "a work is potentially many texts, a text is a specific realization of that potential produced by the reader" (Fiske, 1997, p.96). This is a referance to the *textuality* of the work; a work is rarely a single text but an entity of plural texts conceieved by the readers. This creates even more relevancy, as video games regularly encourage its players to draw personal paths, discover secret content, achieve multiple endings, make decisions along the game play

[1] PriceWaterHouseCoopers' Ongoing Consumer Research Program published a research on video games consumption in 2012 that reveals the extensive times people spent playing video games. The report is accessible through this URL; http://www.pwc.com/sg/en/tice/assets/ticenews201206/evolutionvideogame201206.pdf

that affect the flow of the game, create distinct solutions and, overall, compose different experiences.

However referring a video game as a text might not go uncontested. In his book *Trigger Happy: Videogames and the Entertainment Revolution*, Steven Pool summarizes the possible resistance and concludes; "Videogames today find themselves in the position that the movies and jazz occupied before World War II: popular but despised, thought to be beneath serious evaluation" (Poole, 2004, p.13). Hence, defining one as a text might indicate that it is worth *reading*. Better put; "Reading has 'value', even the reading of the most popular forms of genre fiction: the playing of games 'wastes time' that might have been put to better use." (Atkins, 2003, p. 6) There is no denying that a large portion of video game production still seems to be catered to the fantasies of adolescent boys[2], yet this study is chasing a potential (a narrative potential to be more specific) on what video games have become recently and is likely to evolve into, in the future.

From the short time video games have become an academic interest, the methods of reading a video game text have been a debate (Frasca, 2003; Murray, 2005). This is mostly due to still emerging methodologies and classifications in the field, as well as ongoing attempt to define the main aim and engagement methods of video game products. The two dominant opposing factions that proposes distinctive frameworks to evaluate a video game text seem to be *narratology* and *ludology*.

Video game narratologist standpoint was most strongly sparked from Janet Murray's *Hamlet on the Holodeck* that proposes the computer (thus video games) as a new medium for narrative. As Murray puts it; "The computer […] is first and foremost a representational medium, a means for modeling the world that adds its own potent properties to the traditional media

[2] If one was to refer to the top selling video games of 2012 as seen in Video Games Charts http://www.vgchartz.com/yearly/2012/Global/ , it could be concluded that the list is populated with war and "playing soldier" type games mixed with football, sports and racing.

it has assimilated so quickly." (Murray, 1997, p. 284). In this standpoint video games capture their audiences with the heroes, the stories and the narratives they construct and represent through a storytelling heritage.

On the opposite side was the ludologist outlook that has sparked from Espen Aarseth's *Cybertext*, which suggests that the study of games should focus on the rules and the abstract systems they define – representational elements should only be accepted as incidental (Aarseth, 1997). This ludologic standpoint suggests that video games capture their audiences with the repetition, learning and applied rules of the virtual action space they simulate. Thus, before considering a video game as a storytelling outlet, one first needs to consider it as a set of predefined rules – a simulation of a constructed system. Gonzalo Frasca summarizes the disparity;

> "Traditional literary theory and semiotics simply could not deal with these texts [cybertexts], adventure games, and textual-based multiuser environments because these works are not just made of sequences of signs but, rather, behave like machines or sign-generators." (Frasca, 2003, p. 221)

Also, if video games were to be accepted as narratives, game studies ought to be modelled upon previous fields that delve on analysing narratives in different media. For Aarseth this is a colonisation attempt; "Games are not a kind of cinema, or literature, but colonising attempts from both these fields have already happened, and no doubt will happen again." (Aarseth, 2001)

In his article *In Defence of Cutscenes* Rune Klevjer merges Aarseth's proposal with Markku Eskelinen's to define the *radical* ludological argument;

> "In his excellent article about configurative mechanisms in games, *The Gaming Situation*, Markku Eskelinen rightly points out, drawing on Espen Aarseths well-known typology of cybertexts, that playing a game is predominantly a configurative practice, not an interpretative one like film or literature. However, the deeply problematic claim following

> from this is that stories ‘are just uninteresting ornaments or gift-wrappings to games, and laying any emphasis on studying these kind of marketing tools is just waste of time and energy’. This is a radical ludological argument: Everything other than the pure game mechanics of a computer game is essentially alien to its true aesthetic form.” (Klevjer, 2002, p.191)

The comparison of these two factions seems to reverberate Plato’s game-playing forms of *ludus* and *paidia*. Ludus is defined by “pre-existing rules that players agree to observe; these rules specify a goal and the allowed means to attain that goal” (Herman, Jahn, & Ryan, 2005, p. 355). Paidia is the direct opposite; activities with no structure, goal or a computable outcome. On one hand, ludology seems to pair with ludus in defining video games as a set of observable rules with attainable goals. As a result one may conclude that it is the production and existence of these rules and goals that contructs a video game, thus no suprisingly game studies should be concerned with how these rules and goals are constructed and their criticism on whether and what levels they work. On the other hand paidia – mistakenly – may seem to pair with narrative. Any individual unfamiliar with the narrative field may assume that constructing a narrative is a vast and free area, bereft of any definable rules or goals – yet these assumptions would be easily falsifiable as will be seen on the following pages.

Gonzalo Frasca easens this contrast up by stating “there is a serious misunderstanding on the fact that some scholars believe that ludologists hold a radical position that completely discards narrative from videogames” (Frasca, 2003, p. 92) and summarizes the whole contradiction as a misconception. Recently it seems that *Ludology* has become an inclusive title for *Game Studies* in general as is perceivable in Wikipedia currently redirecting the Ludology definition to Game Studies definition. Moreover, there have been approaches that aim to integrate narratology and ludology together (Mateas, 2005). These approaches mostly focus on using ludologic terms and frameworks to define the narrative flow in a video game. So, the

main question they try to address is how a narrative (an assumed paidic concept) can become a game system (a ludic concept). This is seemingly achieved by defining the ludus processes in a narrative flow, hence translating a narrative into a ludic chart. Even then, a very valid gap still exists between the ludic core of the game and its narrative; "[…] we cannot claim that ludus and narrative are equivalent, because the first is a set of possibilities, while the second is a set of chained actions" (Frasca, 1999). So the ludologic framework of a video game narrative consists of all possible outcomes, all choices and all results while the produced narrative is a path of chained actions and reactions acknowledged to be invoked by the player during a play session. Ludology may be interested in the construction of this chart of possibilities but narratology has to be involved in the narrative effect set out by each possible path. One wants to construct the map, the other needs to evaluate the content (each possible path and checkpoints) within this map. This disparity highlights a very distinctive chasm that is harder to connect.

At this point the mentioned distinctions indicate that when *narrative* is hinted in video game studies, all are not exactly talking about the same concept drawn out by narrative theory or narratology. In fact, Frasca complains that "narrativists seem to systematically fail to provide clear, specific definitions of what they mean by narrative." (Frasca, 2003, p. 96) As discussed in the previous paragraph, even a video game that aims to construct a storytelling would have possible different paths, dialogues and characters to interact with. Yet in the end the narrative constructed by the player will be a single path; a series of choices and outcomes. Additionally the player is aware that he is making choices and constructing a story as opposed to being exposed to a story that has already been written. In this issue Jasper Juul concludes that;

> "There is an inherent conflict between the now of the interaction and the *past* or 'prior' of the narrative. You can't have narration and interactivity at the same time; there is no

such thing as a continuously interactive story." (Juul, 2001, p.9)

Yet obviously video games *are* trying to construct stories – and are keen on calling them interactive ones. The *adventure* game genre for one, that exclusively focuses on storytelling, has been around from the 1970s. It is actually a general name for a series of sub genres (such as text adventure, graphic adventure, etc) that are built upon "narrative content that a player unlocks piece by piece over time" (Salen & Zimmerman, 2004, p. 385). Not only in this genre, but there are a variety of narrative elements and storytelling fragments in video games from many different genres, too.

As a result, it is evident that this study needs to define the outline of the concept that will be referred as a video game narrative along with its sub-concepts, before progressing any further.

1.3. Defining the Video Game Narrative

Angry Birds is a video game that has become synonymous with the success of mobile gaming platforms. A recent article in Forbes discloses the total sales of Angry Birds franchise in all platforms as around 1.7 billion units[3]. The genre of the game is usually cited as a combination of *puzzle & action* and there seems to be no claim that Angry Birds is a *narrative* game.

It is evident that Angry Birds does not offer any basic Aristotelian narrative structure, nor any kind of story structure that adheres to a framework set out by any structuralist literary theorist. However the game does employ basic narrative elements such as a group of protagonists, a group of antagonists and the conflict between them. The marketing summary set out by the production company Rovio reads; "The survival of the Angry Birds is at stake! Dish out revenge on the green pigs who stole the Birds' eggs."[4]

[3] Article accessible at; http://www.forbes.com/sites/johngaudiosi/2013/03/11/rovio-execs-explain-what-angry-birds-toons-channel-opens-up-to-its-1-7-billion-gamers/

[4] Avaliable at; http://www.rovio.com/en/our-work/games/view/1/angry-birds

Thus, the game is themed around revenge, an universal emotion, in Bacon's words "a kind of wild justice" (Bacon, 1996, p. 347) - the desire to lash back at those that have threatened one's family (the eggs). Yet the game never creates *that* narrative of revenge, neither it creates a structured narrative of any other kind – it is simply a puzzle game that only provides the narrative tools that could be used to create such a story for its players.

A Google Images[5] search for words "*angry birds fan art"* reveals pages and pages of drawings or products in other forms created by players and *fans* of the game. It seems apprehensible that the users of the game used those narrative tools to create different narrative fragments and re-imaginings themselves. Yet would this creative outburst make it possible to entitle the game as a narrative game - the answer is bound to be negative. However for the sake of argument this study will entitle these games as creating *narrative spaces* – that is, creating a space, a cloud or an area of narrative possibilities by introducing basic *narrative elements* such as characters, locations, key events, conflicts, without creating a structured narrative piece. This is relevant for narratologist outlook since one may want to study *the narrative space* in Angry Birds even if it is seemingly a non-narrative game. The choice of birds over pigs as protagonists, the allure of the theme of revenge, the distinctive characteristics of bird protagonists and their effects on internalization of the game mechanics, could all be valid topics regarding a narrative reading.

On the one hand Angry Birds is a game that does not aim to construct a narrative – it only aims to place its ludologic puzzle mechanics inside a narrative space that promises a nonexistent tale of revenge. On the other hand there are games that prominently desire to construct a narrative. This could very well be linear narratives with very little deviation along the way and with predetermined endings (such as Infocom's much acclaimed *Zork* series) or non-linear narratives with multiple endings where the players' choices determine which ending they will end up with (another unforgettable example would be Cyan's genre defining game; *Myst*). These could more easily be

[5] http://images.google.com/

called *narrative games* as even their ludic production intends to convey a story in an interactive environment. In fact their ludologic approach particularly focuses on deciphering the means to create an interactive story. Granted, the ludic structures of these games could be analyzed while *excluding* their narrative content, but not possibly without referring to the regulations of narrative theory itself.

Then there are those ranging in between. Westwood Studios' *Dune II: Battle for Arakis* is defined as a RTS (real-time strategy) game. The game consists of action / strategy war simulation segments spreaded with narrative video cut-scenes in-between. The narrative segments are non-interactive and there is no option for the player to orientate the story in a way not dictated by the game flow – yet they are still there. Dune II is not a narrative game but it would be misleading to say that the existing narrative fragments in the game has not contributed to its reception or the overall experience the game generated among its players. Compare this with Microsoft Game Studios' 2010 release *Alan Wake*, a third person shooter / psychological horror game in which narrative and action are so intertwined, it is confusing not to include narrative in game definition despite its shooter mechanics. Of course, both of these games introduced game mechanics in their cores that could very well be stripped of their narrative space. (A fan remake of Dune II aims to create a multiplayer mode of the game using the game engine only, thus creating a game mode bereft of any narrative[6].) And granted, these game mechanics could merely have been under debate by ludic means only. Yet, the final product, the release, that composed the experience of the game Dune II did choose to rely on narrative.

This brings us to the exact point this study emerges from. *Six Degrees* aims to offer a framework, primarily to evaluate the level of existence of

[6] Information avaliable at; http://www.rockpapershotgun.com/2011/07/29/mentatal-dune-2-fan-remake-gets-multiplayer/

narrative in a video game and, secondarily to provide an insight to the integration of narrative to the game's ludic content.

1.4. Understanding the Ludologic Argument

Even if a widely accepted joint model of narratology and ludology could be drawn, it would still be fruitful to see where both viewpoints are coming from. Ludologists (for the sake of argument let us limit them to radical ludologists) wants to comprehend video games in their own context, stripped from non-mechanical artistic concerns.

Consider the approach in 1950s when the first video game software production started. At this stage the main question was always the issue of "will it work?" or "can it simulate?", not "what story will it tell?". It is possible to find examples of this in many pioneer games. When Thomas T. Goldsmith Jr. and Estle Ray Mann patented the *Cathode Ray Tube* – a missile simulator inspired by World War II – in 1947, or when William Higinbotham joined an analog computer and an oscilloscope to create the game *Tennis for Two* in 1958, it was never an issue of an artistic or a narrative expression[7]. The programmers did not want to create stories, they just wanted to see if it would "work" or if it would "simulate" – it was more of a question of computational potency, both from the programmer's and the hardware's point-of-view. The first main question was "does a programming envirоinment exist to create such a simulation" and the second question would be "does a hardware exist to run this software". It would be suggestible at this point to remember that the Chess routine of Alan Turing, the computer pioneer, written on paper in 1948, could not be computed and run on a computer till 1951 after his death, due to technical inadequacies (Copeland, 2004).

When you remove the narrative space from a video game, you are left with a set of rules and a software code that executes them. Namco Midway's

[7] Information about both of these pioneer games are avaliable at http://www.pong-story.com/intro.htm

video game *Pac-Man* was released in 1980 and sprawled a series of clone games[8]. Basically by replacing the protagonist (Pac-Man), the antagonists (Ghosts) and the graphical interface of the game, one can end up with another game such as Coleco's 1982 release *Lady Bug* – which is ludologically not exactly a very different game at all.

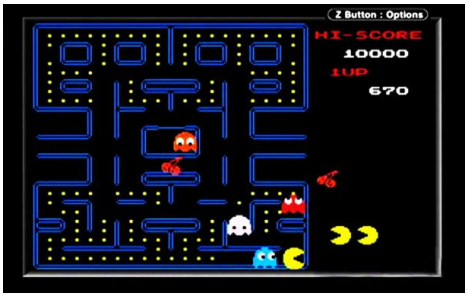


Figure 1. A screenshot from Pac-Man (1980) by Namco.

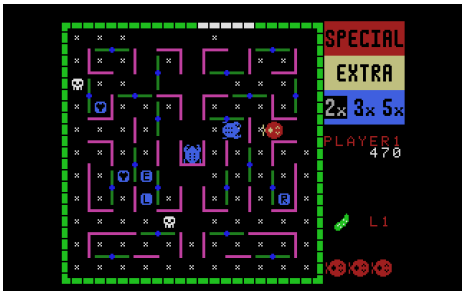


Figure 2. A screenshot from Lady Bug (1982) by Coleco Vision.

At this point it is important to remember that computational power and technical limitations have always been and will most probably always be issues that affect narration or narrative space construction in video games. In an interview given by Shigeru Miyamoto – the creator of famous video game character Mario - to USA Today newspaper in 2010, Miyamoto explains the technical limitations that governed the creation of the character Mario (Snider, 2010). Since at the time the character had to be drawn on a 16x16 pixels canvas and there was a limitation about animation, it was decided that the character wears a hat, so that the programmers did not have to animate hair and the artists did not have to draw eyebrow and forehead. To give the impression that the character's arms were moving in an easier way, the designers decided that he should wear a hanger – which in turn made him automatically into a character of a craftsman profession (specifically, a plumber). These choices in return affected the narrative space of Mario universe radically. Appearing in around 250 video games[9] Mario has spawned

[8] Some of these clone games are listed at http://en.wikipedia.org/wiki/List_of_Pac-Man_clones and http://www.ign.com/articles/2008/03/04/top-10-pac-man-clones

[9] Wikipedia provides a list of video games that feature Mario; http://en.wikipedia.org/wiki/List_of_Mario_games_by_year

a series of side characters, locations and enemies over the years that were featured both in narrative games and in games with narrative spaces.

For a radical ludologist, the process that resulted in the creation of Mario could be a strengthening example to the theory that narrative elements are a dressing to the ludic content of the game. Since even Mario, one of the most widely known character in video game world[10], was seemingly conceived through incidental means. Yet moving to today, the game designers and producers do not face that much severe technical inadequacies. The challenges of today seem to be originality, accesibility, engagement and function. Creating a tennis simulating game in 1958 was a technical challenge, but creating a tennis simulating game in 2013 is a contextual challenge – it could very well be correlated to the narrative space of the game in question.

In 1958 the game needed only to succeed at simulating Tennis and simply "working", in 2013 it also needs to be original, accessible and engaging. Consider the below two tennis games that were released in the last few years for the Wii gaming console. Wii gaming console has motion sensing controls and wireless controllers that could be held and swung in the air very much like a tennis racket. In both cases the games did not rely on the fact that they could simulate a real-life tennis game experience, such as swinging controllers as a racket, making backhand and forehand shots according to the controller angle and the near-perfect applied rules of physics governing the ball. Instead they found different contextual formulas to differentiate themselves as tennis video games;

- In 2009 Nintendo releases *Mario Power Tennis*, a comical representation of a tennis game with cartoonish characters, exploding balls and fantastic locations.

[10] Out of top 10 best-selling video games of all times Mario has 4 titles. Data retrieved from http://www.vgchartz.com/gamedb/ on February, 2013.

- In 2011 Sega releases *Virtua Tennis 4*, a very realistic representation of a tennis game with cutting edge graphics, the ability to play as or against famous real-world tennis players such as Federer, Nadal, etc.

Simply put, rule sets and technological content seem to be unable to define and differentiate video games anymore. In today's video game production enviroinment it seems possible to produce a video game that is ludologically feasible but that might not achieve success due to miscontent.

A related example to remember could be the Atari 2600 port of arcade game *Pac-Man*. Released in 1980 in US and Japan as an arcade machine, Pac-Man has enjoyed great success and has become synonymous with video games. The arcade machine was so succesful that "estimates counted 7 billion coins that by 1982 had been inserted into some 400,000 Pac-Man machines worldwide, equal to one game of Pac-Man for every person on earth. US domestic revenues from games and licensing of the Pac-Man image for T-shirts, pop songs, to wastepaper baskets, etc. exceeded $1 billion." (Kao, 1989, p.45). One would expect the port of such a succesful game to the home TV console Atari 2600 in 1982 would be equally succesful. Although Atari has initially released 12 million copies of this game cartridge in the launch period, probably hoping to release more later, over the lifetime of the game, only 7 million cartridges have been sold. Coupled up with another unsuccesful game release *E.T.* in the same year, Atari amounted over half a billion dollars of loss (536 million USD) in 1983 and by the end of 1984 Warner had to sell the company[11].

Ludologically speaking the Atari 2600 port of Pac-Man had similar rules and goals with its arcade brother. Yet the technical difficulties had resulted in some design decisions that altered the narrative space of the game. One prominent example would be the de-characterization of Ghosts. Instead of four Ghosts with different colors and personalities, all Ghosts looked the

[11] Sources for these figures avaliable at http://www.snopes.com/business/market/atari.asp

same. The second prominent example was the change in iconic sound effect of Pac-Man as it was eating the dots. Changes such as these piled up and were converted into negative reception for the game.

Ian Bogost and Nick Montfort lists in details all the technical differences in the production of these two games in their book *Racing the Beam: The Atari Video Computer System* but also point-out the contextual differences that do not affect the game play but the narrative perception. They conclude that "if there is a general lesson that can be learned from Pac-Man's fate on the Atari VCS, it is the importance of the framing and social context of a property - video game or otherwise - when adapting it for a particular computer platform." (Montfort & Bogost, 2009, p. 79) Thus only adapting the ludology did not work in its own accord, the narrative space had to be properly adapted too.

1.5. Understanding the Narratologic Argument

It is easy to imagine narrative as an impalpable field, bereft of any rules and goals. Yet, narratology itself is far from any mechanical constraints. In fact many structural frameworks have been offered to create a grammar of a narrative.

It is possible to start giving examples from the classics, such as Aristotle's *Poetics* that offer three main structure for narrative fiction; Epic, Tragedy and Comedy (also the composing of dithyrambs but this seems omitable in this age). From Aristotle's words these structures define "how the plots should be constructed if the poetic process is to be artistically satisfactory" (Else, 1957, p. 33). This basically suggests that for any narrative to be interesting enough to be read, watched or otherwise be experienced, there are certain rules that needs to be followed in its construction. Whether Aristotle's classification of narrative is still relevant today or not, this point still seems to stand true.

In Shakespeare's Hamlet, Polonius says[12];

> *"The best actors in the world, either for tragedy, comedy, history, pastoral, pastoral-comical, historical-pastoral, tragical-historical, tragical-comical-historical-pastoral, scene individable, or poem unlimited."*

Presumably this is Shakespeare's attempt himself categorizing the narrative fiction or making fun of such classifications. Nevertheless he seems aware that narrative categorizations exists and had took time to create a listing to mention or mock them.

Fast forward to the 20th century, Vladimir Propp's *Morphology of the Folktale* (1928) identifies eight archetypal characters and eight spheres of action rotating around them; the Villain, the Provider (or the Donor), the Helper, the Princess and her Father, the Dispatcher, the Hero and the False Hero (Propp, 2001). Propp classifies narrative not on structure of the text in question but on action – specifically the roles - of recurring characters. This kind of approach could be associated with the classification of narrative in video games more easily, because in the following pages it will be argued that translation of players' *actions* into the games, does also define the core of video games.

Post-cinema genrification seem even more relevant to video game narrative, as some genre names attributed to video game types seem to be in line with the genres of movies. About genrification Tzvetan Todorov concludes; "There can be no question of 'rejecting the notion of genre' […] Such a rejection would imply the renunciation of language and could not, by definition, be formulated." (Todorov, 1975, p. 7) Barry Grant points out that (for movies) presence of genres shapes production, consumer index, critical concept, and provides audiences with the outline of expected kind of pleasures from the given product (Grant, 2007).

[12] Hamlet. Act 2, Scene 2, Page 17.

Tom Ryall and Jane Staiger both propose systems to understand and approach genrification in movies that in some ways could be adaptable to video game genrification as well (Ryall, 1998; Staiger, 2003).

Obviously more examples of narrative categorization and genrification could be produced.

Granted, there can be no uncontested and finalized categorization layout for narrative structure or genrification, and in this light one cannot set forth to create such an uncontested and finalized categorization for video game narrative either. Furthermore there will always be theoretical disagreement about the definition and identification of these narrative categories. Yet it is safe to assume that narrative structure is prone to categorization and almost to some mechanical formulas. Consequently it can be said that narrative itself is also a ludologic concept. One that could be observed, defined goals to and devised means to attain that specific goal – almost like a ludic activity and very unlike a paidiatic one.

Nevertheless for video games, it is possible to take another step forward. In this perspective one can also categorize and classify not how narrative was constructed in video games, but *how narrative was integrated into video games*, which in itself would be another ludic approach.

This classification could illuminate not how a video game narrative should best be (simply because the rules of constructing a good narrative is already outside the field of the video game studies), but how the narrative could be integrated into a video game experience to achieve different results – both from a user experience and producer's perspective.

1.6. Unpopulating the Criteria Axes

To identify the metrics that are relevant in such a classification, it is possible to begin from the opposite side and identify the metrics that are irrelevant so that they could be eliminated and isolate the remaining definitive

ones. The classification that is drawn in this study is hereby not interested in the following criteria;

Rules and goals of the game system

As the main focus of the ludologic approach, the rules and goals system of a game is stripped of narrative, narrative space and any contextual elements. From a radical ludologist standpoint one could conclude that the same rules and goals system could be decorated differently to create seemingly different video games.

This exclusion includes not only the rules and goals of the game, but also the goals for production of the game system – specifically for which outcome the game rules were built. A sample categorization for rules and goals at this point could be Ron Edwards' *GNS* system; Gamism (competition among players), Simulationism (exploration of the constructed game space where internal logic and experiential consistency exists) and Narrativism (creating a story of a recognizable theme) (Edwards, 2001).

The classification described in this study however is not interested in such forms or aims of the video games.

Game genres

In his article *Game Taxonomies: A High Level Framework for Game Analysis and Design*, Craig Lindley presents a triangle of game genres according to three axis; Simulation, Ludology and Narratology (Lindley, 2003). Inclusion of multipath movies and DVD movies blurs this genrefication as well as ludologic games not having a general genre name but being mentioned individually.

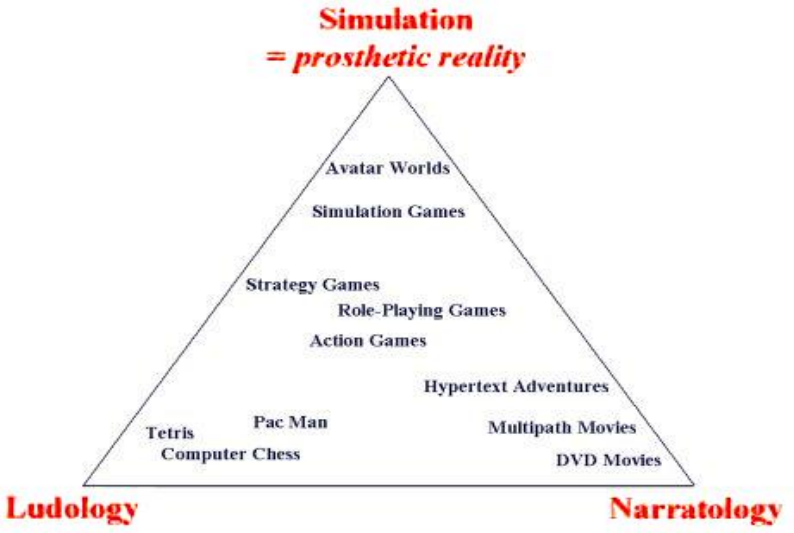


Figure 3. Craig Lindley's two-dimensional classification plane shows the comparative degrees to which a particular game or genre is ludic, narrative, or simulation-based.

Wikipedia seems to be a more up-to-date source on collecting and displaying all popular video game genres along with their definitions. As of March 2003, Wikipedia Video Game Genres page[13] lists 9 main and 54 sub-genres as;

- **Action:** Ball and paddle, beat'em up and hack and slash, fighting game, maze game, pinball game, platform game
- **Shooter:** FPS (first-person shooter), MMO FPS (massively multiplayer online first-person shooter), light gun shooter, shoot'em up, tactical shooter, rail shooter, TPS (third-person shooter)
- **Action-Adventure:** Stealth game, survival horror
- **Adventure:** Real-time 3d adventures, text adventures, graphic adventures, visual novels
- **Role-playing:** Western RPGs (role playing games) and Japanese RPGs (JRPGs), fantasy RPGs, sandbox RPGs, action RPGs, MMORPGs (massively multiplayer online role playing games), rogue RPGs, tactical RPGs

[13] Accessible through http://en.wikipedia.org/wiki/Video_game_genres

- **Simulation:** Construction and management simulation, life simulation, vehicle simulation
- **Strategy:** 4X (Stands for explore, expand, exploit and exterminate) game, artillery game, RTS, real-time tactics, tower defense, turn-based strategy, turn-based tactics, wargame
- **Other:** Music games, party games, programming games, puzzle games, sports games, trivia games, board games, card games
- **Purposeful:** Adult games, advergames, art games, casual games, christian games, educational games, electronic sports, exergames, serious games

The classification described in this study however is not interested in the proposed genres or the continuing genrification of video games either.

Narrative genres

This study will also not attempt to categorize or classify narrative types or genres used in video games according to their content and context. It should be noted that this is not exactly related to game genre at all, but a different complimentary classification. One might define sub-genres for adventure games such as horror adventure games, dedective/crime adventure games or science-fiction adventure games (also for FPS; horror FPS, science-fiction FPS and so on). These narrative genres have been around much before video games and were defined mostly through literary narrative studies.

Is it possible to say that video game medium created a unique literary genre that could only work within the medium itself but not in any other media? The answer I would propose to this question would be ‘not entirely’, and I would also include narrative discourse, temporal orders, anachronism, narrative speed, narrative frequency, narrative distance and narrative point of view to the list of themes that are not transformed through the medium itself. These are all concepts otherwise concieved outside the medium, mostly long before its existence. Thus, the classification described in this study is not interested in the narrative genres used in video games, their transformation

inside video games (if any) and/or adaptation of any other literary narrative theme in this medium.

Milieu

In his article *Genre and Game Studies: Toward a Critical Approach to Video Game Genres,* Thomas H. Apperley uses milieu as a term that describes the visual genre of the video game (Apperley, 2006). The term could be broadened to include all visual materials of a video game from character and environment designs to menu and interface designs.

The milieu of games may also create genres regardless of their content and context. As an example, even if the technology has surpassed them, pixellated 8-bit graphics are still used today in various themed and genred video games. JRPGs succeed at juxtaposing epic, 'universe-saving' dramas with exaggeratedly childish looking *kawaii* graphics. Video game milieu composes its own language, which is still irrelevant for the classification described in this study.

1.7. Final Arguments Before Concluding the Scope

To determine the correct criteria to classify the different levels of integration between the narrative space and the ludic elements of video games, one should return to some basic definitions and discussions about video games themselves. It may be felt that, these definitions and discussions should have been handled much before this point, yet previously cited evaluation of narrative and ludic elements in video games will shed better light on their composition.

After defining the dominant arguments so far, we are still left with the question; *how to read a video game text*? Is it worth dissecting the narrative of a video game and define a new structure for it? Or shall we strip the video game of its narrative or narrative space and focus on its rules and goals? More importantly still, is it satisfactory to conclude that both methods are worth utilized in a synthesis?

To create an alternative perspective consider this dilemma; the process for creating a video game may be launched with the interest of a specific literary genre, a character, an event, a ruleset, a concept or any other kind of a driving idea. Any cultural production, be it movies, paintings, graphic design, literature or a form of creative writing, may start off with these factors. Yet in the end, what exactly is it, that transforms the producer's ideas into a video game?

To answer this question, the production process of a video game is needed to be compared against the production process of other cultural products. On the theoretical level, a video game can be seen as "a cultural product which is embedded within the political and social organization of our lives" (Bryce & Rutter, 2006). Since a video game is a cultural product, each video game also reflects a negotiation between the conformity of the consumer and the expression of the producer - in this case; the game designer.

Yet the balance of the dynamics between this consumer requisitions and the producer expression works differently than other cultural productions, simply because video games primarily depend on interaction. Whereat, unlike many other cultural production, their existence depends on how successful they are in encouraging their consumers to interact with them. The core of literature could said to be words and structure of narrative and the core of movies could said to be images, but the core of video games is interaction. Without an input from a user, a video game is only a static piece of software code waiting to execute an idea, a narrative or a piece of action. In case no input is given, the video game is not executed and therefore does not exist. *Video games only exist while they are being played.* In other words, "what makes games games […] is the projection of the player's actions into the game world" (Juul, 2001).

This portrayal of video games focusing on interaction so far, also begs the question; what is the final product of a video game production process? Approaching from a technical point-of-view, one can gather several elements generating a video game; the software code (also sometimes called the game

engine), the rules (game rules, the narrative, story and/or characters), the visual design (graphics as well as data input interface which is called the UI or user interface) and the aural design (sound effects and music). It is still doubtful whether all of these factors, seperately or together, constitutes the final product of a video game or not - let us consider the following example.

Within the first installation of the famous real-time strategy game *Starcraft*, there is a character named Sarah Kerrigan. Although being a strategy game played entirely on maps with a godly point of view, *Starcraft* as a game relies heavily on non-interactive storytelling through pre-rendered cut-scenes between the levels. During the first chapter of the game the players are introduced to the character of Kerrigan and interact with her (rescue her, accompany her and eventually control her). The character also creates a romantic link with the protagonist of the first chapter; Jim Raynor (who the player controls throughout the entirety of the first chapter of the game). Halfway through the chapter the events lead surprisingly to a point where the protagonist is reluctantly forced to leave Kerrigan in the middle of enemy territory to her death. Although within the game mechanics there is no way to give the decision to rescue her or stay with her, it is still a shocking and unexpected turn of events for the player. Because - despite the story having no other course - the player may still feel responsible for all the interaction he made, that brought the events to that point. Kerrigan later returns for vengeance in the second chapter as a resurrected and transformed villain that has changed sides and continues her role as a major character in this video game franchise. Popular video gaming website *GameSpot* has conducted a reader's choice survey and Sarah Kerrigan was still the second most popular villain of all time, 8 years after the release of the original game[14].

An outsider who has never played any installation of the *Starcraft* franchise may be given or told the complete story of the character Kerrigan, shown her artwork and may watch the original (or later revamped) cut-

[14] "Number 2: Sarah Kerrigan". TenSpot: Reader's Choice - Best Villains. http://www.gamespot.com/features/tenspot_villains_rc/page10.html

scenes[15] leading to her death. Yet none of these will constitute the experience of the person that has played the video game himself. Recognizing how Kerrigan looks and knowing her story is one thing, but the illusion of creating the events that lead her to her death and experiencing the moment of responsibility is completely another experience. This constitutes a feeling and an experience which is unlikely to be felt in media other than video games.

Going back to the technical definition of a video game; the code of the game, the story, the rules, the genre, the visual and aural aspect – seperately or combined - none of these seem to constitute the final product of a video game. The final product of a video game is the experience it creates among its players. A player of *Starcraft* may convey his stories and experiences of the game verbally or in writing – even the game itself is telling and creating stories through visuals, cut-scenes or the written history of characters, locations and other concepts – but none of these can validly transmit the experience that can be gained from actually interacting with the game. Unless one starts to interact and play the game himself, no conceptual, cultural or psychological asset about the game is created for him. *The final product of a video game can only be created and experienced through interaction.*

It is now time to combine these two conclusions. First of all, it is suggested that the existence of a video game depends on the interaction of a player. Without the interaction, the game is not executed and therefore does not exist. Secondly, only by this interaction can one create the experience which is the final product of a video game rather than all the other factors that may in first place mistakenly be assumed as what constitutes the video game itself. These in turn bring us to the outcome that the primary key concept that defines a video game is not its narrative nor its rules or goals but how the game creates and sustains user interaction. In the end what transforms the designer's ideas into a video game is how the ideas became an interactive experience.

[15] StarCraft 2: The Betrayal http://www.youtube.com/watch?v=DBR3doYRick

This perspective supplies us with a tertiary criteria space, concerning itself not with what rules and goals the game have (ludic or ludologic outlook) or not with what story the game tells or how it tells this story (narratologist outlook) but in what ways the whole experience is an interactively engaging one. Additionally this third metage holds an even more estimable degree than the first two, because it is the metric by which we can tell if a *text* can exist and function as a video game or not.

1.8. Populating the Criteria Axes: Interactivity

Combining all the conclusions, it is now possible to pinpoint the criteria that is best be used in a classification which aims to examine the relationship between the narratives and the ludic systems in video games. The first notion that was reached was how interactivity is a building block in video games, thus it could be a primary criteria to be used within this classification, too.

Due to their nature all video games are bound to be interactive. Consider this extreme example; an experimental game that focuses on the interaction issue was produced for Nordic Game Jam in 2009 and also won the Independent Games Festival Award for innovation in 2010, becoming a part of the Global Game Jam archive[16]. In this experimental game called *4 Minutes and 33 Seconds of Uniqueness* by Klooni Games, the player supposedly need not interact with the game. The player wins the game if he is the only one playing the game in the entire World. When the player begins, the game checks over the internet if there are other people playing it at the moment and it will kill the game if someone else is playing it (games of both parties). If the player can stay online for 4 minutes and 33 seconds the game will be won. The game screen consists of only a single reverse progress (or countdown) bar.

[16] Information about *4 minutes and 33 seconds of uniqueness* (2009) can be found here; http://archive.globalgamejam.org/games/4-minutes-and-33-seconds-uniqueness

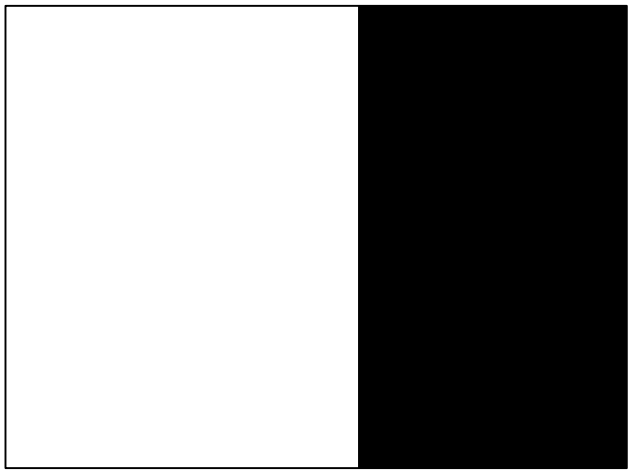


Figure 4. A screenshot from 4 Minutes and 33 Seconds of Uniqueness by Klooni Games. The game screen is a simple countdown bar. If someone kills your game a map shows that player's location and IP address.

As expected the game raised arguments[17] about what constitutes a video game experience. The game boasted no interaction from the user, nevertheless there is an interaction on the very basic level. The player gives the decision to initiate the game as well as the decision on *when exactly* to initiate the game. The interaction aspect here is not in the content of the game but within the activation of it. When the player is kicked out, it is again the player's decision to try instantly to get in or wait for a while to raise the chances of success. If noone decides to run the game, then there is still no game.

However, it should be noted that the pursued concept for this study is not *the interactivity of the game* but *the interactivity of the narrative*. Rather, whether the game presented its narrative sequences in an interactive environment or not. The questions that are needed to be answered at this point are;

- Can the player *act* during or inside the narrative or is the player only *exposed* to the narrative?

[17] Some example online arguments can be found at; http://jeffmagers.blogspot.com/2009/02/what-makes-game-two-comments-and-one.html and at http://pcpowerplay.com.au/forums/showthread.php/122291-4-minutes-33-seconds-of-uniqueness/

- Is the player a constructor or a spectator of the narrative?

To elaborate, consider the example of the first game in the *Prince of Persia* series, released in 1989 by Brøderbund. The game belongs to the action / platform genre. The nameless protagonist has to navigate through a dungeon to rescue the princess who is under the threat of execution by the evil vizier. The game kicks off with a short video cut-scene showing the kidnapped princess and the vizier who gives her an hour to live. During the progression of the game, when the players passes certains levels, a short video cut-scene is played again that shows the princess waiting for the protagonist. There is also a special video that shows princess sending her dog, who appears once in the following level to help the protagonist in a tight spot.

Prince of Persia is undoubtedly an interactive game but it does not present an interactive narrative. The narrative sequences of the game is split clearly from the ludic (platform) sequences and are all pre-rendered. The player does not construct the narrative by playing the game, but instead plays the game to progress through a constructed one. Lev Manovich summarizes such a structure;

> "By the 1990s [...] Games began to feature lavish opening cinematic sequences (called 'cinematics' in the game business) that set the mood, established the setting, and introduced the narrative. Frequently, the whole game would be structured as an oscillation between interactive fragments requiring the user's input and noninteractive cinematic sequences, that is, 'cinematics.'" (Manovich, 2001, p. 83)

Prince of Persia is not a narrative game. So is interactivity of the narrative a phenomenon only experienced in narrative games? An initial instinct would be to assume that these interactive video game narratives only exist in games that we could deem as *interactive stories*. Yet as Brenda Laurel puts it; "the interactive story is a hypothetical beast in the mythology of

computing, an elusive unicorn we can imagine but have yet to capture." (Laurel, 2001, p. 72)

One can even argue that some linear stories are *already* interactive, following the tradition of writerly or producerly texts – they are already constructed in collaboration with the author. However, for which mensural criterion do we use interactivity here - emergence of the text or exposure to it? From here on, in this study the term interactive narrative will be consciously reversed. As a result, instead of evaluating the value of a text as an interactive narrative, it is aimed to scout the layers of *narrative interactivity* inside it. To put it mildy, the unicorn may be elusive but we can still try to comprehend the beast we have captured in its place.

Then hereby *narrative interactivity* will be defined as the criterion by which we tell if a narrative is presented in an interactive space. Narrative interactivity will also help us evaluate the levels of interactivity that are offered to be exposed to that narrative.

Consider the opening sequence of Valve's 1998 release *Half-Life*[18]. The game's protagonist Gordon Freeman is arriving at Black Mesa Research Facility, the secret military/government science laboratory where the game takes place. The player starts the sequence inside a monorail train carriage, controlling Gordon. A generic welcome and safety regulations voice recording is playing inside the carriage, providing background information about the location to the player.

As the player controls Gordon, he can move inside the carriage (though the player does not have the option to stop or leave the carriage) and look out from the carriage windows to explore the facility. As the carriage moves along its path, numerous events, locations and objects can be seen around the carriage that will prove to be important later on in the game (such as the helicopter in the valley or the appearance of the antagonist - known as

[18] The whole opening sequence is avaliable as a recorded video at this address; http://www.youtube.com/watch?v=3x3wQ7Opltg

the G-Man - in the other carriage). Note that, although the aural cues are designed to draw the player's attention to the correct place to look, the player could very easily miss seeing those tropes, as he is free to look wherever he chooses. This creates a loose sphere of possibilities, a set of narrative tools that the player could use to construct a personalized narrative experience – the experience of entering Black Mesa Research Facility for the first time himself.

This sequence could also have been a pre-rendered video cut-scene, removing the control from the player and dictating everything the player needs to see upfront. This was a game design decision taken by the game producers and both options seem to be valid design choices that are still being used in the industry. It does not make sense to scrutinize one over the other in the grounds that the prior creates a more interactive experience than the latter, in the hopes that the prior forges a *better* interactive story. However it is agreeable that they create substantially different experiences for the user as a fragment of narrative interacted in different degrees. The defined term; narrative interactivity acts different in these two cases, and it is possible to evaluate their effects within different degrees.

1.9. Populating the Criteria Axes: Autonomy

When a narrative becomes interactive, a possibility of it being autonomous also arises with it (although not a necessity). The concept autonomy, as used in this study, does not manifest when a single path narrative is presented in an interactive environment, but when a narrative with multiple paths and endings is presented (in an interactive or non-interactive way) and the player can choose or direct how the narrative flows.

Autonomy is also one of the three factors that is defined as a motivation booster to play in *Self-Determination Theory* (SDT). SDT suggests that intrinsic motivation is the core type of motivation for sports and play (Frederick & Ryan, 1995). There are three factors that support or diminish intrinsic motivation; autonomy, competence and relatedness.

Basically if a game design would support these factors or create the perception of supporting them, that will raise the intrinsic motivation of the player and as a result create an engaging experience.

From an outside point of view, the autonomy for playing video games may always seem high because playing video games is nearly always voluntary. Yet inside the game, the sense of autonomy is expected to rise when the player has the perception that he is free to choose what he wants to do and the instructions are less-controlling. This could also be applicable when the game is not retributive over player's actions. This way the player becomes free to always go back to the parts he has failed (or even succeeded and passed) and replay them to get better results or to experiment on the different outcomes, rather than forcing the player into a singular game flow.

For narrative games, the intrinsic motivation is expected to rise when the player can choose different paths within the storytelling and can see that his choices effect the advancement of the narrative. It has also almost become a sectoral standart for role playing type games to contain - apart from a central story-line - side quests, side stories and locations non-related to the main story-line to explore.

This creates a scale with two different ends. On the one side there is the narrative flow that has pre-determined beginning(s) and pre-determined end(s). The path(s) between those beginning(s) and end(s) have limited alternatives and deviations that need to be progressed *sequentially*. In fact this kind of narrative is pretty ludic and could be observed through a work flow chart.

On the other side there is the huge narrative space, *a virtual world*, with a variety of non-sequential content. The player might even determine how and where he begins in this world and decide what to do in which sequence.

The Elder Scrolls V: Skyrim, the final installment of *The Elder Scrolls* series fully embrace this kind of nonlinear open world gameplay, where the

player is not bound by a storyline but is free to explore a huge fantasy world by himself. Even so, the game engine creates quest locations, dynamic quests and open-to-stimulation locations – not leaving the player completely free, but only creating the perception of freedom.

While evaluating autonomy, it is also important to note that creating a choice for the sake of creating a choice inside a video game may not always support the autonomy. Forcing a choice and constraining the alternatives or presenting inconsistent alternatives may thwart instead of support the feeling of freedom. This is especially valid for games with narratives.

In *Fallout 3* there is a system called karma that tracks how good or how bad (evil) your character is. Generally helping in-game characters raises your karma but killing them and stealing from them decreases it. Similar systems exist in various other games, too. Basically there may be two problems with such a choice system based on ethics in terms of autonomy; inconsistency and patency. When the player is presented two obvious choices on far sides of a spectrum to proceed through the game it is a choice that faintly supports autonomy. Many moral dilemmas presented may have more solutions than black & white and not being able to act other than completely "good" or "evil" is bound to diminish the autonomy of the player. The other possible problem arises when the player is allowed to act inconsistently. Although primarily this may be perceived to enchance freedom, being able to make inconsistent choices (helping a game character, but then later killing his neighbour) ruptures the player's attachment with storyline and character. Instead it is possible for the game designer to respond dynamically to player's choices and prevent discrepancies in the flow of the storytelling.

As a conclusion autonomy is another criterion that will be used to categorize the relationship between a game's narrative and ludic elements.

1.10. Degree 0: Nonexistence of Narrative

Degree 0 (Zero) is the classification for all the games that do not find a place in the *Six Degrees* system. There are two main groups of games that fit into this degree. The *non-narrative games* and the *representational games*.

The non-narrative games are typically those that have no trace of comprehensible narrative elements, narrative space or narrative. Additionally, games that employ a small amount of narrative elements disconnected with the game's nature itself, or radically missing interconnectedness, could also be deemed as non-narrative in this degree.

A monumental example to the non-narrative games in this degree would be *Tetris*. Programmed in 1984 by Alexey Pajitnov in the Soviet Union and ported to numerous platforms[19] *Tetris* seems to be the pinnacle of pure ludic approach and absence of any comprehensible narrative. Nintendo's port of 1989 utilized graphics reminding of Russia (specifically of Kremlin Palace) and the Russian folk tune called *Korobeiniki* – probably as a reference to the Russian creator of the game. However the game does not employ or strive to employ any other narrative element, nor create any narrative space.

[19] A comprehensive list can be accessed from http://en.wikipedia.org/wiki/List_of_Tetris_variants

Figure 5. Opening scene for Tetris (1989) by Nintendo.

To clarify non-narrative *Degree 0* games also compare these two examples; *Bejeweled* (2001) from Popcap Games and *Jewel Quest II* (2007) from iWin.

Bejeweled can be accepted as the initiator of match-three type games in mobile and social platforms. The game is extremely popular and as reported by the producer company has around 500 million players worldwide[20]. The game dynamics revolve around matching three or more jewels which results in their destruction and gaining score as a result. Although the puzzle tiles are designed as jewels, the game does not build up on this cosmetic choice. There is no additional comprehensible narrative element employed within the game.

[20] Data retireved from http://www.popcap.com/games/bejeweled/history on April 2013.

Figure 6. A screenshot from Bejeweled (2001) by Popcap Games.

Figure 7. Titles screen from Bejeweled (2001) by Popcap Games.

Jewel Quest II has fundamental ludic similarities with *Bejeweled*. It is also a match-three puzzle game with different forms of puzzle fields. The game however introduces characters and a backstory. The game is a representation of Rupert's (an adventurer archaeologist very similar to iconic movie character Indiana Jones) journey in Africa. Each puzzle level is represented by a marked spot in a map of Africa. Later in the game a love interest named Emma and a villain named Sebastian are also introduced. As the levels are conquered the player is given written progression of the narrative in the form of journal entries. Ther e are segments where the player solves puzzles for Emma or Sebastian and recieve narrative from their perspectives as well.

Figure 8. A puzzle sequence screenshot from Jewel Quest II (2007) by iWin.

Figure 9. A narration sequence screenshot from Jewel Quest II (2007) by iWin.

In this aspect, *Jewel Quest II* presents a diegetic narrative. The player follows the narrative of protagonist Rupert but what happens to him is never shown or enacted. Instead things happen (or in other words; narrative

progresses) *off-screen* while the player was solving a puzzle. Then the player is told what happened in the story while he was solving the puzzle level.

Granted *Jewel Quest II* is not a narrative game. The narration elements are complimentary to the ludic setting of the game. However it tries to create a narrative space and even tells a complete story through written entries given between puzzle levels. For this reason this study will entitle *Jewel Quest II* to another degree while evaluate *Bejeweled* as *Degree 0*. It is irrelevant for this study to discuss the value of the presented narrative in literary terms. It is also irrelevant to evaluate if *Jewel Quest II* is a *better* game (ludologically or sales-wise) than *Bejeweled* for employing narrative or not. What this study wants to deduce is that these two ludologically parallel games have integrated narrative in two distintive ways.

The representational games are predominantly vehicle simulating and sports games. In most cases these games need only *simulate* an activity in an engaging way, than to build any narrative space. Atari's 1976 game *Night Driver* or Sega's 1979 game *Monaco GP* are pioneers in a long range of games that simulate vehicle use.

Figure 10. A screenshot from Night Driver (1976) by Atari.

Figure 11. A screenshot from Monaco GP (1979) by Sega.

Neither of these games employ any narrative elements or build any narrative space. The player is never given the information who is driving the vehicle or why there is an urgency or the need for a race or sometimes even where the simulation takes place. For all purposes, the player *himself* is using the simulator and he is not advancing on anyone else's narrative.

Excessive realistic vehicle simulating games of today still do not feel any need for employing narrative tropes. Sony Computer Entertainment's 2010 release *Gran Turismo 5* has very realistic car and environment models as well as realistic driving, collision and damage mechanics. The game contains a large amount of real world car models. The player has the option to purchase and upgrade cars and to maintain a personal garage. Also available are realistic racing tracks from real world locations. Yet the game does not employ any narrative elements. The player does not create a *driver* character, he *himself* is the driver. Although there is a track and racing progression, this is again done in a non-narrative way.

Thus all mentioned vehicle simulation games are in *Degree 0.* Compare these with Nintendo's 1998 release futuristic racing game *F-Zero X*. In this fantastic racing game all space vehicles are associated with a driver character. There are small narrative pieces of comic book panels between racing sequences. Not suprisingly the narrative has no effect on the dynamics of the racing, they seem to be just dressings. However this practice of narrative space creation pushes this vehicle simulating game into the *1st Degree*.

Sports games are parallel to racing games in simulation and representation. Most of the time the sports games do not feel the need to construct a narrative space around their simulation mechanics. This puts most of the sports simulation games into *Degree 0*, however there are again some exceptions.

Compare for example these two boxing games; EA Sports' *Fight Night* released in 2004 and Nintendo's *Punch-Out!!* released in 2009. In *Fight Night* the player chooses a famous real-life boxer and enjoys a simulation of realistic boxing. There are no narrative elements or progression in the game. In *Punch-Out!!* however the player is controlling a young boxer called Little Mac as he strives to climb his way through World Boxing Championshipwith the help of his trainer Doc Louis. Opponent boxers all have distinctive characteristics that are adapted in their fighting style. In fact small stories of

Little Mac and all opponents are used in the marketing of the game[21]. This difference puts the *Fight Night* into *Degree 0* and *Punch-Out!!* in *1st Degree*.

Figure 12. A screenshot from Fight Night (2004) by EA Sports.

Figure 13. A screenshot from Punch-Out!! (2009) by Nintendo.

It is again not in the interest of this study to discuss or reach a verdict on which is a *better* boxing game in terms of engagement, simulation or fun. These two games used different integration methods for narrative and game mechanics. It is this study's aim to deduce that these integration methods are analogous for many video games and can be categorized into six distinctive degrees; hence the *Six Degrees of Video Game Narrative*.

[21] Avaliable at http://punchout.nintendo.com

2. Six Degrees of Video Game Narrative

2.1 Introduction to Six Degrees

This study proposes six distinctive categories for the utilization of narrative inside video games. An overall comparison and definition for all of these degrees will be given first, followed by discussions, discourse and examples for each degree in detail.

The categorization focuses on three criteria - discussed in the previous chapter- to identify the degrees;

- The existence and the presentation of narrative, from undemanding, crude narrative spaces to other emerging forms

- Narrative interactivity, meaning whether the player is only exposed to narrative or becomes a part of its construction

- Narrative autonomy, meaning if the player can orient narrative into different paths by making narrative choices

By observing the implementation of these criteria in video games it is possible to identify six distintive existence of narrative in video games as follows;

1st Degree: Narrative as an Internalization Tool

- *1st Degree* games do not intend to construct a narrative structure. Instead these games employ a narrative space with narrative tropes, characters and virtual locations. Typically the realm of the *1st Degree* begins with the introduction of a protagonist – a hero.
- The main functions of such narrative spaces are internalization of game mechanics and easen the learning of game rules, as well as creating motivations for the players to keep playing.
- Typically these games might include kickoff and conclusion cut-scenes as narration devices. In-game cutscenes are dominantly

non-existent or too crude to mention. If exist, they are mostly iterations of the same trope over and over again. (Such as the kidnapping and re-kidnapping of the female character between the levels of Nintendo's 1981 game *Donkey Kong*.)

- It is possible to construct different narrative spaces for almost same ludic game mechanics.
- These games do not offer narrative interactivity or narrative autonomy.

2nd Degree: Swapping of Action & Narration Sequences

- *2nd Degree* games are games that construct a background narrative through out-of-game and non-interactive narration sequences. They commonly achieve this by oscillating between ludic action sequences and non-interactive narration sequences (mainly cut-scenes) throughout the game
- Typically these games, too, might include kickoff and conclusion cut-scenes. In-game cut-scenes could be graphical, animated, text-only or a combination of any.
- The cut-scenes resemble rewards for the success of action sequences and provide passages between action sequences. Most of the time, they are *skippable*.
- These games do not offer narrative interactivity yet may include a shadow of narrative autonomy. The actions of players inside the ludic sequences may affect which cut-scene will be presented next to the player. Yet it is still not coherent to entitle this as examples of narrative autonomy as will be discussed later.

3rd Degree: Narration Blurring Into Action

- In *3rd Degree* games some construction of narration moves inside the ludic (action) sequences of the game. Some general examples

are journals that could be found and read, non-playable characters that could be talked to, conversations heard or events seen while the playing of the game is in progress.

- *3rd Degree* games can still employ kickoff, conclusion and in-game cut-scenes much like *2nd Degree* games. Yet since some construction of narrative has moved inside the action sequences now, even if a player chooses to skip all cut-scenes, he will still be exposed to some part of narrative inside the game play.
- Narrative interactivity manifests inside this degree as well as narrative autonomy.

4th Degree: The Universe at Pause

- As opposed to the first three degrees, *4th Degree* games are produced with narrative intent – their ludic aim is to formulate mechanics to construct a narrative inside the video game medium. Thus they are entitled to genres such as *adventure games* or *interactive fiction*.
- *The universe at pause* is a common phenomenon in the *4th Degree*. This is the game play mechanic in which the whole narrative universe pauses (or remains in small loops) till the player finds the correct action to advance the narrative.
- By their nature these games offer high narrative interactivity and thrive on narrative autonomy to be replayable or create various experiences.
- Typically in this degree, whether the narrative strays into alternate paths or not, the construction of the narrative is mainly sequentially – it has to be initiated in a dominant order. (Such as; *pick up the key, use the key to open the door*.)

5th Degree: Non-Sequential Autonomy

- *5th Degree* games commonly manifest in role playing, open world (sandbox), open world role playing and massively multiplayer genres. In addition to (or instead of) a general storyline these games provide players with various different narrative hubs – side stories that are not required for the success or completion of the game. The player chooses in which sequence he wants to be exposed (or not exposed) to which narrative. Thus the parser criteria for *5th Degree* becomes autonomy and non-sequentiality.
- Although the *5th Degree* games can employ *the universe at pause* phenomenon (such as a narrative hub conserving its state till the player visits or revisits it), these games may also employ timed or pop-up events, breaking this convention.

6th Degree: Experimental Narration and Autonomical Variations

- *6th Degree* hosts games that construct a narrative but will not fit exactly into the other five degrees. Experimental ludic mechanics for constructing narratives, marginal interactivity schemes and autonomical variations can all be subjects for this degree.
- All categorization criteria are evaluated on a case-by-case basis and there isn't any general tendecy to be mentioned in this degree.

2.2. 1st Degree: Narrative as an Internalization Tool

2.2.1. Definitions and Discourse

Unlike other degrees, *1st Degree* games construct a very tentative narrative space seemingly just for the sake of game mechanics. Thus more than other degrees, this raises the question of why there is narrative space there in the first place. The probable answer provided in this study is *internalization,* a collective term used in hopes to be inclusive of other terms such as *convention, inference* and *expectation*. Thus, before further defining the *1st Degree,* it seems important to specify under which description the term internalization is used in this study.

The term internalization has varied descriptions within different fields (such as psychology, finance and biology), yet the description that is going to be referenced here is the closest to the use in psychology. Typically internalization is defined as incorporating values or patterns of culture in one's self in a consious or a subconsious way through learning or socialization[22].

Deriving from this description and adapting it into video games, this study uses internalization as the consious or the subconsious experience gained from the generated narrative space and the resulting milieu around the ludic rules and mechanics of a video game. The selection of narrative elements then in turn results in conventions and involuntary expectations. Because, in fact, what is a narrative but "a version of reality whose acceptability is governed by convention" (Bruner, 1991, p. 4) Thus, if the hero is a medieval knight, the players expect to see dragons and will know that these are the enemies once they see them.

Internalization in video games operates in two main lanes; quickly understanding what the game is about but also having the enthusiasm to keep

[22] Merriam-Webster Online Dictionary http://www.merriam-webster.com/dictionary/internalization

playing the game. To illustrate internalization it is possible to examine Nintendo's 1981 arcade game *Donkey Kong*.

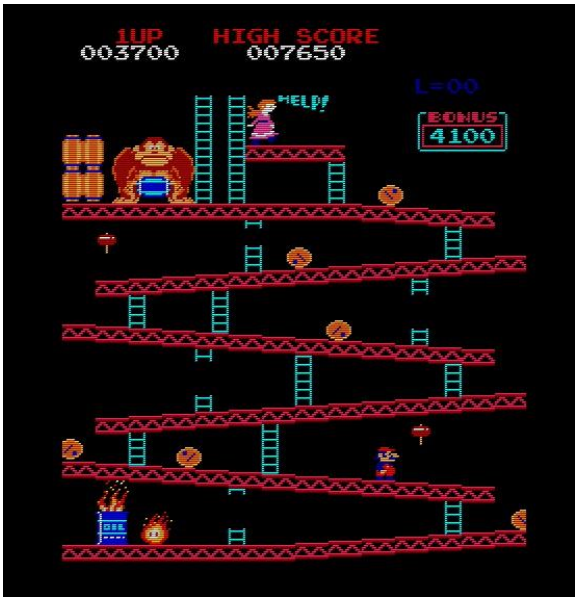


Figure 14. A screenshot from Donkey Kong (1981) by Nintendo.

In *Donkey Kong*, the protagonist Jumpman (later renamed as *Mario*) is trying to reach the top platform in the game screen to save the Lady (later renamed as Pauline), who was kidnapped by the antagonist, Donkey Kong. The game becomes challening as Donkey Kong throws barrels onto the platforms to deter Jumpman.

In this aspect the game does not construct a narrative but offers a narrative space. There is a kidnapping (a *damsel in distress*) and the hero needs to rescue her. In the beginning of the game a very short cutscene takes place that shows Donkey Kong climbing to the top of the platforms while carrying the kidnappee. As the game begins, the player could instantly recognise what his aim is. Even if the short cutscene did not take place, the destination of the hero would be easy to pinpoint as the kidnappee is regularly shouting *HELP!* with on-screen text. So as the game initiates, the player has the possibility to easily grasp what needs to be done due to internalization of a very cliche trope. Questions like; who is the girl, what is her relation to the hero, why was she kidnapped, what happens if the hero does not rescue her,

become irrelevant at this point. The game seemingly does not specifically need to instruct the player on the ultimate goal of its screen.

At this point, also consider the moving barrel obstacles. It is relatively easier for a first-time player (a first-timer for this specific game or for video games in general) to instinctively resolve what his action should be against the barrels rolling towards him. It could be seen that the barrels are thrown by Donkey Kong, the antagonist, so concluding that they are bound to be bad for the player seems self-evident. Since the player knows the character he is controlling is a person and what is rolling towards that character is a barrel, without being instructed, the player could conclude that the barrel should be avoided and within the two-dimensional game world, the most logical course of action to achieve that would be to *jump over the barrel*. (In this light, it is also possible to say that seeing Donkey Kong throw a barrel is unnecessary in concluding to avoid it. The player would again try to avoid a barrel rolling towards him without knowing its origin – and that would also be true.)

All of these information were passed to the player without specifically providing written instructions or information, with the help of the milieu resulting from the narrative space the game constructs.

Figure 15. A screenshot from Donkey Kong (1981) by Nintendo. The kidnappee, Lady, is shouting for help.

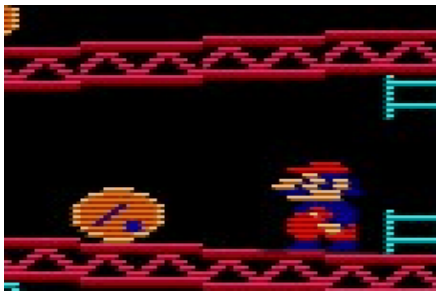


Figure 16. A screenshot from Donkey Kong (1981) by Nintendo. Jumpman seems to be considering what to do against a barrel rolling towards himself.

Compare this example with the following cases;

Figure 17. A sample design to explain the term internalization.

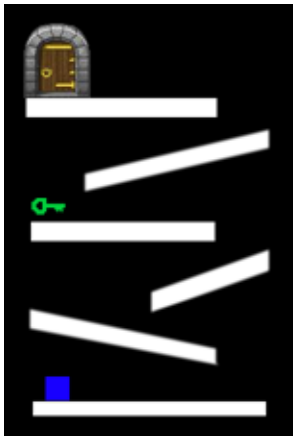


Figure 18. A sample design to explain the term internalization.

Imagine a game screen like in Figure 17. The player controls the blue square. His aim is to reach the top platform. In a ludic aspect this is a parallel aim as in the game *Donkey Kong*. Yet there is no visible motivation and no indication of where the destination is. The player could eventually guess where the destination is or might discover it while experimenting. If the following levels are designed in a similar way the player would have learned that the aim is the reach the top platform. Yet, overall, it is hard to say that this provides an engaging game play.

Add a door and a key to the design as seen in Figure 18. These small narrative elements now act as internalization tools. The player sees a key and a door. Without a need for instruction he could conclude that he needs to get the key and then proceed for the door. The player could then instictively look for more narrative elements. Replacing the blue square the player is controlling with an adventurer graphic and providing even a very crude narrative (such as; *escape the dungeon you are trapped in*) generates a narrative space around the game. The player is now more likely to keep playing the levels as he now knows there is an overall aim and conclusion in the game.

Consequently, *1st Degree* games do not specifically intend to construct a narrative flow. Instead they use narrative elements such as protagonists, antagonists, locations and conflicts to construct a *narrative space* for the internalization of game mechanics. This is very similar to Genette's term *diegesis* that is described as "the spatiotemporal universe" of a narrative (Genette, 1969) but is seemingly a less aforethought under-achiever compared to it.

Typically these games might also employ narrative tropes with anonym synopses (such as damsel in distress, good vs evil, revenge against a wrong-doing, saving the village/land/country/world/universe by defeating a villain). In most cases the proposed narrative tropes are just mentioned in beginnings and conclusions of the game. The game mechanics does not typically deal with building on and progressing these narratives, at large.

Since *1st Degree* games are not built with the intention of constructing a narrative structure, the narrative elements they employ could typically be considered as coming after, and in accordance with their ludic content. Thus commonly this is not a process of the game designer having a narrative in the first place (narrative here meaning; a constructed story or a group of narrative elements such as characters) and him coming up with the best ludic game mechanics to tell this story as a video game. Instead within the process the game mechanics may likely to come first and the best narrative space that could be used to internalize these mechanics can be discovered later.

In this aspect it would be easier to imagine that the narrative space of a set of game mechanics could be produced in distinctive alternatives. In an web interview series titled *Iwata Asks,* the creator of the game *Donkey Kong*, Shigeru Miyamoto admits that *Donkey Kong* was originally a game thought for *Popeye* franchise[23]. The kidnapper Donkey Kong was Bluto, the kidnappee Lady was Olive and finally Jumpman who would later become Mario was Popeye. Yet due to licensing problems the game's characters were

[23] Interview avaliable at http://iwataasks.nintendo.com/interviews/#/wii/nsmb/0/0

changed into the current characters. This example reinforces the argument that in *1st Degree* games narrative space comes as complementary and several alternatives of narrative elements could be produced without hurting the overall mechnanics of the game.

A vice-versa pratice could be the example of some of the early adapted video games – mostly from the realm of movies or books. In this practice the narrative space of the game was already present and game designers needed to figure out the correct ludic mechanics that this narrative space could best work with, under limited technical possibilities. Games such as Activision's 1987 game *Predator* can be examples of such *1st Degree* adaptations. Although the story itself had a rich background (a movie to be precise), this was not completely utilized in the video game. A research conducted in 2011 points out that since 1975, 547 movies have resulted in around 2,000 video game adaptations (Blanchet, 2011). Certainly these games are not all in *1st Degree*, but it is suprising to find *1st Degree* games among them, while they already had a ready-made and comparatively rich narrative behind their production.

In her book *A Theory of Adaptation, Linda Hutcheon* conclude that these adaptations are mostly failing in sales because;

> "The proportional failure of game adaptations to reach the top ten in sales foregrounds the very different goals of stories in non-game media and the difficuly of transcoding non-games advantageously within the affordances of gaming platforms." (Hutcheon, 2012, p. 199)

Thus, it is possible to deduce that moving from narrative space to ludic content is far more perilous than moving in the other direction or adopting a simultaneous method. It is also possible to deduce that *1st Degree* is not a feasible narrative usage when it comes to adaptations.

In the case of *1st Degree* games, it is early to evaluate the existance of narrative interactivity. Since there are no narrative sequences present in *1st Degree* games, the players cannot act on or during these narrative sequences.

As for autonomy, it would be misleading to say that all *1st Degree* games are non-autonomic. Multiple endings and the ways to achieve them could be present in *Degree 0* or *1st Degree* games. Yet it is important to note that this is not an autonomy that could be understood in terms of narrative construction – thus *a narrative autonomy*.

An example to this issue could be Taito's 1986 game *Bubble Bobble* which is an action/platform game. The game is not a narrative game but employs a narrative space. The protagonists are two creatures called Bubble Dragons, named Bub and Bob (controlled by player one and player two respectively). Their aim is to save their girlfriends from a villain named Super Drunk. The game starts with a text cutscene that also shows the characters flying around the screen inside bubbles. Consequently, *Bubble Bobble* is a *1st Degree* game as it does not aim to construct a narrative but employs a narrative space for internalization of the game mechanics. The game has a bad and a happy ending. This is decided by an action in the final level which the player encounters the major villain. If before defeating the villain the player activates the second player option (or the whole battle is done with two players), both characters reunite with their girlfriends and the game will end in a happy ending[24], otherwise only one character will reunite with its girlfriend and it results in a bad ending. If you acquire the happy ending a new game mode opens where the color palettes of levels and graphics of some adversaries are changed.

Note that this example does not represent the narrative autonomy this study defined. The ending is not determined by a narrative choice or actions

[24] This happy ending could be watched from;
http://www.youtube.com/watch?v=b6vODDCPP48

the player makes during the flow of the narrative but rather through an unforeseen game mechanic action.

Is it possible to define a clear-cut, non-permeable border between *1st Degree* and *Degree 0* games? It should be acknowledged at this point that there could be examples that linger on the border of one or another. Such as a game with a feeble narrative space, presenting characters that are inconsistent and lacking a beginning or a conclusion cutscene (whether graphic, video or text) to establish the setting. Midway's 1981 game *Wizard of Wor* could be such a sample. The game is an arcade game in which you control futuristic soldiers with laser weapons, through a top-view labyrinth, shooting creatures reminding of dinosaurs, demonic monsters and wizards. The game has no explanation of why those characters are in a labyrinth, why they are hunting the creatures and why creatures and protagonist characters are selected from seemingly different narrative genres (such as futuristic soldiers and dinosaurs).

Another example would be Williams Electronics' 1982 arcade game *Joust*. The game is a platform game in which the player controls a yellow knight riding a flying ostrich. The aim of the game is to defeat adversaries by ramming them face front and collecting ostrich eggs. Although the game employs some basic narrative elements it is hard to be certain that it is eligible for a *1st Degree*.

Figure 19. Cover art and a screenshot from Joust (1982) by Williams Electronics.

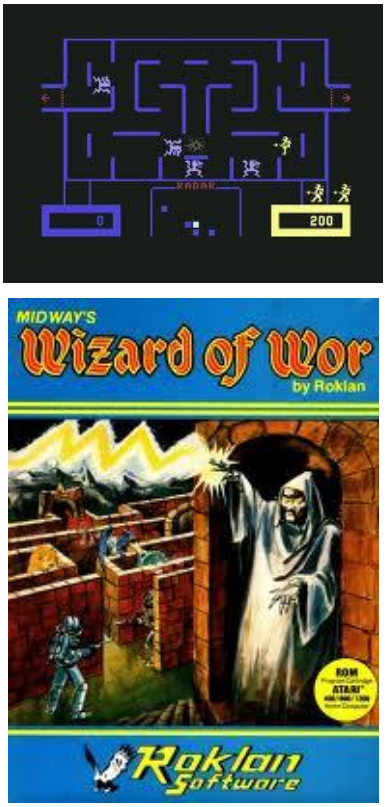


Figure 20. Cover art and a screenshot from Wizard of Wor (1981) by Midway.

In this regard, it is possible to conclude that including these games in the *1st Degree* does not damage the integrity of the classification, as those games seemingly have created a narrative space however feeble it may be. Including a logical or coherent narrative setting that holds the whole narrative space together is unlikely to be considered as a requirement at this point.

A better distinction between *Degree 0* and *1st Degree* however would be the answer to the question; *who acts in the game*? The margin between the two degrees become more comprehensible as the line between *"i acted"* and *"the character acted"* becomes blurred.

Consider the example game *Bejeweled* in section 1.10. Who swaps the jewels, earns points and passes the levels in *Bejeweled*? Since there is seemingly no narrative space including a protagonist, the answer would be *the player – "I swap the jewels"*. In *Donkey Kong* though, who got hit by a barrel or who jumped over one? The logical answer would again be the player,

yet here the player is the controller, the initiator of the action. In the constructed narrative space Mario (formerly known as Jumpman), gets hit by a barrel or jumps over one. Thus, when the game starts to construct a narrative space where the player becomes both the *spectator* and the controller, the realm of *1st Degree* is breached. So it is possible to conclude that when the game introduces a hero (or a protagonist character) it moves into *1st Degree* from *Degree 0*. Could there be a game that introduces only a hero but no other additional narrative elements? This seems unlikely without denying possible existences of experimental applications.

The representational sports games that were decidedly put into *Degree 0* might seem to contest this criteria, since in most of these games the player is controlling an athlete or a team (fictional or actual). Yet in their example, the existance of a narrative space is missing. In a football video game the player controls a team to win the match, not to construct or experience a narrative. What these games construct is more of a simulation (simulating the mechanics of the sports in question) rather than a narrative space. Thus, the player does not become a spectator for the narrative space but a simulator for the simulation instead.

Although pure ludic games can exist, there seems to be a rising tendency among game producers in providing a narrative space (how feeble and crude) that operates around the game mechanics. At its basic core the narrative space may only be formed of characters and villains, yet basic narrative tropes to provide motivation for the character and the player to go on, are also common.

Having a narrative space and adapting it into ludic mechanics, having ludic mechnics and creating a narrative space to support them or simultaneous development of narrative space and ludic mechanics, all seem valid and utilized methods in production of *1st Degree* games.

1st Degree games do not validate an intent of constructing a structural narrative. In fact they are narrative abstractions and they employ only

simplified representations of basic forms of narrative. This is not suprising, since video games already employ abstractions in visual means or in ludic mechanics. As Mark Wolf notes;

> "Abstraction's role in the video game medium has changed over the years, from perceptual abstraction to conceptual abstraction, but it appears to be both a necessary and inevitable part of the video game-playing experience." (Wolf, 2003, p. 64)

So why not abstraction in narrative? Seemingly video games in this degree do not need advanced structures of narrative to be engaging. In return, it sometimes becomes impractical to apply serious consideration to their narratives. It is almost enough for their narrative space to help internalize their game mechanics.

When the narrative spaces employed by the games are so crude and simple, the knowledge of who created them may seemingly become equally irrelevant. Except for cases where the narrative space is maintained and expanded by following games or other cultural products, the creators of such narratives rarely come into the light. Mark Wallin gives an example on the authorship issue;

> "To which author does *EA*'s series of *Lord of the Rings* games appeal for its authority? J.R.R. Tolkien, or Peter Jackson? What we find is that video games, currently lacking their own cannon of authorship, use the process of identification with both cinematic and literary elements to create a sense of 'origin' that would be otherwise provided by an author-figure." (Wallin, 2007)

Yet since Barthes has already declared the author dead, why should one look for authors in the video game medium. As Barthes put it;

> "To give a text an Author is to impose a limit on that text, to furnish it with a final signified, to close the writing." (Barthes, 1977, p. 147)

Because Mario has become a pop icon and a successful franchise, the name of its creator Shigeru Miyamoto, and the story of its creation is commonly known and accessible. Yet, the authors who orchestrated the appearance of the transvestite villains in *Final Fight* and the authors who censored them in the western English releases (Sheff, 1993, p. 225) are unknown and unrecorded. The reason why this should matter may lie in the fact that the author in video games were never there to begin with. The author may have died in other mediums, but in video games they were never born in the first place. The author was mostly the production company and rarely the individuals. As Wallin points out this creates a lack of a sense of an origin. This, in return, results in a severer collision of artistic expression and practicality. Assessing the *1st Degree* games in general, it becomes harder to evaluate which part of narrative piece is chosen for practicality and which is out of an artistic concern (also whether this matters or not).

It may be concluded that ideally *1st Degree* games better have a narrative space practical enough to be integrated into ludic mechanics, but also meaningful enough to reflect an artistic concern. Yet this study is interested in identifying the degrees, not determining their idealistic equation.

2.2.2. Exemplary 1st Degree Games

From the 80s: Metroid

Metroid is a platform/action game produced by Nintendo in 1986. The game follows the adventures of the protagonist Samus Aran through the planet Zebes as she hunts for space pirates. The game constructs a potent

narrative space and was the first step in the shaping of *Metroid* universe that hosted ten more games in the upcoming years, with a large fanbase[25].

The game starts with a text cutscene and ends with text-heavy short animation. There are five possible final screens depending on the time it takes to finish the game. There are no narrative choices in the game that affect the final screen. In three out of five final scenes Samus Aran, who was seen as a soldier wearing heavy armor throughout the game, takes of her armor and is revealed to be a woman.

In most video game database sources[26] the game is cited as a member of action genre. In some sources[27] however the game is cited as action-adventure. The reason for this seems to be the non-linear screen progression of the game. The game was one of the pioneers of exploration aspect in video games where the players need to backtrack to the locations they have already been, after acquiring a new item or a power. This aspect seem to be enriching the narrative space, supporting the spectator feeling that the player is experiencing. Since the player can move forward and backward in the game world (as opposed to only forward) the realism of the narrative space seems to be escalating, thus the playing experience becomes *an adventure*.

From the 90s: Final Fight

Final Fight is a beat-'em-up game produced by Capcom in 1990. The game has three playable characters; Cody, Haggar and Guy. Their aim is to rescue a kidnapped girl named Jessica, who is the girlfriend of Cody and the daughter of Haggar. The game kicks off with a text cutscene describing the situation in gang-infested Metro City, followed by a short cutscene showing the kidnapping of Jessica. The characters fight their way through different

[25] VGChartz.com reports the total sales of Metroid franchise as almost 16,7 million units as of 2012; http://www.vgchartz.com/article/250223/metroid-a-sales-history/

[26] Such as Gamespot http://www.gamespot.com/metroid/ or IGN http://www.ign.com/games/metroid/nes-6006

[27] Such as Wikipedia http://en.wikipedia.org/wiki/Metroid_(video_game)

locations in Metro City, fighting distinctive recurring characters along the way in addition to big villains. The game concludes with the beating of the gang boss and the rescue of Jessica.

Final Fight has an influential narrative space amongst beat'-em-up video game genre. Japanese video game magazine, *Gamest* selected the game as the best game of 1990 and Haggar had the top spot in Top 50 Characters of the year[28], underlining the success of the game's narrative space and its influence in the overall success of the game. Apart from protagonists each recurring enemy models also had names, personalities and small stories associated with them[29].

From the 2000s: Candy Crush Saga

Candy Crush Sage is an exteremely popular *Facebook* and mobile platforms game produced by King in 2013. The game is reported to have around 46,5 million players monthly[30]. The game is a match-three game following in the tradition of previously mentioned *Bejeweled* or *Jewel Quest II*. The game's official webpage reads; "Explore the sweet and colourful world of Candy Crush in this fun candy switcher! Join Mr Toffee and Tiffi on an exciting journey through the world of candy."[31]

The game depicts the adventures of Tiffi as she travels in parts of a fantastical setting, helping the denizens of this world along the way. By *helping* it is meant to solve match-three puzzles. The narrative space has little impact on the ludic contents of the game or the level design (except for the visuals of swappable objects that are designed as candies). In fact, much like

[28] Available in Japanese here; http://www.netlaputa.ne.jp/~dummy/gamest/magazine/gamest/v054.html

[29] Pages 21-25 in original Japanese user's manual of the game shows stories of the villains as well as heros; http://www.videogameden.com/sfc/extra/fif.pdf

[30] Data retrieved from http://news.cnet.com/8301-1023_3-57576461-93/crushing-competition-candy-crush-creator-crowns-itself-king/

[31] http://about.king.com/games/candy-crush-saga

its predecessors the narrative space and the ludic content of the game seem to be loosely connected.

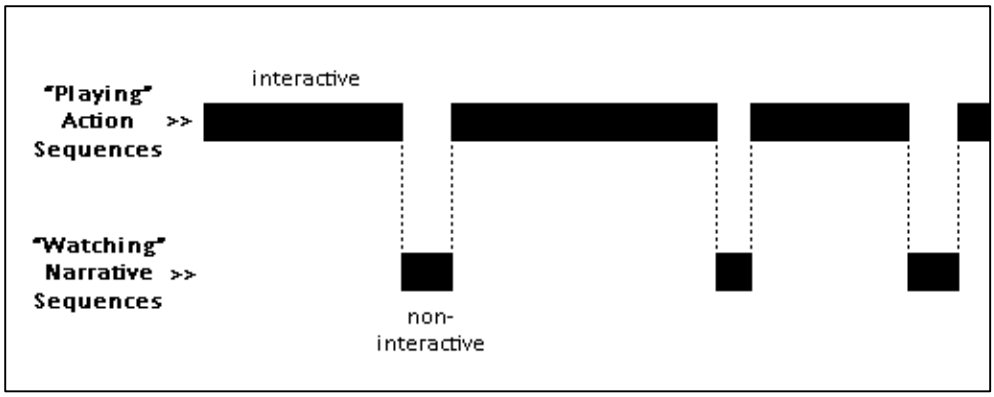
2.3. 2nd Degree: Swapping of Action & Narration Sequences

2.3.1. Definitions and Discourse

Much like *1st Degree* games, *2nd Degree* games cannot be entitled as narrative games either, but they employ *out-of-game non-interactive narrative sequences* to construct a background narrative parallel to their ludic progression. Their game mechanics however do not primarily focus on formulating ludic approaches to narrative construction, instead they may adopt various different game mechanics.

Several aspects create perceivable differences between the *1st Degree* and *2nd Degree*. The most dominant distinction is the usage of out-of-game narrative tools, mostly cut-scenes in high frequency. This alone generates a different narrative experience. Although the mechanics of the game are not narrative inclined, it is felt that a story is progressing due to the actions of the player.

2nd Degree games utilizes an effective oscillation between action sequences and narrative sequences. The narrative sequences can be pre-rendered or scripted videos, and could be perceived as rewards for succeeding in action sequences. Most of the time, they conclude the *passed* level and set the stage for the *next* level.



It is important to note that the action sequences of the games in *2nd Degree*, are hardly about narrative construction. Most of the time the action and narrative sequences are seperated in a clear-cut way. (When these two sequences overlap or merge, this pushes the game into the *3rd Degree*.) The narrative is constructed *outside of action sequences*, without an input from the player. As such they may be perceived as not essentially a part of the game itself.

In some cases the distinction between action and narration sequences are underlined by the change of the player's viewport. Juul summarizes this interesting convention;

> "Interestingly, there is something of a convention that the play sequences use the full screen, while the cut-scenes are 'letterbox', i.e., black bars are added at top and bottom. This presumably signifies 'cinema', and also indicates the absence of interactivity. The letterbox presentation cues the player to interpret the graphics using cinematic conventions rather than game conventions." (Juul, 2004)

Rehak observes the same phenomenon;

> "[...] Video games often insert 'cut-scenes' intended for viewing, not playing. At these moments, the game cues players (typically by shifting to a 'letterboxed' mode with black bars at screen top and bottom) to remove their hands from the controls and simply wach information that advances the game's narrative." (Rehak, 2003, p. 127)

Consider the example of Warner Bros' 2011 release *Mortal Kombat*, which is the nineth game in the popular fighting game series. The game has several online fighting modes, as well as two-player fighting modes that lack any need for narrative installation. The *story* mode of the game however matches the features of *2nd Degree* games. The story mode is an oscillation of pre-rendered cut-scenes with fight sequences in the middle. The fight sequences include character matches shown in the cut-scenes, so the action and narration sequences feel interconnected. The utilization of cut-scenes effectively collected some praise from the video game press reviews[32], showing that narration sequences (although they were non-interactive) enriched the game-play experience instead of interrupting it.

Since the games in this degree employ pre-rendered cut-scenes they are not narratively interactive. Although certain ludic actions or achievements within action sequences may change the subsequent cut-scenes, the narrative can still not be accepted as presented in an interactive environment; the player cannot act-on or act during the narrative.

Autonomically, the *2nd Degree* reflects the *1st Degree*. Narrative choices or actions do not effect the flow of the game. Instead autonomy (if exists) is directed by ludic actions within the non-narrative sequences. The games can be deemed autonomic but not narratively autonomic.

An (mostly) optional feature that has not been mentioned so far is the ability to *skip* cut-scenes. While the player is watching a cut-scene, a false notion that the game time (the action sequence) is still continuing in the background is unlikely to arise. The player becomes aware that the action sequence is over and the character he is controlling is now safe, the time countdown (if any) has paused and the action has stopped till the cut-scene is

[32] Gamespot (Mortal Kombat Review by Mark Walton http://www.gamespot.com/mortal-kombat-2011/reviews/mortal-kombat-review-6309219/) and 1UP TV (http://www.1up.com/reviews/mortal-kombat-review?pager.offset=0) are examples of reviews that praises the narration sequences in the game.

over. Thus skipping a cut-scene has little profit in terms of game mechanics, but is rather a personal choice for the player.

It should be noted that not all games may provide the player with the ability to skip cut-scenes. Unlike the *Mortal Kombat* example, Another *2nd Degree* game, Nintendo's 2010 release *Metroid: Other M* features an oscillation between fighting action sequences and *unskippable* cutscenes. The content and length of the cut-scenes were criticized in various game media reviews, as well as the cut-scenes' unskippable nature[33]. If cut-scenes of a game are unskippable, the ostensible conclusion would be that this was a game design choice. The producers of the game seemingly wanted the players *to have to watch* the narrative progress. This may give rise to the thought that the game primarily wants to tell a story, and game's action mechanics are almost by-products. In fact a review in the Independent concludes that;

> "[…] Action was too obviously subservient to the storyline - many of Samus's cooler abilities from the Prime games are locked out for much or all of the game in service of the plot."[34]

This approach may indicate an attempt at establishing authorship. The game's main designer becomes the decision maker in adjusting the exposure to cut-scenes (and as a result the narrative) at the expense of player's dominance over the game flow. In return this may become an issue of grievance on the part of the player and may be perceived as an invasive attempt.

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[33] Adam Rosenberg from MTV Multiplayer Blog criticizes the length of the cut-scenes in his review titled 'Metroid: Other M' Review - In Space, Everyone Can Hear You Monologue (accessible at http://multiplayerblog.mtv.com/2010/08/27/metroid-other-m-review-in-space-everyone-can-hear-you-monologue/). Tom McShea from Gamespot concludes that "Unskippable cutscenes lead to uneven pacing" (accessible at http://www.gamespot.com/metroid-other-m/reviews/metroid-other-m-review-6274531/).

[34] The review is accessible at http://www.independent.co.uk/life-style/gadgets-and-tech/story-criticized-but-action-delivers-in-metroid-other-m-reviews-2066949.html

Yet there is another side to the equation. Tecmo's 1988 release *Ninja Gaiden* effectively alternates between cut-scenes and action sequences. The action/platform play sequences follow the locations, events and charactes mentioned in the cut-scenes.

Two different users have uploaded two different videos on the *YouTube*. One is a post-produced combination of all cut-scenes in this game[35]. This video is stripped of all action sequences and merges only the narrative sequences, subsequently lasting around 19 minutes. The second video is a complete playthrough of the game with no deaths and no exploration (the players knows what to do and where to go, thus does not lose time with exploring the levels or figuring out what to do in certain locations)[36]. This video merges both cut-scene sequences and action sequences and lasts around 40 minutes.

The previously mentioned *YouTube* video that merges all of the cut-scenes of the game *Ninja Gaiden* has a response comment from the user *IAmNoRookie* that reads; "YEEEEEEEEEEEESS! I could never pass this […] game. Its sad. Thanks for uploading this!"[37] So it seems possible that there could be players who want to observe the narrative flow but was not able to, due to not succeeding in action sequences. Thus, if the player fails at action sequences, the narrative sequences are lost on him, whether he wants it or not. Although *skipping* cut-scenes is a common practice, *skipping* of action sequences seem hardly practical. As King and Krzywinska puts it;

> "Narrative reliance on cut-scenes and other 'out-of-game' devices [...] is one of the main reasons why the narrative dimension is often

[35] *Ninja Gaiden NES All Cutscenes* by YouTube user acidglow, available at http://www.youtube.com/watch?v=aRLqwsXebHQ

[36] *Ninja Gaiden (NES) – No Death Walkthrough* by YouTube user ArekTheAbsolute, available at http://www.youtube.com/watch?v=ueeKMQSS4bw

[37] http://www.youtube.com/comment?lc=RfOLiw1cqW_NxBn66HG2wL3Ja1Fn1iAW-sM_oOOEq_c

> seen as essentially opposed to that of gameplay." (King & Krzywinska, 2006, p. 44)

As a result if a player was able to skip action sequences and watch only narrative sequences, that would be opposing gameplay and the resulting experience will fail to be deemed as a video game. However Nintendo has devised a semi-solution to this issue in their 2009 release *New Super Mario Bros Wii*, called the *Super Guide*. In the official website *Super Guide* is decribed as;

> "Having trouble with a tough stage? After you've lost eight lives total on any stage a [green box with a yellow exclamation] will show up the next time you head there. Hit it and watch Luigi run through the course himself! You can jump in an take over as Luigi any time you're ready to join the action again."[38]

So this solution prevents the player getting *stuck* in action sequences using a ludic formulation – if the player does not have eight lives to spare, he still will not be able to access this feature.

Another interesting aspect to note at this point will be the concept of *walkthroughs*. Consalvo describes walkthroughs as “detailed descriptions of where to go and what to do - in sequential order - to get through a game successfully” (Consalvo, 2003). In this aspect walkthroughs could also become instruments to *pass* the action sequences and to reach narration sequences. If the game depends heavily on physical skills however, even a walkthrough may not help a player pass the action sequences so easily.

Usage of cut-scenes in *2nd Degree* games also breaches the realm of cinema, since one can read the *text* of a cut-scene not within the discourse of ludic mechanics but within the visual language of moving image. However

[38] http://mariobroswii.com/#/adventure/superguide/

balancing of the oscillation of action and narration sequences to create certain effects in games may considered to be a ludic approach that belongs in game studies. For *2nd Degree* games evaluation of cut-scenes and their transmedia reading could be further studies. As Cheng concludes;

> "While the notion of placing the cut-scene within a transmedia context may at times seem obvious and limiting by again yoking video games to film theory, it is within this context that we can understand not only changing relationship between video game narrative and game play, but also the larger relationship between cinema and video games as well." (Cheng, 2007, p. 22)

2.3.2. Exemplary 2nd Degree Games

From the 90s: Frankenstein

Zeppelin Games' 1992 release *Frankenstein* was a comical platform game loosely based on the novel, in which the player controls Ecor, the hunchback assistant of Dr.Frankenstein and needs to retrieve items for him.

Each level starts with Dr.Frankenstein asking the player to return some item and during the ludic sequences the player needs to, first, find the item and, second, return to the professor without colliding with too many monsters on the way. Each time an item was brought back Dr. Frankenstein's purpose of creating a living monster advances and different dialogues and events are shown.

Figure 21. Screenshots from a narrative sequence and a ludic sequence of Zeppelin Games' 1992 game Frankenstein.

From the 90s: Prince of Persia 2: The Shadow and the Flame

Similar to its predecessor, Brøderbund's 1993 release *Prince of Persia 2* is a good example of a *2nd Degree* game. As expected, the platform game alternates between cut-scenes and platform levels. The content of levels and cut-scenes presented match coherently, thus creating an effective convergence of action/narration oscillation.

For example, at the end of the the initial cut-scene the protagonist is seeing jumping out of a window. So when the action (platform) sequence starts, the protagonist begins on a balcony under a broken window. Advancing by the mechanics of fighting and moving through the platforms, the protagonist ends up on the docks and jumps into a ship. The next cut-scene then shows the ship sinking and the next action sequence starts on a beach.

Figure 22. The end of first cut-scene in Prince of Persia 2 (1993) by Brøderbund.

Figure 23. The beginning of first action sequence in Prince of Persia 2 (1993) by Brøderbund.

This creates a seamless transition from action into narration and vice versa, without alienating the player.

From the 2000s: Gardens of Time

Gardens of Time is a browser-based *Facebook* game that was released by Playdom in 2012. The game merges object finding with city design and management game genres together. The player also needs to track and overcome various quests and objectives.

Apart from its ludic play sequences the game has a narrative progressing in the background. By finishing quests and objectives the player is presented dialogue-based cut-scenes and subsequently new levels become available. This flow that is unlike the previous examples also fall into the boundaries of *2nd Degree* games.

In the case of *Gardens of Time*, the connection between narrative and play sequences is built on a comparatively weaker foundation. The player (in the role of a time traveller), is sent to various cities to solve several narrative problems or perform certain narrative tasks (for example; *finding someone*). The method of solving or performing the tasks however is an object finding game. If you succeed at the game, the task is successfully finished and the narrative progresses. When the actions performed in play sequences are less coherent with the logic of transition from one narrative sequence to the other, this may result in slight disharmony in action/narration oscillation.

2.4. 3rd Degree: Narration Blurring Into Action

2.4.1. Definitions and Discourse

The realm of the *3rd Degree* is breached when some parts of the game's narration is constructed *inside* the ludic gameplay segments using the ludic game play mechanics. *3rd Degree* games may still employ out-of-game narrative devices such as cut-scenes much like the *2nd Degree* games (including beginning and end cut-scenes), but they also construct narratives inside game play segments as well.

It is important to note that the ludic mechanics of these games are still not dominantly based on narrative construction. Instead they employ additional and comparatively smaller game play mechanics that help the construction of narrative inside a non-narrative game play mechanic.

Very common tools are journal entries or book chapters that could be found and read, photos or videos that could be found and looked at, audio broadcasts or non-playable character conversations that could be listened to while the game play is progressing. Additionally games that feature events or audio running in the background during the game play that contributes to the narrative also fall in this degree.

Many of these in-game narrative construction tools also help create a narrative interactivity, unlike the *1st Degree* and *2nd Degree*, where narrative sequences were isolated from action sequences and were non-interactive. Similar to the skip option of cut-scenes, the players in *3rd Degree* games may choose not to interact with a narrative tool (for example not picking up a journal entry, or picking it up but not reading it). They may also *miss* the narrative tools, by not finding where they are or failing to see them as they pass by. Additionally there is the possibility of accessing the narrative tools out of the intended order (for example finding a journal entry before finding and reading its predecessor). All of these possibilities encourage constructing personalized narrative experiences for different players.

Games with background events and audio recordings are also considered to be in this degree. Such an early example is Delphine Software's 1991 game *Another World*. The game is cited as belonging to a special genre titled *cinematic platformer* by Wikipedia[39], thus the dominant ludic mechanics of the game belong in the platformer genre. In *Another World* background events are used as effective narrative tools. In the opening of the

[39] In the http://en.wikipedia.org/wiki/Cinematic_platformer#Cinematic_platformers page, Cinematic Platformer is described as games in which the protagonists are vulnarable characters who move fluidly and within the confines of an athletic human's capacity.

game the player sees a lion-like creature in the background that follows the character. In the following screens the creature catches up with the character and confronts him. In another segment a companion that is helping the player is shown as trapped underground in a tunnel (logically in a location that cannot be seen by the character himself, but only by the player) and the player has to find a way to rescue him for the game to progress.

Figure 24. The sequence where the creature in the background follows the hero and ambushes him in Another World (1991) by Delphine Software.

Also consider Sony Computer Entertainment's 2007 game *God of War 2*, which is a dominantly action and fighting game. In the opening sequence the hero Kratos is fighting inside a building and a giant statue is seen outside the windows, trying to tear the building down. As the hero progresses inside the building, the giant statue punches through walls that opens up new pathways for the player to explore. Eventually the hero has to confront the statue, finding a way to climb it and kill it, which concludes the first level of the game. This is also a working example of a *3rd Degree* game in which the narrative flows (is constructed and progresses) inside the action sequence of the game, as a part of the ludic game play. During the boss fights in *God of War 2*, the hero also shoutes and taunts the boss characters that also sets the story of the feud between them.

A good example of another background audio would be *Half-Life*'s opening section, described in section 1.7, where the main character enters a military science compound in a tram and listens to a welcome security recording while moving around and spectating the locations around him.

In 2K Games' 2013 release *Bioshock Infinite* (a first person shooter game), the hero is fighting in a flying city where voice recordings, safety and

other automatic voice announcements as well as the hero talking to himself is a bit part of the game's atmosphere and storytelling. In this game the hero is also joined by another character named Elizabeth who follows the player around and works with the player in progressing the game. Elizabeth also regularly speak with the player. She frequently moves in pre-determined scripted ways upon entering some locations and tells the hero (and of course the player) about the background of the city, story and the locations they are in.

Figure 25. In 2K Games' 2013 release Bioshock Infinite the protagonist is joined by a character named Elizabeth who follows him around, all the while talking about the narrative background of the game.

It is important to note here that even if these small segments of narrative pieces that emerge during the game play can be experienced non-sequentially (or sometimes whether intentionally or not, missed and not experienced at all), the dominant narrative flow of the game is sequential most of the time.

As an example consider Tecmo's 2003 game *Fatal Frame II: Crimson Butterfly*. In this survival horror action game, the protagonist Mio, is searching for her lost sister Mayu in an haunted village. She uses the *camera obscura* she carries to take pictures of ghosts to exorcise them. Each time she enters a haunted building, she finds bits and clues about the story of the ghost

who haunts there. Among these narrative props are journals, photos, items belonging to the deceased. Frequently ghosts themselves appear and deliver cryptic messages about their personal stories. Eventually when enough information about a ghost has been achieved, the ghost manifests itself in a predetermined area and a fight is initiated. Although finding of the clues about ghosts are non-sequential, the dominant progression is not. The sequence of the locations the player has to enter and ghosts he has to exorcise is predetermined.

Figure 26. In Tecmo's 2003 release Fatal Frame II: Crimson Butterfly, items including the narrative ones are shown as small glows around the game locations, for the player to easily find it. The items could be journals, photos or even voice recordings. In the above screenshot an item glows under the stairs, on the ground.

This marks another common determinator for *3rd Degree* games in which exploration is encouraged to discover narrative pieces, yet at the end of the exploration the paths that could be to taken is already set.

That is not to say *3rd Degree* games do not offer any autonomy to the players. Apart from collecting narrative pieces non-sequentially, the games may also offer different paths for the dominant narrative flow. As an example *Fatal Frame II* offers a total of six different endings over different releases of the game. The Playstation 2 version released in 2003 offers three endings, while X-Box version released in 2004 adds one more addition to them. The Wii version released in 2012 has additional two endings, making this release

the one with the most possible endings. This selection of endings merges autonomy and the narrative autonomy described in this study. Some of these endings are achieved only through ludic game play options such as finishing the game in normal mode or finishing the game in hard mode. They are not associated with narrative choices made throughout the game play. An ending however can be achieved through a narrative choice. Towards the end of the game Mio finds a safe passage out of the village and there she can choose to leave the village and abandon the search for her sister. If she chooses to do so, the relevant conclusion cut-scene is shown and the game ends. This is an example of a valid narrative autonomy. The narrative is oriented not through a ludic game mechanic or setting but a narrative choice made by the player.

One can however query the valuation of such a choice as narratively autonomical. From a player's point of view the logical thing to do at this point seems to be saving the game, choosing the leave option to see this ending and then reloading to continue the game. It should be a strange individual who thinks "*this is the choice I made and the game is finished for me*" and does not try to continue to see other endings or try to find the lost sister. As is understandable from many published guides around the Internet on how to achieve endings of games, players seem unsatisfied to finding only one ending and hardly assume that the narrative they constructed is over.

On the other side, most likely there may be players who choose to pass all narrative content of these games and prefer to focus on enjoying the game mechanics. These players would most likely skip all cut-scenes, not hunt and read journal entries or stop to listen or watch background events. Yet by doing these things they are likely to miss important clues for the progression of the game and may get stuck on where to go or what to do next in some parts of the game.

Some games may merge narrative clues and action sequences so well that avoiding narrative may become impractical. The player may as well not play the game at all. A valid example to this could be Square Enix's 2013 release *Tomb Raider*. This game resets the *Tomb Raider* franchise by telling

the story of Lara Croft from her earlier years in her first adventure. In this game Lara Croft is a young, inexperienced and a vulnerable character that tries to avoid danger instead of meeting it head-on. The game's platform and action sequences are so intertwined with the narrative the game tells, it almost becomes unnecessary to play the game if one is uninterested in its plot premise. Surely there are platform, puzzle and dungeon exploration mechanics that resemble previous versions, but a player who only wants to be exposed to these aspects will have a pretty hard time. A valid example arises just at the beginning of the game where Lara Croft tries to escape from a cave that she is imprisoned in. Lara constantly talks to herself assessing the situation she is in and deciding on what to do as her next action. If the player fails to listen to the monologue, he may have trouble finding the right things to do to progress the game.

2.4.2. Exemplary 3rd Degree Games

From the 90s: Half-Life

Valve Software's 1998 release *Half-Life* is wildly popular among first-person shooters and is considered by most to be one of the best video games of all times[40]. The impact of *Half-Life* was the result of a combination of many unique innovations the game brought together. Technical achievements such as very easy multiplayer modes and seamless level transitions aside, the game's storytelling techniques were also praised.

Half-Life was one of the first FPS games that did not rely on out-of-game narrative tools such as cut-scenes. The game involved no pre-rendered

[40] Gamasutra has launched a survey in August 2006 among video game professionals to choose the best FPS game and surpassing other honorable mentions Half-Life came as the first. The results and other games are accessible at this URL; http://www.gamasutra.com/view/feature/1832/the_gamasutra_quantum_leap_awards_.php Also Filibustercartoons.com made a research/summary that brought together Top 10 / 100 / 200 lists of many gaming sites and magazines. Cross referencing all lists, the site came up with average ranks of various games that put Half-Life in the 8th place in overall popularity. (http://www.filibustercartoons.com/games.htm)

cut-scenes. All narrative intermissions (that could still be loosely called cut-scenes) were scripted events that ran inside the game play mechanics, and most of the time the control of the hero was still at the hands of the player while the pre-scripted events ran.

Another innovation was narrative bits and pieces that could be gathered from talking to NPCs (non-playable characters) met along the way. (As opposed to, kill everything that moves, as was the case in FPS games up to *Half-Life*.) These soldiers or scientiest could also help you in the game's progression, helping you fight or opening gates and doors.

In *Half-Life*'s example the information or the help, player acquires from NPCs are not recorded. In some recent games however, the game also provides the player with a journal of his own, recording dialogue and sometimes the written description of events that have happened. Thus even if the player skips pass the dialogue or information of other kind, he may still find the information in his journal when needed.

The narrative forming around the player rather than inside a non-interactive cutscene that pauses the game play experience became an influential method of storytelling to be reiterated in the future games.

From the 2000s: Alan Wake

Microsoft Game Studios' 2010 release *Alan Wake* is a psyhological horror survival game. The game's mechanics resemble a shooter where the character is seen from outside, from a third-person perspective. The player controls the protagonist Alan Wake, a horror writer, who comes to the fictional town of Bright Falls, Washington, with his wife to work on his new novel and overcome his writer's block. Shortly after the arrival to a cabin by the lake, his wife disappears mysteriously and he finds the beginning of a novel manuscript written by him which he doesn't remember writing. In time the events described in the novel comes to life and as he travels he finds new pieces of the manuscript.

During the game Alan fights against an unnamed darkness that takes over animals, inanimate objects and people. Within the game mechanics these taken enemies are covered in a shroud of darkness and can only be killed after shining light on them to remove their darkness shield. This makes the searching and management of light sources such as flashlights, flare guns, flashbangs and batteries very important throughout the game.

Throughout the game the player can also discover manuscript pages and read them (though this is optional). Manuscript pages hint at the the upcoming events in the game. Despite Alan not remembering writing the script, the events seem to be coming to life around him as the game progresses.

Among other discoverable items are TV sets that broadcast a fictional show called Night Springs, radios that broadcast local talkshows that the player can choose to stop, listen or watch. If he chooses to do so, background information about the town and the location can be gained (though the action does not pause during these phases, so if there is a danger nearby, the player has to take precaution).

The game also uses the background events and sounds effectively. In one segment the local police and FBI helicopters are searching for Alan Wake as he travels in the wood in the dark. They are under the suspicion that he killed his wife. As the player runs through the dark woods he can hear police sirens, cars and announcements for him to surrender. As he continues on he finds an abandoned police car (the policemen are taken by the darkness) and he could stop here and listen to the radio talk between the local sheriff and the FBI operative who are in a conflict about using deadly force. This is a very striking use of in-game narrative to weave an atmopshere of extreme danger.

It is again important to mention that all of these in-game narrative pieces can only be accessed through the enthusiasm of the player. The player may very well choose to skip all of these narrative sources, not stopping to

listen or picking up manuscripts to read. The gameplay mechanics still work but the narrative construction remains weak.

Figure 27. In Microsoft Game Studios' 2010 release Alan Wake, the protagonist may pause to watch the episodes of a TV show, shown on TV screens scattered throughout the game.

From the 2000s: Dead Space

Electronic Arts' 2008 release *Dead Space* is a science-fiction survival horror. The game play mechanics are based on a shoulder-view shooter (very much like *Alan Wake*'s except the player sees the character from the shoulder). The protagonist Isaac Clarke fights against *necromorphs,* human corpses overtaken and mutated by a virus, inside an abandoned space station.

The game uses an in-game display method for vital game mechanics information. Instead of showing ammo as a number in a corner of the screen, the ammo is seen as a holographic display over the gun the character is carrying. Again instead of character's health being shown on the screen as a health bar or a numerical value, the character's armor has a light at its back that shows the character's health situation. All other information, like map or instructions, are shown as holograms projected by the character's suit instead of out-of-game window pop-ups.

Figure 28. In Electronic Arts' 2008 release Dead Space, the vital game mechanic information is shown within the game world, instead of within additional graphical elements on the screen. In the above screenshot, the character's health status is shown as a (yellow) bar behind his armor's backside.

This seems to be a good solution for immersing the player further into the atmosphere (both action and narrative). The game's viewport is cleared of any floating unreal data and a cinematic realism is obtained.

Much like *Alan Wake* the game uses all narrative tools common to *3rd Degree* games. Finding video and audio recordings, characters speaking over radio communication, wall graffitis (written in blood, of course) and pre-scripted in-game cut-scenes.

In a memorable in-game scripted event, the protagonist is sent to the abandoned station with a team in the beginning of the game. As his team is getting ready the protagonist is in another room, which is seperated by a glass wall. The *necromorphs* are seen for the first time in game, as they enter the room where the team members are and brutally kill them as the player has to watch them from the other side of the window. The player can move around at this point but cannot intervene since he has no weapons to fight. Surely enough the creatures find a way inside his room and he will need to run away in a pretty electric segment.

2.5. 4th Degree: The Universe at Pause

2.5.1. Definitions and Discourse

By now an escalating route seems to be forming as the degrees are scaled up. It has started from a narrative space that is only there as a tool to

support the ludic content of the game (*1st Degree*), escalated to a narration told parallel to the ludic content of the game using out-of-game devices (*2nd Degree*) and a narration told partially inside the ludic content of the game using in-game devices as well as out-of-game devices (*3rd Degree*). None of these degrees however had dominant ludic formulas inclined towards storytelling themselves.

This brings us to the games in *4th Degree* that have two main differentiating characteristics; formulation of ludic game mechanics that are *specifically* created for telling an interactive story and the phenomenon of *universe at pause*. Unlike previous degrees, these characteristics also correlates (but not limits) this degree primarily with a certain game genre; the genre of adventure games. Though a selection of RPG and action-adventure games could also fall into this category.

The main distinctive feature of *4th Degree* games that seperate them from *3rd Degree* (and below) is the way they create their ludic game mechanics specifically for creating an interactive narrative. Unlike lesser degree games, instead of creating a narrative that fits best with the game play mechanics at hand or creating partial game play mechanics to progress a parallel narrative, the *4th Degree* games focus on creating ludic storytelling techniques.

Since video games that struggle to create ludic narrative techniques are commonly associated with the term *adventure* (a concept, not limited to, but mostly defining a genre) it could be fruitful to focus on the history of adventure games genres to understand *4th Degree* games even better. According to the book *Andrew Rollings and Ernest Adams on Game Design*, the term *adventure* comes from a 1976 game developed by William Crowther and Don Woods (Rollings & Adams, 2003, p. 443). The game's true title is *Colossal Cave Adventure*, but most of the time it is referred simply as *Adventure*.

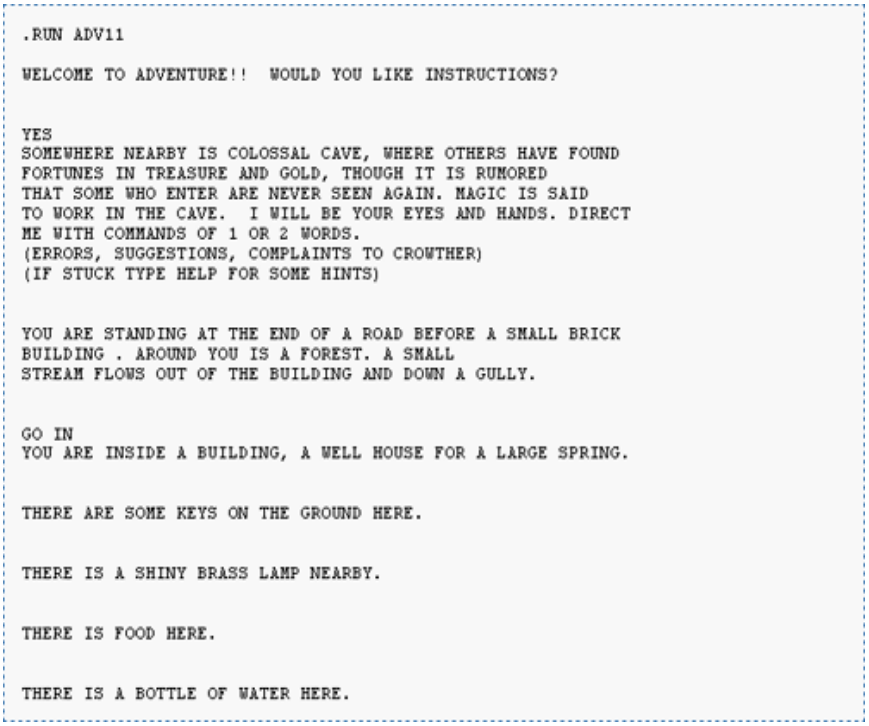


Figure 29. William Crowther and Don Woods' 1976 game Colossal Cave Adventure is cited as the game that gave its name to popular adventure game genres.

The same book describes adventure games as;

> "An adventure game isn't a competition or a simulation. An adventure game doesn't offer a process to be managed or an opponent to be defeated through strategy and tactics. Instead, an adventure game is an interactive story about a character who is controlled by the player." (Rollings & Adams, 2003, p. 443)

As governed by the limitations of the first computers, the first adventure games were a hundred percent text based. The computer described the environment the character was in, the user gave written instructions containing a verb and a subject (like *open door* or *go north*) and the game engine processed the instruction and redescribed the outcome of the instruction (if any).

These text-only games were sometimes also referred to as *interactive fiction*. In his book *Twisty Little Passages: An Approach To Interactive*

Fiction, Montfort points out the similitude between interactive fiction and the century old literary riddle tradition (Montfort, 2005). This is mainly because the riddlee has to be immersed inside the world of the riddle to understand and solve one. So;

> "Interactive fiction is related to the riddle because the interactor, in facing a puzzle-based interactive fiction, is in a situation similar to that of the riddlee. In an interactive fiction work, the interactor directs a character (the 'player character') in the interactive fiction world to enact and understanding of that world." (Montfort, 2005, p. 4)

The text-only adventures in time are upgraded to games that include static graphics. Instead of describing the environment with a text, a graphic was shown. GamePro.com cites *Mystery House* as the first adventure game that features graphics[41]. This game was released in 1980 and developed by Roberta and Ken Williams who will later find the company Sierra On-Line. The game features 70 non-animated, simple drawings that accompany certain locations.

[41] The site cites the game as "the first adventure game to feature a visual component" accessible here;
http://web.archive.org/web/20070520142756/http://www.gamepro.com/gamepro/international/games/features/110028.shtml

Figure 30. Roberta and Ken Williams' 1980 game Mystery House was the first adventure game that offered graphics instead of describing the environment in text.

From here adventure games progressed into animated characters, animated backgrounds and characters that could move inside the game world. A dominant style for adventure games later proved to be *point-and-click adventure games*. The players could click the locations on the screen that they wanted their characters to walk to, or click items or people that they wanted their characters to interact with. This has spawned numerous variations. One praised system was the *SCUMM (Scripted Creation Utility for Maniac Mansion)* engine, in which actions that could be performed by the player over the game world was predetermined and was visible on the game screen as text buttons.

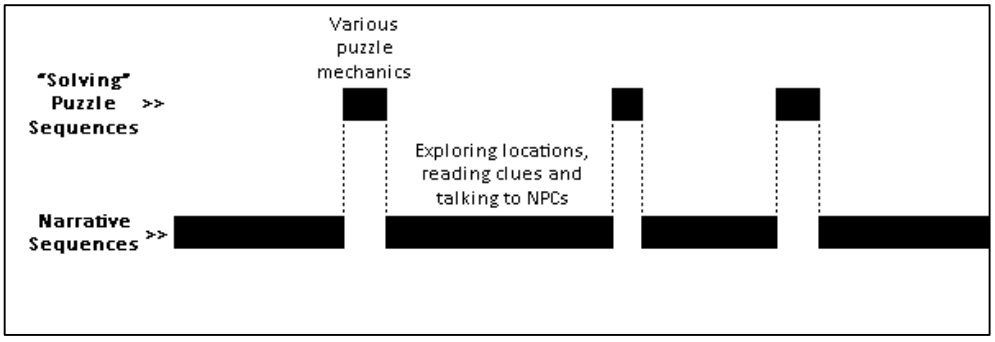
Figure 31. LucasArts' 1990 adventure game The Secret of Monkey Island was using the SCUMM engine.

This later opened up ways to games where the game world was full screen and commands and inventory only became visible when the player

moved his mouse cursor to the upper or lower edge of the screen. These games were followed by adventure games where there were no visible or revealable actions. Instead when the cursor was moved onto an item, a person or an area of interest, it automatically changed into or showed possible actions that could be performed with that specific area. As Black summarizes;

> "[Adventure game] Designers create spaces with player experiences in mind, allowing a space to become a narrative through the players' responses to it. As an alternate aesthetic, this spatial form does not preclude narrative; rather, it shifts responsibility onto players in the sense that they must look for and pick up on a designer's narrative cues within a game's spaces, resulting in a wide range of narrative experiences, depending on players' skill." (Black, 2012, p. 214)

Moving on from Monfort's definition an adventure game can be deemed as a sequence of puzzles – both narrative puzzles (whom should the character speak to, what should he say, which item should he use where, which location should he go next, etc.) and ludic puzzles (cracking a safe code, piecing together a torn photograph, etc.). In this formula the game universe pauses between the transition of the solving of these puzzles (a concept that will be defined as *universe at pause* within the next pages). This creates a reflection of the *2nd Degree* in which the game was oscillating between action and narration sequences. In *4th Degree* then the game oscillates between narration and puzzle sequences.



Thus most of the debate done about the balance of the action and narration oscillation in *2nd Degree,* also becomes valid for the puzzle and narration oscillation in *4th Degree*. Puzzle sequences being too hard or obtrusive, using walkthroughs to *pass* puzzles, the weakness in the relatedness of the puzzle context and game world, could be such reflected arguments.

Another important defining property of *4th Degree* games is the phenomenon of *universe at pause*. This phenomenon occurs mostly in adventure games and its subgenres, as well as some genres of role playing games as well. Although these games strive to build their game universe consistent within itself, a common deviation occurs in the usage of time. In *universe at pause* till the player finds the correct action to perform the whole narrative will not progress and pause or loop in small segments. An NPC may keep on repeating the same thing over and over again, an animate object may be looping an action for eternity until the player finds the correct action that will progress the game. Even travelling long distances will not help. The player will find a location that he has left for a long time, exactly the same as he left, when he returns. Pedersen observes this phenomenon;

> "Usually all gameplay, storytelling, or advancement [in an adventure game] is paused until the puzzle is solved." (Pedersen, 2009, p. 37)

Granted there are adventure games that experiment in the use of time in different ways, but this study will put them into the *6th Degree*. *4th Degree* hosts all those adventure games that work within the principle of *universe at pause*, which seem to be the dominant majority of the games in question.

If one was to rethink Montfort's definition within the light of the *universe at pause* principle, it becomes understandable that *4th Degree* games rarely employ feelings of urgency or constant danger – because it is impractical to solve puzzles under the stress of action. In *3rd Degree* games as the player stops to enjoy a narrative piece within the action sequence there

may be the possibility of an enemy or a danger of another kind sneaking up on him. The example game *Dead Space* is especially infamous for not pausing the world when the player opens up its inventory.

In adventure games however the protagonist is rarely in a pressing danger. Although there are ways for protagonists to die or be hurt in adventure games these are rarely the results of player's inability in performing a ludic action within a certain time frame. It happens most likely as the result of a narrative choice the player makes for the character. The tension in adventure games (if any) is unlikely to be the result of a game's ludic mechanic, because game's ludic mechanics are focused on creating narrative/puzzle oscillations instead of creating actions.

Consider Revolution Software's 1996 adventure game *Broken Sword: The Shadow of the Templars.* Towards the end of the game as the protagonist George Stobbart and his love interest Nico is traveling by train to the final location of the game, Nico gets kidnapped and George has to save her. This kidnapping creates no urgency in the game. The player can walk aroung the train and spend time talking to NPCs or examining locations as much as he likes, because it is apparent by the game's play so far that Nico is not really in a countdown danger. The events will not progress until George finds a way to reach the front of the train.

As in their nature *4th Degree* games enclose a narrative interactivity. The narrative is constructed and progresses through the actions of the player. Although cut-scenes may be involved the distinction between action sequence and narration sequence is non-existent. There are unlikely to be action sequences that deal with other game mechanics than constructing a story or small puzzle solving mechanics like numberpads, lockpicking, code matchmaking and so on. Yet even these small additions are created to help construct a consistent narrative flow.

Autonomically adventure games vary. Some may have single line narratives, while others may have choices that create alternate paths and

endings. Most of the time the player may orient the dialogues with the NPCs. In any case there is likely to be a certain limit of narrative autonomy even when the dominant narrative flow is in a single line. This is unsuprising since replayability in an adventure game is only ensured through the existence of alternate story paths or endings (or protagonists).

2.5.2. Exemplary 4th Degree Games

From the 80s: Maniac Mansion

LucasArts' 1987 adventure game *Maniac Mansion*, is the game which the famous *SCUMM* engine was built for. The game features protagonist Dave Miller, and his two friends (selected from a list of six friends by the player at the beginning of the game), as they try to rescue Dave's cheerleader girlfriend Sandy Pantz from a mad scientist's mansion. The six additional playable characters remind of horror movie stereotypes and the whole game seem to represent the horror movie trope where a group of young people go into an unknown mansion.

The selection of the two characters create alternate plays, because each character has unique abilities that change the solutions of certain puzzles inside the game. The game is, of course, designed in such a way that it can be finished with any two characters chosen. There is an ability to switch between the controlled characters and each can travel and act independent of each other. The characters may be imprisoned or killed, during the course of the game. The game has five possible endings depending on chosen characters, which survived and what choices were made in certain fragments (Shay, 1987).

Figure 32. LucasArts' 1987 adventure game Maniac Mansion is the game, which the famous SCUMM engine was built for.

From the 90s: Indiana Jones and the Fate of Atlantis

LucasArts' 1992 adventure game *Indiana Jones and the Fate of Atlantis* featured an adventure scenario for the famous movie character Indiana Jones, which was not adapted to or from the silver screen. The plot revolves around Indiana Jones as he searches for the legendary sunken city of *Atlatis*. The game play is based on *SCUMM* system.

The game had a very rare autonomical scheme. A few events into the game the player was given an important choice. The player makes this choice by selecting dialogue options. The love interest in the game, an ex-archaeologist who became a psyhic, Sophia Hapgood, asks Indiana Jones if they want to continue the adventure together. The player has three dialogue options that result in three distinctive game paths. The paths are so distinctive that the events, locations and puzzles in each are extremely different. If Jones wants Sophia to come with him, the game turns into the *Team Path*. Sophia travels with you and helps you along the whole journey. In this path the player can avoid fights and is helped by Sophia to solve puzzles. If Jones chooses a macho answer, the game turns into *Fists Path,* in which the player will need to fight his way through many obstacles (a fist fighting mechanics is avaliable in the game). If Jones simply states that he does not need company and trusts

his own mind, the *Wits Path* is initiated which is heavier in puzzles and lesser in danger than the other paths.

If the player did not examine the game's manual to learn of these options or did not hear it from someplace else, he may assume the game to be a single line and the path he chooses may reflect a personal aspect of him.

Figure 33. LucasArts' 1992 adventure game Indiana Jones and the Fate of Atlantis uses the SCUMM engine.

From the 2000s: Gemini Rue

Wadjet Eye Games' 2011 release adventure game *Gemini Rue* seems to be a proof that old style adventure games can still find audience today. The two protagonists; Azriel Odin and Delta-Six seem to be irrelevant characters living far off in the 23rd century. The story oscillates between their narrative segments until eventually they merge.

The selection of this game has two motives; the adventure game genre is in decline. It was at a decline since from the beginning of 2000s. As Sikora observes in 2002;

> "Recently […] storytelling in games appears to have taken a rather sharp decline. With the advent of massively multiplayer online games (MMOGs) and improved graphics, storytelling seems to have taken a back seat to other gameplay elements." (Sikora, 2002, p. 273)

This study would like to reevaluate this statement; the production of *4th Degree* games by big companies and their comparatively large sales numbers seem to be in decline. Independent small companies such as Wadjet Eye Games and many others are still producing *4th Degree* games[42] while bigger production companies seem to have focused on *3rd and 5th Degrees*[43].

The second parallel motive in the selection of this game is to illustrate how the milieu of these games still reflect the days the adventure games were most popular. *Gemini Rue*, not only employs 90s style interaction system, it also has pixellated graphics much like the graphic adventures of 90s. Even in these days when narrative games are seeking more immersive and dynamic interaction themes that break the paradigm of limited commands, the older style adventure games are still produced and played.

2.6. 5th Degree: Non-Sequential Autonomy

2.6.1. Definitions and Discourse

The 5th Degree manifests itself in role playing, open world (sandbox), open world role playing and massively multiplayer role playing genres. In this degree the players are encouraged to stray away from the dominant story line (if any) and nurtured into explorations, questing, discovery and creating their own protagonists which sometimes are rightfully titled as *avatars*.

Starting from a trend in the *1st Degree* in which there was no narrative but just traces of a narrative space and progressing into *4th Degree* where the whole game's mechanics were designed to construct narratives, *5th Degree* games are the ones that could be called as *narrative engines*. These games construct a simulation of a fantasy world where the player can adventure as whomever he chooses to be.

[42] http://www.adventuregamers.com/ is a good source to follow the indy companies and their recently produced adventure games.

[43] Please refer to the statistical study presented in 3.3 to observe this trend.

Granted some of these games may feature a main narrative story line, one which determines where the actual game begins or ends. Yet they also have enough parallel or side stories, locations and narratives to keep the player off this main story line for an important portion of game play time. By contrast massively multiplayer online role playing games do not have traditional story lines where the game has an ending. Instead they get regular updates that keep updating the stories, locations and quests.

The majority of such engineered worlds are meant to be experienced non-sequentially (although many offer a character level system to decide where would be safe or dangerous for the avatar to explore).

In Blizzard Entertainment's 2004 release *World of Warcraft*, the avatars begin in a small town dictated by their race and by doing quests move onto bigger towns and eventually into capital cities. However players may decide not to follow this flow, they may choose to move to other race's cities and starting zones - although the journey would be perilous – or move between cities earlier or later than expected. As the game progresses the player has bigger options on where to go, which quests to do, where to explore and where to hunt. It is easily possible for a *World of Warcraft* player to have no knowledge of several locations, towns or people and quests avaliable there.

Thus each avatar carves his or her own story in this simulated game world with its unique narrative engine. It would be misleading to claim that these games are only played for the stories they weave. A large and exteremely popular game like *World of Warcraft*[44] that holds the 2009 *Guinnes World Record* for "Most Popular MMORPG Game in Terms of the Number of Online Subscribers" (Glenday, 2009, p. 241) is bound to have many different engagement formulas other than constructing narratives. A player can easily bypass all narratives of the game, by not reading quest texts,

[44] According to IGN as of October 2012 the game pushes over 10 million subscribers. http://www.ign.com/articles/2012/10/04/mists-of-pandaria-pushes-warcraft-subs-over-10-million

books founds or dialogues of the non-playable characters as well as skip all avaliable cut-scenes. Instead the player might focus on other dynamics of the game like player vs player combat, beefing up a character to beat virtual enemies and encounters or recently added mechanics such as collecting and battling pets. Yet there is no denying that the narrative portion of the game invades a large part of its production value and even if the player specifically focuses on bypassing it, to some degree is extremely hard to avoid completely. The player would eventually need to do a quest, follow a scripted event or listen to what a character says to progress whatever ludic goal he is after.

One can even argue that the creation of an avatar involuntarily puts the player inside a narrative whether he asks for it or not. Even if the player chooses to keep the interaction with the narrative segments of the game in a minimum, the events that the created avatar will go through would still create a narrative for the player. Hence the reason why *5th Degree* games could be entitled as *narrative engines*, they produce narratives within or outside of all the narrative content they might employ. After all as described by Jordan in his book *Cyberpower: The Culture and Politics of Cyberspace and the Internet*;

> "The existence of an avatar means someone has used some of cyperspace's resources in ways that result in other avatars recognising a stable online personality." (Jordan, 1999, p. 59)

Thus as soon as a player decides to create an avatar to play such a game, he has already started using the narrative sources of the game (such as selecting a race, a profession or even how the character looks). Each step he decides to take in the game world then keeps using and reusing the narrative resources of the game whether he decides to ignore them or not.

For massively multiplayer online games this is even more complicated. Even if the player does not intend to construct any narrative

himself (in which he wouldn't succeed anyway), he would become a narrative piece in someone else's narrative (*"Just as I was passing the bridge, a wizard appeared and killed me"*).

As in their nature 5th Degree games contain narrative interactivity and autonomy. The narrative is constructed through the actions of the player and the narrative flow is both autonomical and most of the time non-sequential. Offline role playing games may employ the *universe at pause* principle. A town, a city or a narrative hub of any other source may remain the same till the player visits it. Some role playing games employ the concepts of day and night or seasons to invoke the feeling of passing time. The non-playable characters change places according to the time of the day or the year, or extra narrative elements may emerge in different times.

This may also be true for online games too, yet periodic upgrades do also change locations and reshape the worlds in online role playing games, breaking that convention of *universe at pause*. However this is not a requirement for a 5th Degree game.

2.6.2. Exemplary 5th Degree Games

From the 80s: Pool of Radiance

SSI's 1988 role playing game *Pool of Radiance* was one of the first games that adapted the *Dungeons & Dragons* table-top gaming analogy into video game medium.

As with the standard for many follow-up games the player has to create a party of up to six characters. The game takes place in the fictional town of New Phlan in a world called Forgotten Realms. The group of characters are charged with the ruling council of the city to clean the area around the city of evil monsters and characters. The ruling council of the city gives out quests and missions through the mission board in the city. The player chooses the missions to undertake and may finish them in whatever

order he wishes. The player can also venture outside the area without taking any quest in particular, only exploring and battling.

The game has an ending. The players eventually discover that an evil dragon named Tyranthraxus is orchestrating the events around the city and confront it in a final battle. Even after the battle is finished and the players get rewarded by the city, the player might choose to keep on playing, exploring and questing more.

There is an option to transfer one's characters into the next game in the series, the 1989 release *Curse of the Azure Bonds*.

Figure 34. Sample screens from SSI's 1988 game Pool of Radiance. From top-left to bottom right; a conversation screen, a battle screen, a character screen and an exploration screen.

From the 90s: Baldur's Gate

BioWare's 1998 released game *Baldur's Gate* is another adaptation of *Advanced Dungeons & Dragons* table-top gaming system (an upgrade to *Dungeons & Dragons*), that takes place in the same world as *Pool of Radiance*.

The game lets the player create and control one character with a predetermined background according to the created character's chosen

profession. The player learns of the character's past and relationships through dialogue, entries and cut-scenes, yet it is mostly the player himself that constructs the character's background. As Carr puts it; "Much of the storytelling in *Baldur's Gate* is related to the player via the direct 'you' of second-person address." (Carr, 2006, p. 31)

Clicking on other characters initiates dialogues with various responses that could be selected by the player which in turn may result in missions or quests.

As the game progresses the player may choose to have companions who will join his character throughout the game. Although there is a central narrative built around the predetermined character, the game world is free to be explored in a way the player finds fit. Some parts of the game world though may be inaccessible till the central narrative progresses to a certain point.

The game uses the night-day change in time effectively. The content of the towns change according to the time of the day.

From the 2000s: Guild Wars 2

NCsoft's 2012 release massively multiplayer role playing game *Guild Wars 2* hosts some unique properties inside the genre of online role playing.

Similar to other MMORPGs (massively multiplayer online role playing games), in *Guild Wars 2* the players get to create an avatar and direct it inside the game world. The world of *Guild Wars 2* shares similar mechanics with many MMORPGs; cities, towns, crafting items, fighting monsters, dungeons and questing.

Unlike many other MMORPGs though, *Guild Wars 2* employs pop-up events. These are scripted events that begin and end randomly around the game world. The players can only experience them, if they are there at the time or if they *camp* for it (meaning waiting at the place where the event is supposed to randomly pop).

This creates an even more chaotic narrative autonomy as a result. A player who experiences an event in a certain place, may visit that place with another character and could not find that event happening there.

The game employs a central narrative specific to the avatar's chosen race and profession. Yet the steps between the central narrative are pretty split in terms of character skills. If a player was to follow only the central narrative he would eventually fall back at the character progression and fail to succeed in quests. Thus, the players are encouraged to go out and visit other places between the central storyline quests to acquire more skills and items for his avatar.

Figure 35. In ArenaNet's 2012 MMORPG Guild Wars 2, the characters create avatars and direct them inside the game world.

2.7. 6th Degree: Experimental Narration and Autonomical Variations

2.7.1. Definitions and Discourse

This study proposes that five degrees described so far (six degrees if one would count the Degree 0), cover a vast majority of games in describing the relationship between their ludic and narrative content. Yet a *6th Degree*

is needed to host games that do not fit in either of the previously defined degrees, either because they are experimental or they marginalize or disrupt a characteristic of other degrees.

Thus, it would be impractical to determine common properties or definitions for *6th Degree* games in general. They could only be evaluated on a case-by-case basis. It is however possible to conclude that *6th Degree* games may employ experimental ludic mechanics for constructing narratives, marginal interactivity schemes and autonomical variations.

2.7.2. Exemplary 6th Degree Games

Blade Runner

Released by Westwood Studios in 1997, nearly fifteen years after the release of the famous movie that it is based on, *Blade Runner,* is a point-and-click adventure game for the personal computers (thus will be called *Blade Runner PC* from now on, to prevent confusing it with the movie).

Instead of re-simulating the story of the movie, *Blade Runner PC,* tells the story of another dedective named Ray McCoy, a blade runner who works to hunt down replicants in 2019 Los Angeles. The movie's protagonist Deckard is seen once in a non-speaking role in the game but is also referred a few more times later. The game's narrative tells a story that runs parallel to the movie's. The game is less of a puzzle adventure game and more of a dedective simulation. The flow of the game progresses as Ray moves from crime scene to crime scene to gather clues and uses his instruments to analyze them. Ray also visits locations from the movie, to interrogate characters and perform *Voight-Kampff Empathy Tests*.

The game is an effective extension the movie. As Atkins observes*;*

> "The player revisits locations and encounters characters familiar from the film, and there is an undeniable pleasure in the recognition of correspondences and the accumulation of an increased

> knowledge of a world consistent with that presented in the film, just as there is a pleasure in the degree to which *Westwood* have captured the atmospheric look of the future Los Angeles created in such detail for the film." (Atkins, 2005, p. 82)

The game has thirteen possible endings that rely on various different paths the player can take. The player can choose Ray's reactions in different situations as well as his stances in the dialogues with the non-playable characters, setting the balance between agressive or empathic approaches.

In this aspect the game seems to fit in the definition of a *4th Degree* game, yet there is a variation that strays the game out of this group. *Blade Runner PC* does not adhere to the principle of *universe at pause*. Instead it was advertised as a *real-time adventure*[45]. This means that the game time has dominant segments that will not wait for the actions of the player. If Ray (the player) loses time in solving a screen, he will arrive at the next screen late and the computer controlled AI (artificial intelligence) characters that are trying to complete their own objectives would be ahead of him.

The various endings of the game, are not only determined by the choices made by the player, but also the time he takes in the progression of the story. This is a distruption of the *universe at pause* principle of the *4th Degree* games, and as a result creates a feeling of urgency.

As a result a throughly replayable game is created. The player can easily experiment with the narrative, arranging his reactions to the non-playable characters and adjusting his pacing. There are conflicting accounts on whether this multi-linearity worked as a successful game or not. Crogan points out the criticism that the game is too automated on the basis that it continuously provide users with binary choices, and concludes;

[45] The back cover of the game's CD case is avaliable at http://www.brmovie.com/Images/Games/Blade_Runner_Game_BackBox_2.jpg

> "This criticism of the game as too automated is illuminating. It mobilizes what is the key binary opposition structuring both mainstream and critical discourses on computer-mediated interactivity: that between freedom and constraint. Interactivity is generally presumed to offer greater freedom to the media user, who is no longer simply a passive recipient of broadcast transmissions—no longer constrained by an inability to respond, alter, or otherwise interact directly with the media text. Conventional narrative, with its closed, linear, and predetermined form, is seen as the model instance of constraint against which the new media struggle." (Crogan, 2002, p. 640)

On the other side Tosca argues that players enjoyed and utilized this choice based progression and found motivations to replay the game;

> "According to my observations in the players' fora, I argue that many players of this game actually set their own emotional quests in order to keep their interest in the game alive, such as befriending the replicants, or trying to find the branches that will allow them to develop a romantic relationship with one of the female characters." (Tosca, 2005, p. 101)

In either case, the usage of real-time and the distruption of *universe at pause* principle moves this game into 6th Degree.

Silent Hill 2

Silent Hill 2 is a survival horror game published by Konami in 2001. It tells the story of the protagonist James Sunderland, who recieves a letter from his dead wife that tells him to come and find her in the town of Silent Hill, a small, rural and fictional American town. The game begins with James arriving at the abandoned town and follows him as he seeks his wife. By doing

so the abandoned town begins to transform into a realm of nightmare filled with darkness, bloodshed and hellish creatures.

The games in the series of *Silent Hill*, are sometimes referred as psychological horror games and are furnished with subtle references regarding human nature that is prone to narrative and psychoanalytic analysis (Kirkland, 2005; Kirkland, 2007; Santos & White, 2005; Perron, 2012).

The game emphasizes exploration rather than fighting action. It is also an exploration of the protagonist's pysche, his shrouded past and his relation to his dead wife Mary. As Perron puts it; "As the player completely uncovers the background story of James Sunderland at the end of *Silent Hill 2*, it appears that the character has been caught in some sort of psychological hell." (Perron, 2009, p. 31)

The real story between Mary and James is uncovered slowly during the process of the game. It seems that Mary was terminally ill and bedridden for a very long time and James who was tired and overwhelmed by looking after her, eventually kills her. The town is actually a representation of James' guilt over what he did to his wife. In the town James also meets Maria, who physically resembles her wife but dresses and acts in a more seductive way. This is probably a reflection of the subdued sexuality of James as he probably was unable to have a sexual relationship with his sick and bedridden wife for a long time. A dominant monster in the game is called the Pyramid Head, who first appears in an apartment room, and seems to be raping other female-looking monsters. James is unable to fight or hurt this monsters and always needs to avoid it. Pyramid Head also kills Maria on a few occasions in the game but each time Maria comes back pretending to have no memory of her recent murder. In this light Pyramid Head may be a reflection of the dark side of James, raping and killing the reflection of his wife. Kirkland's observations seem to support the same outcome;

> "[Silent Hill 2's] final boss, a monstrously transformed version of James' dead wife,

exemplifies such tendencies. By this final stage attentive players might suspect James' responsibility for Mary's death, due to his conflicting feelings towards her, and that the entire game is a projection of James' tortured imagination. Killing Mary, in this context, represents a repetition of James' act of euthanasia – a misogynistic obliteration of the woman he grew to resent, the manifestation of his guilt and self-loathing." (Kirkland, 2007, p. 414)

Figure 36. The first appearance of the monster Pyramid Head in Konami's 2001 horror survival game Silent Hill 2. The creature seems to be sexually harassing other female-looking creatures.

Among other people who James meet in Silent Hill, one is a young girl named Angela. She seems to be living a personalized nightmare of her own in this town, which gives the impression that the town provides each of its visitor (or victim) a personalized nightmare experience from his or her past. James first meets Angela when he is first entering the town and later discovers her in a room trying to commit suicide. She confesses that her father was sexually abusing her and gives James the knife that she was planning to

kill herself with. This knife becomes a paramount item for one ending of the game.

The game has six possible endings and two of them are created as joke endings irrelevant with the narrative (in one called the "*Dog Ending"*, James' dog is revealed to be the culprit behind the town and in one called the "*Ufo Ending"*, an ufo abducts James before he can find his wife). In an ending titled *"Leave"*, James fights the final boss creature Mary and then leaves the town. In *"Water",* James fights the final boss creature Mary and then commits suicide. In *"Rebirth",* James tries to resurrect Mary but fights Maria who turned into a monster instead. In *"Maria",* James fights the final boss creature Mary and leaves the town with Maria (who is heard coughing in the final scene).

So far the game resembles a *3rd Degree* game. Yet the ways in which these endings are achieved pushes the game into a *6th Degree*. Within this study the method employed by this game will be titled as *obscured autonomy*. If a player has never read a walkthrough of the game and does not know the requirements for each ending beforehand, the ending he achieves may also reflect a psychological profiling for himself.

Silent Hill 2, decides the ending by examining the obscure actions and decisions taken by the player during the game play – especially when the player was unaware that he was making a decision[46].

For example if the player listens to the directions given by Maria, does not check the photo of Mary in the inventory more than once, keeps close to Maria as he escorts her, protects her from monsters, does not listen to the final conversation of Mary just before the game's end, the game decides that James (or the player) has had enough with Mary and does not carry guilt over

[46] Silenthillmemories.net lists all these decisions to achieve each ending; http://www.silenthillmemories.net/sh2/endings_en.htm

her death. The result is James fighting Mary at the end and leaving with Maria in the ending.

In the opposite side, if the player mistreats Maria, leaving her behind while escorting her, not listen to her directions in town, reads and listens to all entries and recordings about Mary, the game decides that James (or the player) feels guilty about killing Mary and still misses her. The result is James fighting Maria, getting forgiveness from Mary and leaving the town to continue with his life.

If the player goes throught the game taking a lot of risks, not healing James enough, keeps his health bar flashing red, examines Angela's knife in his inventory more than a few times, the game decides that James had enough about living and is suicidal. This results in the ending where James kills himself.

As can be seen, the game uses a rather obscure method of autonomy to read player's reaction to the game's story. The player never has to make an apparent binary choice that directs the narrative. In fact, unless he knows otherwise, he never becomes aware that his actions are effecting the outcome of the game. When a player, who has no knowledge of several endings and the requirements, achieves an ending, it is possible to deduce that this ending was involuntarily decided by the player (not the protagonist James), towards his reactions to the situation James is in.

This marginal autonomical variation pushes this game from a *3rd Degree* into the *6th Degree*.

Figure 37. James asking for his wife's forgiveness in the "Leave" ending in Silent Hill 2.

Machinarium

Amanita Design's 2009 adventure game *Machinarium* has won several awards for design, visuals and leadership in the genre[47]. The game could have been in the *4th Degree* but is a different breed in the adventure game genre because it contains no dialogue (spoken or written). The whole communication is maintained with pictograms in speech bubbles.

It is interesting to observe how the game can keep its narrative nature despite being completely textless. This is especially interesting since the adventure games evolved from *text adventures* or *interactive novels* (with no graphics) into *graphic adventures* (with text and graphic). *Machinarium* represents a breed that is purely graphical. Not only in terms of text, but in terms of music and sound effects the game is also pretty minimalistic. This also creates a game with a global language and represents a solution to overcome the problem of translation in adventure games.

Because the game lacks text the player can never fully grip the storyline but an abstract version of it. There is the kidnapped girlfriend, a betrayal of a friend, opressing of a city's denizens and a plot for violence. Yet all in all the story is bound to have a lot of space for interpretation. The narrative becomes interactive and autonomous on a different level.

In this aspect the game moves into the *6th Degree*, as it offers a different approach to narrative interactivity and autonomy. The player not only constructs the narrative within the game's ludic rules but also in a sensorial level.

[47] The game's Wikipedia page lists all the awards the game won with relevant links; http://en.wikipedia.org/wiki/Machinarium

3. Conclusions

3.1. Application of Six Degrees to Recent Sales Charts

This section is created to see the system in practice on the sales charts of top-selling games between 2005 and 2013[48].

An alternative motive for implementing this data is to discover if any trends in the recent years that may have arisen for narrative usage in video games. This will also, in a way, help validate the existence purpose of S*ix Degrees* system, as it was mainly created to help analyze and categorize the usage of narrative in video games.

To create the data, globally top-selling 50 games (in retail) from each year is taken. For the year 2013 only the data till the week ending with 20th of April is retrieved. Then each game in each list is analyzed in terms of six degrees and given a degree. The author of this study would like to retain an error of margin in determining the degree for each game, as playing each one personally was not an option, in which case personal experiences from acquintences, reviews and data from the Internet were used.

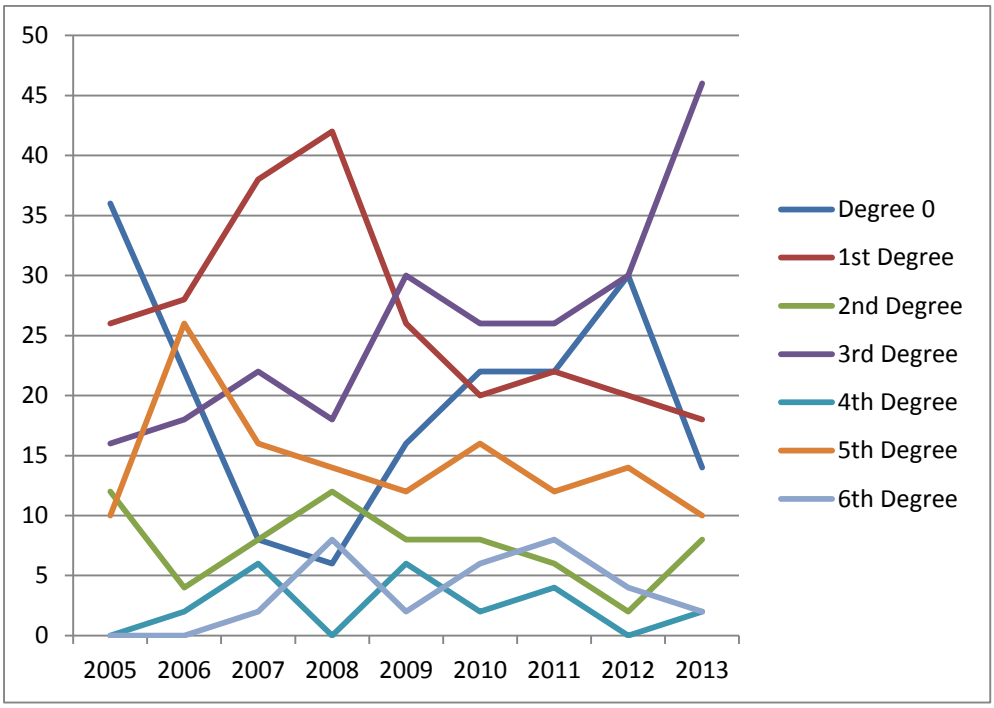
Whenever possible only the single player modes of the games were taken into account. As a result a percentage of each degree within each year is found. Reflecting these percentages into graphics allowed us to see the trends of the popularity of narrative usage in video games in producers and gamers[49].

As a last step it was possible to compare the trending production numbers over the years;

[48] These sales data only represent the retail sales and is taken from the VGChartz Network website on http://www.vgchartz.com

[49] All of these tables and graphs are avaliable in APPENDIX A.

Table 1. Global Top-Selling (in Retail) 50 Titles through 2005-2013 (up to 20th April) distributed over degrees



Understandably the production of *6th Degree* games are always at the low. Experimental games seem likely to be accepted as risks for big game studios and even unlikelier to appear in the Top 50 best selling games. They seem to be however a rising trend for the future as before 2007, they were at zero.

4th Degree games however seem to be deliberately out of fashion for big production companies and large sales numbers, from the time they were popular around 80s and 90s. However *4th Degree* games still seem to be favourable among small indie game companies. There seem to be a specific scene where these adventure games are produced and played[50].

[50] http://www.adventuregamers.com/ seems to be a good resource, among many, to follow the fate of adventure games.

5th Degree games are nurturing a constant interest. It is very likely that higher production times and budgets are keeping the release numbers of these games under a limited amount.

3rd Degree games, however, are showing an increase over the time and are likely to increase even more in the upcoming years.

2nd Degree games are maintaining a low but steady profile while *1st Degree* games seem to be in a decline.

3.2. Concluding *Six Degrees*

How to read a video game text? This study was never meant to answer this question. Video games are ludic entities by their nature, yet inevitably they also tell stories from crude to complex structures. However wide reach they achieve, the stories they tell, or the way they tell them, may still be subject to misprision. They may be underachieving in the lanes where more is expected from them. Yet it seems acceptable that narratives are a part of video games and the storytelling techniques they utilise have evolved from the past times and will continue evolving in the future.

In its pure form this study wanted to argue that the concept of *narrative* in video games was a wider cloud of possibilities than first meets the eye. To be employing a narrative, a game need not tell constructed epic stories with consuetudinary structures coming from narrative heritages. Video games can also be creators of narrative spaces - diegesis, and act as narrative engines. They may choose to employ out-of-game devices to tell their stories or construct their storytelling only inside their ludic sequences – or even both. They may be telling stories for the sake of telling stories or they may be throwing together rambling narrative elements just to make their ludic mechanics feel more acceptable. In either case they are telling stories while transforming their players into accomplice storytellers.

The *Six Degrees* classification is formed to argue that the strategies video games employ to weave stories are not so far off from each other. There

are dominant indicators that seperate and group the way narratives are used in games. Although a much more detailed comprasion is given in section 2.1 a summary comparison that could be repeated here is (this comparison is also given as a table in section 3.2);

Degree 0	Degree 0 games do not employ or construct any narrative, narrative space or narrative elements. The ludic mechanics of these games are non-narrative.
1st Degree	*1st Degree* games employ narrative elements such as heros, villains and narrative tropes to create narrative spaces (or diegesis). These games might also employ crude cut-scenes for the beginning and the ending of the game. The ludic mechanics of these games are non-narrative.
2nd Degree	*2nd Degree* games construct narratives with out-of-game devices such as text, graphic or video cut-scenes oscillating with the levels or otherwise action sequences of the game. The ludic mechanics of these games are non-narrative.
3rd Degree	*3rd Degree* games have dominantly non-narrative ludic mechanics, yet they also employ small narrative mechanics within. These games carry narrative construction inside their ludic sequences. Commonly used narrative mechanics are; journal entries, voice and video recordings, background sound and events.
4th Degree	*4th Degree* games have ludic mechanics that aim to formulate the construction of an interactive narrative. Generally they are games from *adventure* genres. These games adhere to the *universe at pause* principle.

5th Degree	*5th Degree* games employ a *narrative engine* that helps players construct a narrative of their own, by arranging an order of exposure to the presented narrative hubs. Role playing games and massively multiplayer role playing games are main examples of *5th Degree* games.
6th Degree	*6th Degree* games are all other games that construct a narrative but does not fall into the previous categories. *6th Degree* games may present marginal interactivity schemes, autonomical variations or experimentations of other kind.

The author of this study argues that during its creation *Six Degrees* classification was sufficient to create an understanding of the dominant trends of narrative usage in video games. Yet the possibilities of development are not denied in the future. It is possible that a unique game that were hosted by the *6th Degree* cultivates a retentive trend, widespread enough to be called a degree of its own. Or once in a while, an examplary game may come that is so off the chart, that it creates new degrees by its legacy.

Even if such cases were arisen, they would still not invalidate the *Six Degrees* in several aspects. On the one hand, the classifications, distinctions and the examples of the majority of existing degrees would still endure. On the other hand a need for a classification of the narrative usage in video games would still be there. The future looks bright!

Six Degrees classification may be utilized in various fields. It is possible that it expands the elbowroom in the video game studies both for narrativists and ludologists. For narrativists it brings many different usage of narrative (again the term narrative is used loosely here, to represent the many forms of narrative that are used video games) into the field of vision. It abstracts narrative from its contextual core and focuses on its ludic

construction forms. For ludologists it moldes narrative into ludic puzzle pieces that could be discussed within the discourse of game mechanics.

It is also a wish that this classification may be of a use to the industry and the press of video gaming, in understanding and talking about games – as well as help the process of production.

It should be noted that this study was not interested in discovering or defining the idealistic balance of each degree or the correct usage of narrative pieces inside the degree (an example would be the defining of correct usage of cut-scenes or their ideal frequency inside *2nd Degree*). Neither it meant to discuss the effects of each degree on the video game player on the basis for engagement and enjoyment. Further studies elaborating the balancing and engagement in each degree could result in guiding comprehension for academia, game producers and players for production of hopefully better games and more insightful reading of video game texts.

3.3. Referential Degree Comparisons

As a final word, provided here are some referential comparisons that summarizes the content of the degrees and the distinctions among them.

Table 2. Comparison of Six Degrees in Narrative Usage

	Comparison of Six Degrees in Narrative Usage
Degree 0	Degree 0 games do not employ or construct any narrative, narrative space or narrative elements. The ludic mechanics of these games are non-narrative.
1st Degree	1st Degree games employ narrative elements such as heros, villains and narrative tropes to create narrative spaces (or diegesis). These games might also employ crude cut-scenes for the beginning and the ending of the

	game. The ludic mechanics of these games are non-narrative.
2nd Degree	2nd Degree games construct narratives with out-of-game devices such as text, graphic or video cut-scenes oscillating with the levels or otherwise action sequences of the game. The ludic mechanics of these games are non-narrative.
3rd Degree	3rd Degree games have dominantly non-narrative ludic mechanics, yet they also employ small narrative mechanics within. These games carry narrative construction inside their ludic sequences. Commonly used narrative mechanics are; journal entries, voice and video recordings, background sound and events.
4th Degree	4th Degree games have ludic mechanics that aim to formulate the construction of an interactive narrative. Generally they are games from *adventure* genres. These games adhere to the *universe at pause* principle.
5th Degree	5th Degree games employ a *narrative engine* that helps players construct a narrative of their own, by arranging an order of exposure to the presented narrative hubs. Role playing games and massively multiplayer role playing games are main examples of 5th Degree games.
6th Degree	6th Degree games are all other games that construct a narrative but does not fall into the previous categories. 6th Degree games may present marginal interactivity schemes, autonomical variations or experimentations of other kind.

Table 3. A Non-Restrictive Genre Study for Six Degrees

	A Non-Restrictive Genre Study for Six Degrees The dominant genres of the games that fall in each category could be illustrated (but not restricted to) as below.
Degree 0	Fighting, Platform, Shooter, Simulation, Strategy, Sports, Puzzle
1st Degree	Fighting, Platform, Shooter, Simulation, Strategy, Sports, Puzzle
2nd Degree	Fighting, Platform, Shooter, Action-Adventure, Simulation, Strategy, Sports, Puzzle
3rd Degree	Platform, Action-Adventure, Simulation, Strategy
4th Degree	Adventure, Role Playing
5th Degree	Role Playing
6th Degree	All

Table 4. Comparison of Six Degrees in Narrative Interactivity

	Comparison of Six Degrees in Narrative Interactivity
Degree 0	-
1st Degree	1st Degree games employ narrative spaces but do not construct narratives thus they do not offer narrative interactivity.

2nd Degree	2nd Degree games employ non-interactive out-of-game narrative devices, thus they do not offer narrative interactivity.
3rd Degree	3rd Degree games construct narrative inside the ludic action sequences of the game, thus they offer different levels of narrative interactivity.
4th Degree	4th Degree games create ludic mechanics to construct interactive narratives, thus offering high levels of narrative interactivity.
5th Degree	5th Degree games offer non-sequential narratives within interactive environments, offering high levels of narrative interactivity.
6th Degree	6th Degree games vary on the narrative interactivity they offer.

Table 5. Comparison of Six Degrees in Narrative Autonomy

	Comparison of Six Degrees in Narrative Autonomy
Degree 0	-
1st Degree	1st Degree games do not offer autonomy based on narrative choices.
2nd Degree	2nd Degree games do not offer autonomy based on narrative choices.
3rd Degree	3rd Degree games may offer narrative autonomy based on the narrative mechanics they have embedded within

	their ludic sequences. These may include alternate endings and alternate paths.
4th Degree	4th Degree games may offer narrative autonomy based on the ludic mechanics they offer for narrative construction. These may include alternate endings and alternate paths.
5th Degree	5th Degree games offer a strong narrative autonomy since their mechanics allow non-sequential narrative construction.
6th Degree	6th Degree games vary on the narrative autonomy they offer.

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APPENDIX A – TABLES FOR ANALYSIS OF SALES OF VIDEO GAMES BETWEEN 2005-2013 ACCORDING TO SIX DEGREES

Table 6. Global Top-Selling (in Retail) 50 Titles of 2005 and their degree analysis per game[51]

Global Top-Selling (in Retail) 50 Titles of 2005 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Nintendogs (DS)	1st
2	Mario Kart (DS)	1st
3	Grand Theft Auto: Liberty City Stories (PSP)	5th
4	Super Mario 64 (DS)	2nd
5	Animal Crossing: Wild World (DS)	5th
6	Brain Age: Train Your Brain in Minutes a Day (DS)	1st
7	WarioWare Touched! (DS)	1st
8	Big Brain Academy (DS)	1st
9	Ridge Racer (PSP)	0
10	Hot Shots Golf: Open Tee (PSP)	0
11	Tamagotchi Connection: Corner Shop (DS)	3rd
12	Need for Speed Underground Rivals (PSP)	0
13	Midnight Club 3: DUB Edition (PSP)	0
14	Untold Legends: Brotherhood of the Blade (PSP)	5th
15	World Tour Soccer (PSP)	0
16	WipEout Pure (PSP)	0
17	Metal Gear Ac!d (PSP)	3rd
18	Call of Duty 2 (X360)	3rd
19	Kirby: Canvas Curse (DS)	1st

[51] Retrieved from http://www.vgchartz.com/yearly/2005/Global/

20	Lumines: Puzzle Fusion (PSP)	0
21	Madden NFL 06 (PSP)	0
22	Tony Hawk's Underground 2 Remix (PSP)	0
23	Jump Super Stars (DS)	1st
24	Mario & Luigi: Partners in Time (DS)	3rd
25	Coded Arms (PSP)	1st
26	Pokemon Dash (DS)	1st
27	Twisted Metal: Head On (PSP)	0
28	Brain Age 2: More Training in Minutes a Day (DS)	1st
29	SOCOM: U.S. Navy SEALs Fireteam Bravo (PSP)	2nd
30	Virtua Tennis: World Tour (PSP)	0
31	World of Warcraft (PC)	5th
32	Spider-Man 2 (PSP)	2nd
33	Ape Escape: On the Loose (PSP)	2nd
34	Perfect Dark Zero (X360)	3rd
35	Asphalt: Urban GT (DS)	0
36	Clubhouse Games (DS)	0
37	Madden NFL 06 (X360)	0
38	Star Wars Battlefront II (PSP)	3rd
39	Dynasty Warriors (PSP)	2nd
40	Sonic Rush (DS)	1st
41	MediEvil: Resurrection (PSP)	3rd
42	Monster Hunter Freedom (PSP)	5th
43	Archer Maclean's Mercury (PSP)	0
44	Need for Speed: Most Wanted 5-1-0 (PSP)	0
45	Yoshi Touch & Go (DS)	1st
46	Dragon Ball Z: Supersonic Warriors 2 (DS)	2nd

47	Pokemon Trozei! (DS)	1st
48	ATV Offroad Fury: Blazin' Trails (PSP)	0
49	Need for Speed: Most Wanted (X360)	0
50	Castlevania: Dawn of Sorrow (DS)	3rd

Table 7. Global Top-Selling (in Retail) 50 Titles of 2005 distributed over degrees

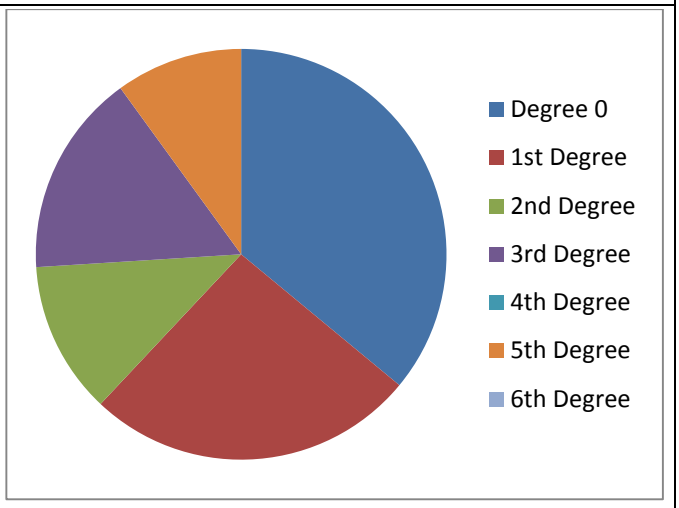
Global Top-Selling (in Retail) 50 Titles of 2005 distributed over degrees			
Degree	**# of Games**	**%**	
Degree 0	**18**	**36**	
1st Degree	**13**	**26**	
2nd Degree	**6**	**12**	
3rd Degree	**8**	**16**	
4th Degree	**0**	**0**	
5th Degree	**5**	**10**	
6th Degree	**0**	**0**	

Table 8. Global Top-Selling (in Retail) 50 Titles of 2006 and their degree analysis per game[52]

Global Top-Selling (in Retail) 50 Titles of 2006 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**

[52] Retrieved from http://www.vgchartz.com/yearly/2006/Global/

1	New Super Mario Bros. (DS)	1st
2	Nintendogs (DS)	1st
3	Brain Age: Train Your Brain in Minutes a Day (DS)	1st
4	Animal Crossing: Wild World (DS)	5th
5	Pokemon Diamond / Pearl Version (DS)	5th
6	Brain Age 2: More Training in Minutes a Day (DS)	1st
7	Mario Kart DS (DS)	1st
8	Gears of War (X360)	3rd
9	Wii Sports (Wii)	1st
10	Big Brain Academy (DS)	1st
11	The Legend of Zelda: Twilight Princess (Wii)	4th
12	English Training (DS)	0
13	Grand Theft Auto: Liberty City Stories (PSP)	5th
14	Madden NFL 07 (X360)	0
15	Tetris DS (DS)	0
16	Final Fantasy III (DS)	5th
17	The Elder Scrolls IV: Oblivion (X360)	5th
18	Call of Duty 3 (X360)	3rd
19	Pokemon Ranger (DS)	5th
20	Super Mario 64 (DS)	2nd
21	Tom Clancy's Ghost Recon Advanced (X360)	3rd
22	Saints Row (X360)	5th
23	Dead Rising (X360)	5th
24	Kirby Squeak Squad (DS)	1st
25	Kanshuu Nippon Joushikiryoku Kentei Kyoukai (DS)	0
26	Mario Hoops 3 on 3 (DS)	1st

27	Sonic Rush (DS)	1st
28	Pokemon Mystery Dungeon: Blue (DS)	5th
29	Grand Theft Auto: Vice City Stories (PSP)	5th
30	Oshare Majo Love and Berry: DS Collection (DS)	1st
31	Daxter (PSP)	3rd
32	Midnight Club 3: DUB Edition (PSP)	0
33	Tamagotchi Collection: Corner Shop 2 (DS)	3rd
34	Wii Play (Wii)	1st
35	Monster Hunter Freedom (PSP)	5th
36	Tom Clancy's Rainbow Six: Vegas (X360)	3rd
37	Personal Trainer: Cooking (DS)	0
38	Need for Speed Carbon (X360)	0
39	FIFA 07 Soccer (PSP)	0
40	Call of Duty 2 (X360)	3rd
41	The Sims 2: Pets (DS)	5th
42	Dragon Quest Monsters: Joker (DS)	5th
43	Mario & Luigi: Partners in Time (DS)	3rd
44	Tekken: Dark Resurrection (PSP)	2nd
45	Fight Night Round 3 (X360)	0
46	NCAA Football 07 (X360)	0
47	Yoshi's Island DS (DS)	1st
48	Metroid Prime Hunters (DS)	3rd
49	Clubhouse Games (DS)	0
50	Jump Ultimate Stars (DS)	1st

Table 9. Global Top-Selling (in Retail) 50 Titles of 2006 distributed over degrees

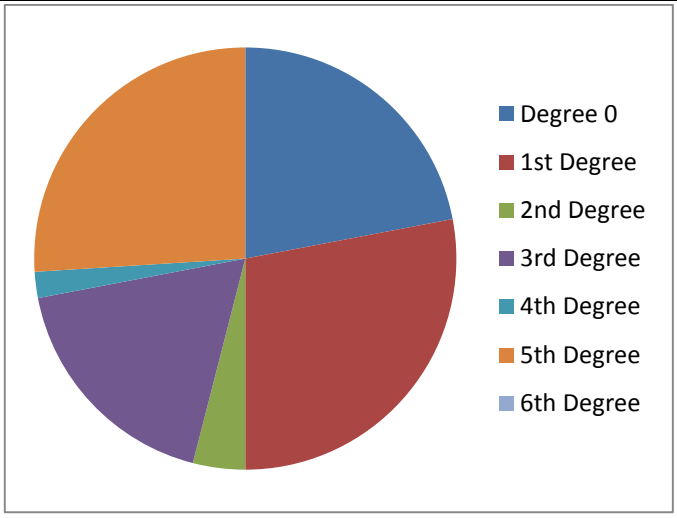
Global Top-Selling (in Retail) 50 Titles of 2006 distributed over degrees			
Degree	**# of Games**	**%**	
Degree 0	**11**	**22**	
1st Degree	**14**	**28**	
2nd Degree	**2**	**4**	
3rd Degree	**9**	**18**	
4th Degree	**1**	**2**	
5th Degree	**13**	**26**	
6th Degree	**0**	**0**	

Table 10. Global Top-Selling (in Retail) 50 Titles of 2007 and their degree analysis per game[53]

Global Top-Selling (in Retail) 50 Titles of 2007 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Wii Sports (Wii)	1st
2	Pokemon Diamond / Pearl Version (DS)	5th
3	Wii Play (Wii)	1st
4	Halo 3 (X360)	3rd
5	Nintendogs (DS)	1st

[53] Retrieved from http://www.vgchartz.com/yearly/2007/Global/

6	Brain Age 2: More Training in Minutes a Day (DS)	1st
7	Brain Age: Train Your Brain in Minutes a Day (DS)	1st
8	New Super Mario Bros. (DS)	1st
9	Super Mario Galaxy (Wii)	3rd
10	Mario Party 8 (Wii)	1st
11	Call of Duty 4: Modern Warfare (X360)	3rd
12	The Legend of Zelda: Phantom Hourglass (DS)	4th
13	Mario Kart DS (DS)	1st
14	Forza Motorsport 2 (X360)	0
15	Assassin's Creed (X360)	3rd
16	Mario & Sonic at the Olympic Games (Wii)	1st
17	MotorStorm (PS3)	0
18	Animal Crossing: Wild World (DS)	5th
19	The Legend of Zelda: Twilight Princess (Wii)	4th
20	Mario Party DS (DS)	1st
21	Cooking Mama (DS)	1st
22	Super Paper Mario (Wii)	4th
23	Resistance: Fall of Man (PS3)	3rd
24	Monster Hunter Freedom 2 (PSP)	5th
25	Madden NFL 08 (X360)	0
26	Call of Duty 4: Modern Warfare (PS3)	3rd
27	Guitar Hero III: Legends of Rock (X360)	1st
28	Marvel: Ultimate Alliance (X360)	2nd
29	Assassin's Creed (PS3)	3rd
30	Big Brain Academy (DS)	1st
31	Flash Focus (DS)	0
32	WarioWare: Smooth Moves (Wii)	1st

33	Gears of War (X360)	3rd
34	Big Brain Academy: Wii Degree (Wii)	1st
35	MySims (DS)	5th
36	Yoshi's Island DS (DS)	1st
37	Guitar Hero II (X360)	1st
38	Grand Theft Auto: Vice Story Stories (PSP)	5th
39	BioShock (X360)	3rd
40	Crackdown (X360)	3rd
41	Guitar Hero III: Legends of Rock (Wii)	1st
42	Pokemon Mystery Dungeon: Time /Darkness (DS)	5th
43	Daxter (PSP)	3rd
44	Grand Theft Auto: Liberty City Stories (PSP)	5th
45	Mario Strikers Charged (Wii)	1st
46	Super Mario 64 (DS)	2nd
47	Mass Effect (X360)	6th
48	Sonic and the Secret Rings (Wii)	2nd
49	Dragon Quest Monsters: Joker (DS)	5th
50	Metroid Prime 3: Corruption	2nd

Table 11. Global Top-Selling (in Retail) 50 Titles of 2007 distributed over degrees

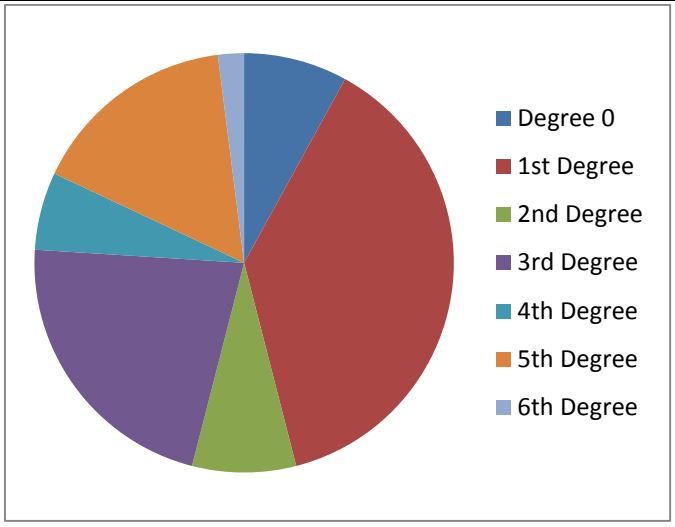
Global Top-Selling (in Retail) 50 Titles of 2007 distributed over degrees			
Degree	**# of Games**	**%**	
Degree 0	**4**	**8**	
1st Degree	**19**	**38**	
2nd Degree	**4**	**8**	
3rd Degree	**11**	**22**	
4th Degree	**3**	**6**	
5th Degree	**8**	**16**	
6th Degree	**1**	**2**	

Table 12. Global Top-Selling (in Retail) 50 Titles of 2008 and their degree analysis per game[54]

Global Top-Selling (in Retail) 50 Titles of 2008 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Wii Sports (Wii)	1st
2	Mario Kart Wii (Wii)	1st
3	Wii Fit (Wii)	1st
4	Wii Play (Wii)	1st
5	Super Smash Bros. Brawl (Wii)	1st

[54] Retrieved from http://www.vgchartz.com/yearly/2008/Global/

6	Grand Theft Auto IV (X360)	5th
7	Grand Theft Auto IV (PS3)	5th
8	Brain Age: Train Your Brain in Minutes a Day (DS)	1st
9	New Super Mario Bros. (DS)	1st
10	Nintendogs (DS)	1st
11	Mario Kart DS (DS)	1st
12	Call of Duty: World at War (X360)	3rd
13	Gears of War 2 (X360)	3rd
14	Brain Age 2: More Training in Minutes a Day (DS)	1st
15	Metal Gear Solid 4: Guns of the Patriots (PS3)	6th
16	Mario & Sonic at the Olympic Games (Wii)	2nd
17	Mario & Sonic at the Olympic Games (DS)	2nd
18	Pokemon Diamond / Pearl Version (DS)	5th
19	Mario Party DS (DS)	1st
20	Super Mario Galaxy (Wii)	3rd
21	Call of Duty 4: Modern Warfare (X360)	3rd
22	Pokemon Mystery Dungeon: Time / Darkness (DS)	5th
23	Monster Hunter Freedom Unite (PSP)	5th
24	LEGO Indiana Jones: The Original Adv. (X360)	2nd
25	Link's Crossbow Training (Wii)	2nd
26	Guitar Hero III: Legends of Rock (X360)	1st
27	Call of Duty: World at War (PS3)	3rd
28	Gran Tourismo 5 Prologue (PS3)	0
29	Guitar Hero: On Tour (DS)	1st
30	Animal Crossing: City Folk (Wii)	5th
31	Fable II (X360)	6th
32	Kung Fu Panda (X360)	2nd

33	Pokemon Platinum Version (DS)	5th
34	Call of Duty 4: Modern Warfare (PS3)	3rd
35	Mario Party 8 (Wii)	1st
36	Guitar Hero: World Tour (Wii)	1st
37	Wii Music (Wii)	1st
38	Madden NFL 09 (X360)	0
39	Halo 3 (X360)	3rd
40	Carnival Games (Wii)	1st
41	Cooking Mama 2 (DS)	1st
42	Guitar Hero III: Legends of Rock (X360)	1st
43	God of War: Chains of Olympus (PSP)	3rd
44	Kirby Super Star Ultra (DS)	2nd
45	Fallout 3 (X360)	6th
46	Imagine: Babyz (DS)	1st
47	LittleBigPlanet (PS3)	6th
48	Tom Clancy's Rainbow Six: Vegas 2 (X360)	3rd
49	Imagine: Fashion Designer (DS)	1st
50	Game Party (Wii)	0

Table 13. Global Top-Selling (in Retail) 50 Titles of 2008 distributed over degrees

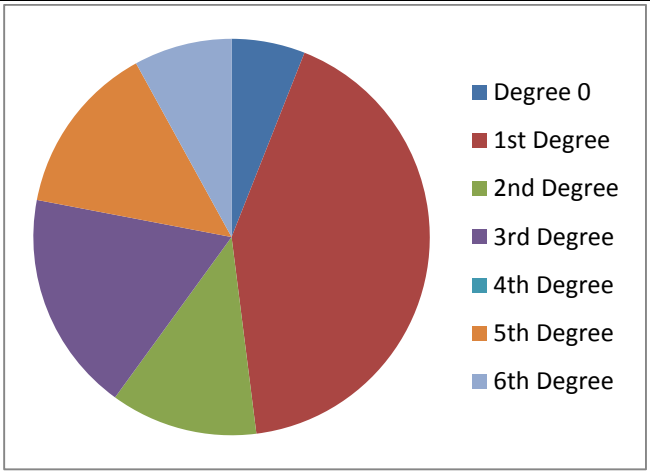
Global Top-Selling (in Retail) 50 Titles of 2008 distributed over degrees			
Degree	**# of Games**	**%**	
Degree 0	**3**	**6**	
1st Degree	**21**	**42**	
2nd Degree	**6**	**12**	
3rd Degree	**9**	**18**	
4th Degree	**0**	**0**	
5th Degree	**7**	**14**	
6th Degree	**4**	**8**	

Table 14. Global Top-Selling (in Retail) 50 Titles of 2009 and their degree analysis per game[55]

Global Top-Selling (in Retail) 50 Titles of 2009 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Wii Sports (Wii)	1st
2	Wii Sports Resort (Wii)	1st
3	New Super Mario Bros Wii (Wii)	1st
4	Wii Fit (Wii)	1st
5	Call of Duty: Modern Warfare 2 (X360)	3rd

[55] Retrieved from http://www.vgchartz.com/yearly/2009/Global/

6	Wii Fit Plus (Wii)	1st
7	Mario Kart Wii (Wii)	1st
8	Call of Duty: Modern Warfare 2 (PS3)	3rd
9	Wii Play (Wii)	1st
10	Halo 3: ODST (X360)	3rd
11	Pokemon Platinum Version (DS)	5th
12	Dragon Quest IX: Sentinels of the Starry Skies (DS)	5th
13	Mario Kart DS (DS)	1st
14	New Super Mario Bros. (DS)	1st
15	Pokemon Heart Gold/Soul Silver Version (DS)	5th
16	Assassin's Creed II (X360)	3rd
17	Resident Evil 5 (PS3)	3rd
18	Assassin's Creed II (PS3)	3rd
19	Uncharted 2: Among Thieves (PS3)	3rd
20	Mario & Sonic at the Olympic Winter Games (Wii)	2nd
21	FIFA Soccer 10 (PS3)	0
22	EA Sports Active (Wii)	1st
23	Professor Layton and the Curious Village (DS)	4th
24	Tomodachi Collection (DS)	3rd
25	Resident Evil 5 (X360)	3rd
26	Brain Age: Train Your Brain in Minutes a Day (DS)	1st
27	Left 4 Dead 2 (X360)	6th
28	Killzone 2 (PS3)	3rd
29	Madden NFL 10 (X360)	0
30	Mario & Luigi: Bowser's Inside Story (DS)	3rd
31	Mario & Sonic at the Olympic Winter Games (DS)	2nd

32	Forza Motorsport 3 (X360)	0
33	FIFA Soccer 10 (X360)	0
34	Nintendogs (DS)	1st
35	Professor Layton and the Diabolical Box (DS)	4th
36	Need for Speed: Shift (PS3)	0
37	Madden NFL 10 (PS3)	0
38	Final Fantasy XIII (PS3)	5th
39	UFC 2009 Undisputed (X360)	0
40	Call of Duty: World at War (X360)	3rd
41	Street Fighter IV (PS3)	2nd
42	Pro Evolution Soccer 2010 (PS3)	0
43	LEGO Batman: The Videogame (X360)	3rd
44	Halo 3 (X360)	3rd
45	Halo Wars (X360)	2nd
46	Batman: Arkham Asylum (PS3)	3rd
47	Monster Hunter Freedom Unite (PSP)	5th
48	The Legend of Zelda: Spirit Tracks (DS)	4th
49	Club Penguin: Elite Penguin Force (DS)	5th
50	Brain Age 2: More Training in Minutes a Day (DS)	1st

Table 15. Global Top-Selling (in Retail) 50 Titles of 2009 distributed over degrees

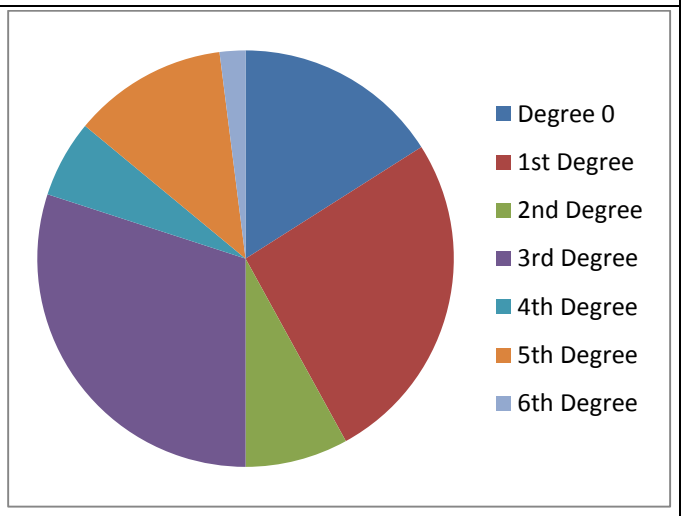
Global Top-Selling (in Retail) 50 Titles of 2009 distributed over degrees			
Degree	**# of Games**	**%**	
Degree 0	**8**	**16**	
1st Degree	**13**	**26**	
2nd Degree	**4**	**8**	
3rd Degree	**15**	**30**	
4th Degree	**3**	**6**	
5th Degree	**6**	**12**	
6th Degree	**1**	**2**	

Table 16. Global Top-Selling (in Retail) 50 Titles of 2010 and their degree analysis per game[56]

Global Top-Selling (in Retail) 50 Titles of 2010 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Wii Sports (Wii)	1st
2	Wii Sports Resort (Wii)	1st
3	New Super Mario Bros Wii (Wii)	1st

[56] Retrieved from http://www.vgchartz.com/yearly/2010/Global/

4	Call of Duty: Black Ops (X360)	3rd
5	Call of Duty: Black Ops (PS3)	3rd
6	Wii Fit Plus (Wii)	1st
7	Kinect Adventures! (X360)	2nd
8	Halo: Reach (X360)	3rd
9	Pokemon Heart Gold / Soul Silver Version (DS)	5th
10	Super Mario Galaxy 2 (Wii)	2nd
11	Gran Tourismo 5 (PS3)	0
12	Mario Kart Wii (Wii)	1st
13	Pokemon Black / White Version (DS)	5th
14	Just Dance 2 (Wii)	0
15	Wii Party (Wii)	1st
16	Just Dance (Wii)	0
17	New Super Mario Bros (DS)	1st
18	FIFA Soccer 11 (PS3)	0
19	Red Dead Redemption (X360)	5th
20	Monster Hunter Freedom 3 (PSP)	5th
21	Mario Kart DS (DS)	1st
22	Donkey Kong Country Returns (Wii)	2nd
23	God of War III (PS3)	3rd
24	Red Dead Redemption (PS3)	5th
25	Call of Duty: Modern Warfare 2 (X360)	3rd
26	Assassin's Creed: Brotherhood (X360)	3rd
27	Call of Duty: Modern Warfare 2 (PS3)	3rd
28	Assassin's Creed: Brotherhood (PS3)	3rd
29	Fable III (X360)	6th
30	Battlefield: Bad Company 2 (X360)	3rd

31	FIFA Soccer 11 (X360)	0
32	StarCraft II: Wings of Liberty (PC)	2nd
33	Final Fantasy XIII (PS3)	5th
34	Forza Motorsport 3 (X360)	0
35	World of Warcraft: Cataclysm (PC)	5th
36	Kinect Sports (X360)	0
37	Fallout: New Vegas (X360)	5th
38	Madden NFL 11 (X360)	0
39	Mass Effect 2 (X360)	6th
40	Battlefield: Bad Company 2 (PS3)	3rd
41	Super Mario All-Stars: Limited Edition (Wii)	1st
42	Sports Champions (PS3)	0
43	Medal of Honor (X360)	3rd
44	Medal of Honor (PS3)	3rd
45	Pro Evolution Soccer 2011 (PS3)	0
46	Madden NFL 11 (PS3)	0
47	Michael Jackson: The Experience (Wii)	1st
48	Uncharted 2: Among Thieves (PS3)	3rd
49	Professor Layton and the Unwound Future (DS)	4th
50	Heavy Rain (PS3)	6th

Table 17. Global Top-Selling (in Retail) 50 Titles of 2010 distributed over degrees

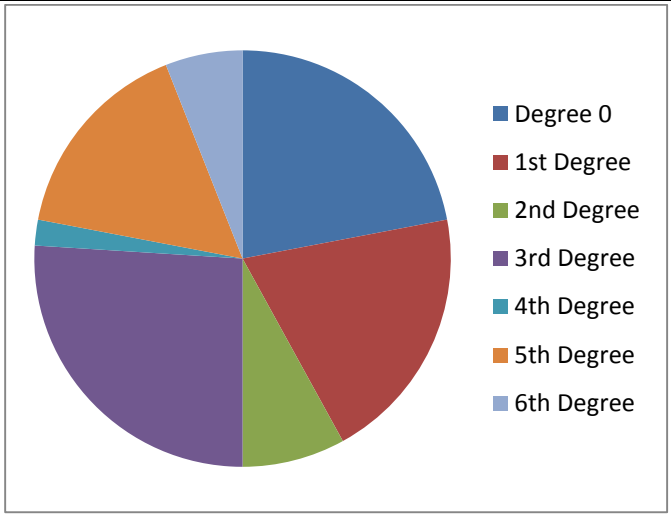
Global Top-Selling (in Retail) 50 Titles of 2010 distributed over degrees			
Degree	**# of Games**	**%**	
Degree 0	**11**	**22**	
1st Degree	**10**	**20**	
2nd Degree	**4**	**8**	
3rd Degree	**13**	**26**	
4th Degree	**1**	**2**	
5th Degree	**8**	**16**	
6th Degree	**3**	**6**	

Table 18. Global Top-Selling (in Retail) 50 Titles of 2011 and their degree analysis per game[57]

Global Top-Selling (in Retail) 50 Titles of 2011 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Call of Duty: Modern Warfare 3 (X360)	3rd
2	Call of Duty: Modern Warfare 3 (PS3)	3rd
3	Pokemon Black / White Version (DS)	5th
4	Kinect Adventures! (X360)	2nd
5	Just Dance 3 (Wii)	0

[57] Retrieved from http://www.vgchartz.com/yearly/2011/Global/

6	Mario Kart Wii (Wii)	1st
7	Wii Sports Resort (Wii)	1st
8	Wii Sports (Wii)	1st
9	Battlefield 3 (X360)	3rd
10	Gears of War 3 (X360)	3rd
11	The Elder Scrolls V: Skyrim (X360)	5th
12	FIFA Soccer 12 (PS3)	0
13	Super Mario 3D Land (3DS)	1st
14	Battlefield 3 (PS3)	3rd
15	Just Dance 2 (Wii)	0
16	Mario Kart 7 (3DS)	1st
17	Zumba Fitness (Wii)	0
18	New Super Mario Bros Wii (Wii)	1st
19	Uncharted 3: Drake's Deception (PS3)	3rd
20	FIFA Soccer 12 (X360)	0
21	Assassin's Creed: Revelations (X360)	3rd
22	Wii Fit Plus (Wii)	1st
23	The Elder Scrolls V: Skyrim (PS3)	5th
24	The Legend of Zelda: Skyward Sword (Wii)	4th
25	Assassin's Creed: Revelations (PS3)	3rd
26	Batman: Arkham City (PS3)	3rd
27	Call of Duty: Black Ops (X360)	3rd
28	Batman: Arkham City (X360)	3rd
29	Call of Duty: Black Ops (PS3)	3rd
30	Wii Party (Wii)	1st
31	LittleBigPlanet 2 (PS3)	6th
32	The Legend of Zelda: Ocarina of Time 3D (3DS)	4th

33	New Super Mario Bros. (DS)	1st
34	L.A. Noire (PS3)	6th
35	Madden NFL 12 (X360)	0
36	Mario & Sonic at the London 2012 Olmypic G. (Wii)	2nd
37	Killzone 3 (PS3)	3rd
38	L.A. Noire (X360)	6th
39	Michael Jackson: The Experience (Wii)	1st
40	Nintendogs + cats (3DS)	1st
41	Fable III (X360)	6th
42	Forza Motorsport 4 (X360)	0
43	Gran Tourismo 5 (PS3)	0
44	Madden NFL 12 (PS3)	0
45	The Elder Scrolls V: Skyrim (PC)	5th
46	Saints Row: The Third (X360)	5th
47	Star Wars: The Old Republic (PC)	5th
48	Donkey Kong Country Returns (Wii)	2nd
49	Pro Evolution Soccer 2012 (PS3)	0
50	Kinect Sports (X360)	0

Table 19. Global Top-Selling (in Retail) 50 Titles of 2011 distributed over degrees

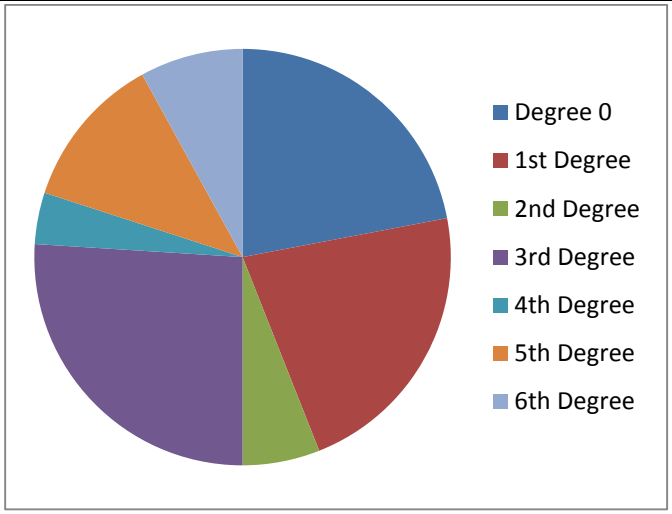
Global Top-Selling (in Retail) 50 Titles of 2011 distributed over degrees			
Degree	**# of Games**	**%**	
Degree 0	**11**	**22**	
1st Degree	**11**	**22**	
2nd Degree	**3**	**6**	
3rd Degree	**13**	**26**	
4th Degree	**2**	**4**	
5th Degree	**6**	**12**	
6th Degree	**4**	**8**	

Table 20. Global Top-Selling (in Retail) 50 Titles of 2012 and their degree analysis per game[58]

Global Top-Selling (in Retail) 50 Titles of 2012 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Call of Duty: Black Ops II (X360)	3rd
2	Call of Duty: Black Ops II (PS3)	3rd
3	Halo 4 (X360)	3rd
4	Pokemon Black / White Version 2 (DS)	5th
5	FIFA Soccer 13 (PS3)	0

[58] Retrieved from http://www.vgchartz.com/yearly/2012/Global/

6	New Super Mario Bros 2 (3DS)	1st
7	Just Dance 4 (Wii)	0
8	Kinect Adventures! (X360)	2nd
9	Assassin's Creed III (PS3)	3rd
10	FIFA Soccer 13 (X360)	0
11	Assassin's Creed III (X360)	3rd
12	Mario Kart 7 (3DS)	1st
13	Super Mario 3D Land (3DS)	1st
14	Diablo III (PC)	6th
15	Mass Effect 3 (X360)	6th
16	Wii Sports (Wii)	1st
17	Just Dance 3 (Wii)	0
18	Mario Party 9 (Wii)	1st
19	Madden NFL 13 (X360)	0
20	Resident Evil 6 (PS3)	3rd
21	Call of Duty: Modern Warfare 3 (PS3)	3rd
22	Call of Duty: Modern Warfare 3 (X360)	3rd
23	Borderlands 2 (X360)	5th
24	Uncharted 3: Drake's Deception (PS3)	3rd
25	Mario Kart Wii (Wii)	1st
26	Wii Sports Resort (Wii)	1st
27	Animal Crossing: New Leaf (3DS)	5th
28	The Elder Scrolls V: Skyrim (X360)	5th
29	Forza Motorsport 4 (X360)	0
30	Madden NFL 13 (PS3)	0
31	NBA 2K13 (360)	0
32	Zumba Fitness (Wii)	0

33	New Super Mario Bros Wii (Wii)	1st
34	Zumba Fitness 2 (Wii)	0
35	Skylanders Giants (Wii)	3rd
36	Battlefield 3 (PS3)	3rd
37	Kinect Sports (X360)	0
38	Guild Wars 2 (PC)	5th
39	Gran Turismo 5 (PS3)	0
40	Kinect: Disneyland Adventures (X360)	1st
41	Far Cry 3 (X360)	3rd
42	Final Fantasy XIII-2 (PS3)	5th
43	The Elder Scrolls V: Skyrim (PS3)	5th
44	Resident Evil 6 (X360)	3rd
45	NBA 2K13 (PS3)	0
46	Battlefield 3 (X360)	3rd
47	Need for Speed: Most Wanted (PS3)	0
48	Nintendo Land (WiiU)	1st
49	FIFA Soccer 12 (PS3)	0
50	Batman: Arkham City (PS3)	3rd

Table 21. Global Top-Selling (in Retail) 50 Titles of 2012 distributed over degrees

Global Top-Selling (in Retail) 50 Titles of 2012 distributed over degrees		
Degree	**# of Games**	**%**
Degree 0	**15**	**30**
1st Degree	**10**	**20**
2nd Degree	**1**	**2**
3rd Degree	**15**	**30**
4th Degree	**0**	**0**
5th Degree	**7**	**14**
6th Degree	**2**	**4**

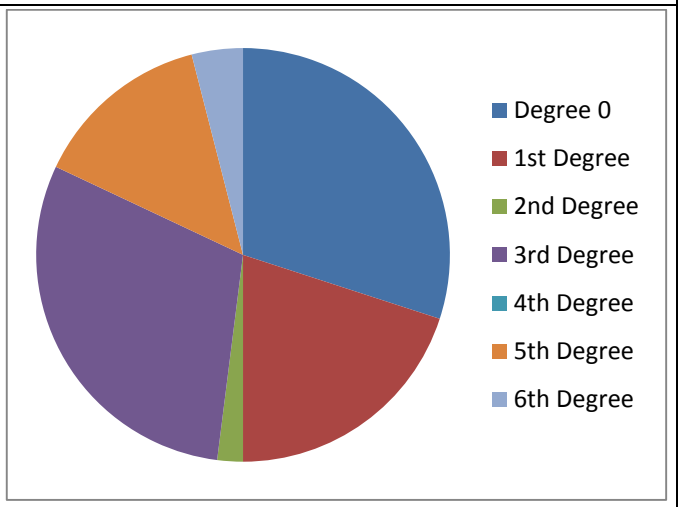


Table 22. Global Top-Selling (in Retail) 50 Titles of 2013 and their degree analysis per game[59]

Global Top-Selling (in Retail) 50 Titles of 2013 and their degree analysis per game		
Position	**Game (Platform)**	**Degree**
1	Luigi's Mansion: Dark Moon (3DS)	3rd
2	Call of Duty: Black Ops II (X360)	3rd
3	Call of Duty: Black Ops II (PS3)	3rd

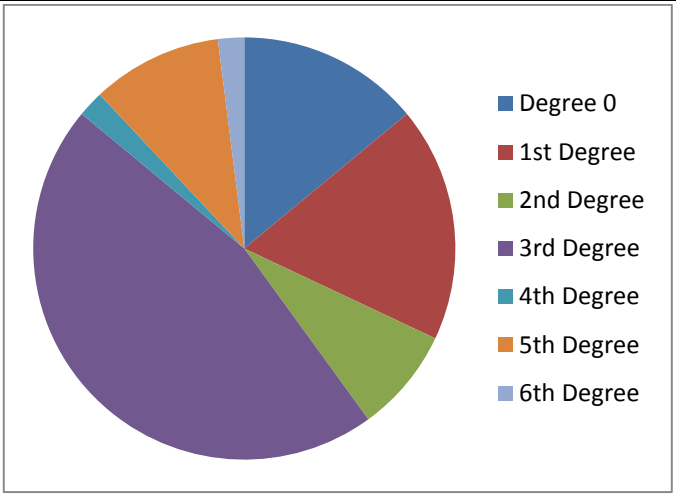
[59] Retrieved from http://www.vgchartz.com/yearly/2013/Global/ containing data up to 20th April 2013

4	Dragon Quest VII (3DS)	5th
5	Animal Crossing: New Leaf (3DS)	5th
6	Gears of War: Judgement (X360)	3rd
7	BioShock Infinite (X360)	3rd
8	God of War: Ascension (PS3)	3rd
9	Tomb Raider (PS3)	3rd
10	Tomb Raider (X360)	3rd
11	Metal Gear Rising: Revengeance (PS3)	3rd
12	New Super Mario Bros. 2 (3DS)	1st
13	Halo 4 (X360)	3rd
14	StarCraft II: Heart of Swarm (PC)	2nd
15	Far Cry 3 (PS3)	3rd
16	FIFA Soccer 13 (PS3)	0
17	Far Cry 3 (X360)	3rd
18	Just Dance 4 (Wii)	0
19	SimCity (PC)	6th
20	Dead Space 3 (X360)	3rd
21	Bioshock Infinite (PS3)	3rd
22	Crysis 3 (X360)	3rd
23	Ninokuni: Shiroki Seihai no Joou (PS3)	4th
24	FIFA Soccer 13 (X360)	0
25	NBA 2K13 (X360)	0
26	Mario Kart 7 (3DS)	1st
27	Pokemon Black / White Version 2 (DS)	5th
28	Dead Space 3 (PS3)	3rd
29	DmC: Devil May Cry (PS3)	3rd
30	Nintendo Land (WiiU)	1st

31	New Super Mario Bros U (WiiU)	1st
32	Assassin's Creed III (PS3)	3rd
33	Super Mario 3D Land (3DS)	1st
34	Need for Speed: Most Wanted (PS3)	0
35	Fire Emblem: Awakening (3DS)	5th
36	Tomodachi Collection: Shin Seikatsu (3DS)	3rd
37	Aliens: Colonial Marines (X360)	3rd
38	Assassin's Creed III (X360)	3rd
39	One Piece: Pirate Warriors 2 (PS3)	2nd
40	Crysis 3 (PS3)	3rd
41	Mario Kart Wii (Wii)	1st
42	NBA 2K13 (PS3)	0
43	Paper Mario: Sticker Star (3DS)	3rd
44	Kinect Adventures! (X360)	1st
45	Naruto Shippuden: Ultimate Ninja Storm 3 (PS3)	2nd
46	New Super Mario Bros Wii (Wii)	1st
47	Wii Sports (Wii)	1st
48	Monster Hunter Tri (3DS)	5th
49	MLB 13: The Show (PS3)	0
50	Dynasty Warriors 8 (PS3)	2nd

Table 23. Global Top-Selling (in Retail) 50 Titles of 2013 distributed over degrees

Global Top-Selling (in Retail) 50 Titles of 2013 distributed over degrees		
Degree	**# of Games**	**%**
Degree 0	**7**	**14**
1st Degree	**9**	**18**
2nd Degree	**4**	**8**
3rd Degree	**23**	**46**
4th Degree	**1**	**2**
5th Degree	**5**	**10**
6th Degree	**1**	**2**



APPENDIX B - GAMES CITED

4 Minutes and 33 Seconds of Uniqueness (2009) Klooni Games

Angry Birds (2011) Rovio Entertainment

Another World (1991) Delphine Software.

Alan Wake (2010) Microsoft Game Studios.

Baldur's Gate (1998) BioWare.

Bejeweled (2001) Popcap Games.

Bioshock Infinite (2013) 2K Games.

Blade Runner (1997) Westwood Studios.

Broken Sword: The Shadow of the Templars (1996) Revolution Software.

Bubble Bobble (1986) Taito.

Candy Crush Saga (2013) King.

Cathode Ray Tube (1947) Thomas T. Goldsmith Jr. and Estle Ray Mann.

Colossal Cave Adventure (1976) William Crowther and Don Woods.

Curse of the Azure Bonds (1989) Strategic Simulations Inc.

Dead Space (2008) Electronic Arts.

Donkey Kong (1981) Nintendo.

Dune II: Battle for Arakis (1992) Westwood Studios.

E.T. (1982) Atari.

Enter the Matrix (2003) Atari.

F-Zero X (1998) Nintendo.

Fallout 3 (2008) Bethesda Game Studios.

Fatal Frame 2: Crimson Butterfly (2003) Tecmo.

Fight Night (2004) EA Sports.

Final Fight (1990) Capcom.

Frankenstein (1992) Zeppelin Games.

Gardens of Time (2012) Playdom.

Gemini Rue (2011) Wadjet Eye Games.

God of War 2 (2007) Sony Computer Entertainment.

Gran Turismo 5 (2010) Sony Computer Entertainment.

Guild Wars 2 (2012) NCsoft.

Half-Life (1998) Valve Software.

Jewel Quest II (2007) iWin.

Joust (1982) Williams Electronics.

Lady Bug (1982) Coleco.

Machinarium (2009) Amanita Design.

Maniac Mansion (1987) LucasArts.

Mario Power Tennis (2009) Nintendo.

Metroid (1986) Nintendo.

Metroid: Other M (2010) Nintendo.

Monaco GP (1979) Sega.

Mortal Kombat (2011) Warner Bros.

Myst (1993) Cyan.

Mystery House (1980) Roberta and Ken Williams.

New Super Mario Bros Wii (2009) Nintendo.

Night Driver (1976) Atari.

Ninja Gaiden (1988) Tecmo.

Predator (1987) Activision.

Punch-Out!! (2009) Nintendo.

Tennis for Two (1958) William Higinbotham.

Tetris (1984) Alexey Pajitnov.

Tetris (1989) Nintendo.

The Elder Scrolls V: Skyrim (2011) Bethesda Game Studios.

The Secret of Monkey Island (1990) LucasArts.

Pac-Man (1980) Namco Midway.

Pac-Man (Atari 2600) (1982) Atari.

Pool of Radiance (1988) Strategic Simulations Inc.

Prince of Persia (1989) Brøderbund.

Prince of Persia 2: The Shadow and the Flame (1993) Brøderbund.

Silent Hill 2 (2001) Konami.

Starcraft (1998). Blizzard Entertainment.

Tomb Raider (2013). Square Enix.

Virtua Tennis 4 (2011) Sega.

Wizard of Wor (1981) Midway.

World of Warcraft (2004) Blizzard Entertainment.

Zork (1980) Infocom.