

**This is an electronic reprint of the original article.
This reprint *may differ* from the original in pagination and typographic detail.**

Author(s): Arjoranta, Jonne

Title: Narrative Tools for Games : Focalization, Granularity, and the Mode of Narration in Games

Year: 2017

Version:

Please cite the original version:

Arjoranta, J. (2017). Narrative Tools for Games : Focalization, Granularity, and the Mode of Narration in Games. *Games and Culture: A Journal of Interactive Media*, 12(7-8), 696-717. <https://doi.org/10.1177/1555412015596271>

All material supplied via JYX is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of the repository collections is not permitted, except that material may be duplicated by you for your research use or educational purposes in electronic or print form. You must obtain permission for any other use. Electronic or print copies may not be offered, whether for sale or otherwise to anyone who is not an authorised user.

Games and Culture

Narrative Tools for Games: Focalization, Granularity and the Mode of Narration in Games

Journal:	<i>Games and Culture</i>
Manuscript ID:	GAMES-14-0014.R3
Manuscript Type:	Original Manuscript
Keywords:	focalization, granularity, narrative, meaning-effect, mode of narration, perspective
Abstract:	This paper looks at three narratological concepts – focalization, granularity and the mode of narration – and explores how these concepts apply to games. It is shown how these concepts can be used as tools for creating meaning-effects, which are understood here as cognitive responses from the player. Focalization is shown to have a hybrid form in games. This paper also explores the different types of narrators and granularities in games, and how these three concepts can be used to create meaning-effects. This is done by discussing examples from several games, e.g. Assassin's Creed III, Skyrim, Fallout: New Vegas, and Civilization.

SCHOLARONE™
Manuscripts

Narrative Tools for Games

Focalization, Granularity and the Mode of Narration in Games

Abstract

This paper looks at three narratological concepts – focalization, granularity and the mode of narration – and explores how these concepts apply to games. It is shown how these concepts can be used as tools for creating meaning-effects, which are understood here as cognitive responses from the player. Focalization is shown to have a hybrid form in games. This paper also explores the different types of narrators and granularities in games, and how these three concepts can be used to create meaning-effects. This is done by discussing examples from several games, e.g. Assassin's Creed III, Skyrim, Fallout: New Vegas, and Civilization.

Keywords: focalization, granularity, narrative, meaning-effect, mode of narration, perspective

Introduction

Video games have advanced with great strides since their inception. Things like graphical fidelity and the level of simulation achievable in modern games are both awe-inspiring and evolving fast enough to make yesterday's games appear dated. Yet, the area where games with multi-million dollar budgets still seem to struggle the most appears to be the story. Telling good stories is not easy; telling them in games seems to be even harder. Hopefully, a better understanding of games and the stories in them will make that task easier. This paper provides tools of narratological theory for that task and shows how these tools can be applied to games.

The term 'video game' is here used as a general descriptor for games played on typically digital platforms like game consoles or personal computers. There are significant differences between platforms that are not considered here, but which may affect the way games are experienced. This is especially true with the rise of new types of play (e.g. casual, asynchronous) and new platforms (e.g. the smart phone). Discussing these differences would be outside the scope of this paper. For the same reason, this paper will not discuss non-digital games, even if the differences would arguably be even greater than between different digital platforms. While this article focuses on video games, it is not argued that these meaning-effects are limited to digital games. On the contrary, similar meaning-effects could be achieved in analog games.

Aarseth (2003) underlines the importance of the game scholar's personal experience of playing games. I have played most of the games discussed here, but not all of them. As Aarseth (2003) suggests, more emphasis is given to the examples I am more familiar with.

Game Narratology

To understand games using narratological concepts, one has to take special care in applying them. The narratological concepts used here were not created with games in mind and instead of games, narratological research has mostly been conducted on other media. However, using narratological theory to understand games has a long, if contested, tradition in the short history of game studies (e.g. Frasca, 2003; Simons, 2006).

The analysis in this article borrows heavily from the literary strand of narratological theory. This

1
2
3 foregrounds games as forms of storytelling, as opposed to discussing them as drama (Ryan,
4 2002). Other approaches building on, for example, cinema, theatre or role-play could also be
5 used, but would require a different analytical framework. This article uses the concepts of
6 focalization, granularity, mode of narration and meaning-effects, all borrowed from literary
7 studies.
8
9

10 Some researchers have expressed a worry of game studies being “colonized” by other fields with
11 their own interests, issues, and framings, and thereby translating games into terms that are ill-
12 equipped to handle them (e.g. Aarseth, 1997; 2001). However, it has been pointed out that
13 although classical narratological concepts are not perhaps applicable to games as such, this does
14 not delimit narratology to the world outside games. The application just needs to be aware of the
15 differences between games and other media, and perhaps the limitations those differences cause
16 (Aarseth, 2012; Calleja, 2013; Pearce, 2005; Ryan, 2002, 2013; Tavinor, 2009).
17
18

19 One example is the difference between scripted narratives and emergent or interactive narratives,
20 as described by Tavinor (2009). Ryan (2002, 594) follows a similar line of thought when she
21 emphasizes how some media are better suited for some narratives than others: “there are plot
22 types and character types that are best for the novel, others are best for oral storytelling, and yet
23 others are best for the stage or the cinema. The question, then, is to decide which types of stories
24 are suitable for digital media.” When discussing game narratives, it is also important to
25 acknowledge the limits that player freedom sets to narration. It may be that narrative is in a more
26 or less permanent contradiction with play (Sicart, 2011) or interactivity (Ryan, 2002).
27
28

29 One distinction that may help understand this analysis is the difference between content and
30 expression (Montfort, 2007). While this is not the only way to make this distinction (cf. Genette,
31 1980), it is useful enough for the purposes of this article. Following this distinction, this article is
32 more interested in expression than content: *how* things are expressed, rather than *what* is being
33 expressed. The focus is on methods that could be used to express all kinds of things, and the
34 examples highlight specific illustrations of this.
35
36

37 There are many strands of narrativity in narratology, with some approaches likening all human
38 meaning-making to a form of narration (e.g. Flanagan, 1992). Even highly abstract games can be
39 analyzed with narratological tools, like analyzing *Space Invaders* (Taito Corporation, 1978) as a
40 narrative about aliens (in either sense of the word) or *Tetris* (Pajitnov, 1984) as a portrayal of the
41 “overtasked lives of Americans in the 1990s” (Murray, 1997). However, the value of such
42 analyses is far from self-evident. The tools presented below could be used to analyze either one
43 of the previous examples, but that would probably only be useful as a scholarly exercise.
44
45

46 This paper evokes Ryan (2002, 583) in noting that narrative “is a mental representation that can
47 be evoked by many media” and that “narrativity is a matter of degree”. The analysis here tries to
48 focus on games with a clearer narrative content, even if the clarity is often just a matter of
49 degree. Games combining narrative content with gameplay are here called ludonarrative games
50 (cf. Aarseth, 2012).
51
52

53 The current analysis tries to steer away from other senses of narrativity, like the retroactive
54 attribution of a story to a sequence of events or the reporting of game events to other people (cf.
55 Herman, 1997). However, a thorough examination of what narrativity and narratives in games
56 are is outside the scope of this paper. Since the focus is on the semiotics of the tools discussed,
57
58
59
60

any concept of narrativity that is compatible with the following conception of narrativity should be compatible with the tools presented in this paper:

1. Narratives can exist in any medium, but vary in realization.
2. Narrativity exists in degrees.
3. Games can be combined with stories in different ways. Different combinations lead to different meanings.
4. Not all that happens in a game is narrative, but most events have a narrative aspect to them.

This is obviously not meant to be a complete explanation of game narrativity, but provides a framework within which meaning effects can be understood. For a more comprehensive account of games and narratives, see for example Aarseth (2012), Calleja (2013), Frasca (2003), and Ryan (2002).

Meaning Effects

This paper shows how focalization, mode of narration, and granularity can be used to create meaning-effects in video games. Varying the use of these tools produces different meanings in literature, and should therefore do so also in video games. However, it is not claimed that these meaning-effects are stable, or that they can be said to produce consistently the same meaning-effects regardless of context (Bundgaard, 2013). Rather, these meaning-effects are highly context-dependent.

A meaning-effect is defined by Bundgaard (2010, 5) as “a cognitive response to a textual stimulus”. Meaning-effects “cover the whole spectrum going from purely emotional responses to highly elaborate interpretations” (Bundgaard, 2010, 5). Here, a meaning-effect is not limited to a textual stimulus, but understood analogously as something that is caused by a stimulus from a video game. This stimulus may be for example textual or something like spoken language or haptic feedback from a controller.

Understanding meaning as a cognitive response grounds meaning firmly in the cognitive processes of the player. Players are here understood as a more or less uniform group, with relatively similar cognitive processes. However, limiting the meaning in games to cognitive processes of a single isolated person does not do the concept justice (Mäyrä, 2007). Instead, these cognitive processes should be seen as happening in a complex context of (social) relations, ultimately making meaning a contextual and social concept. The approach taken here leaves out all consideration for cultural differences, but assumes that such differences would exist.

Studying how games can be used to create the meaning wanted by a designer, how they create meaning despite the intentions of the designer, and how players create meaning from the games they play is a large and complex set of questions, which is why the focus is here limited to the more limited sense of meaning-effect. Meaning-effects are one way meaning is created in relation to games, but not the only way.

Tools for Meaning-Making

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Video games differ from literature in several aspects, for example by being multimodal. The approach taken in this paper does not deal with the ontology of games – trying to map out all the possible values of the variables discussed here – but rather the focus is on the semiotics of these tools. The concepts discussed are focalization, mode of narration, and granularity. These three concepts are discussed together because they all pertain to the perspective and the way of telling the player/reader what it is that they are seeing and how. They all concern the perspective of telling: the way the narrative is told, and the point of view the narrative is told from. Understanding how to vary the perspective enables designers to make the stories they tell more effective in conveying the meanings they want to convey. This does not mean that they are the only significant narratological tools useful for understanding games. Development of other narratological tools is left for future research.

In addition to showing how these concepts apply to video games, they are extended to cover cases that are not found in literature, but are present in games. The central differences requiring this extension are player agency, interactivity and multimodality (Arjoranta, 2011). These concepts are discussed in order to give game scholars a more comprehensive vocabulary for studying how games create and contain stories. Hopefully, these three concepts shed some light on how specific types of meaning-effects are created in games. Designers can use these tools to convey the things they want to convey in a consistent and effective manner.

Of course, the designer is not the sole authority on the meaning of a game. Both the player's interpretation and the context of play do shape the meaning. The final result is necessarily a combination of authorial intent and player agency (Bizzocchi & Tanenbaum, 2012). What designers can do is to aim for the best possible representation of their intent.¹

Focalization

Focalization is the point of view things are seen from (Bundgaard, 2010; see also Evans & Green, 2006, p.196; cf. Ciccoricco, 2012). This can be the point of view of a character present in the story, those of several characters, or even outside any sentient being, a point in space. Any of these can include evaluations, judgments or feelings. In the case of a point-in-space perspective, the evaluations can be those of a narrator.

Genette (1988) calls this perspective. He classifies perspective into three categories: zero focalization, external focalization and internal focalization (cf. Ryan, 2002; Elverdam & Aarseth, 2007). With zero focalization, Genette means that the story is not focalized into a character, but is told from outside any of them. The difference between external and internal focalization is whether there is access to the characters' thoughts and emotions. External focalization gives a behavioristic view on the characters, while internal focalization grants access to their mental landscapes. These can be mixed in a single narrative, and all three can be present. This full scale of perspectives can be found in video games.

¹ For practical approaches designers use to aspire for a commonly shared vision, see e.g. Hagen (2010).

1
2
3 Nitsche (2005) uses a similar approach, basing his analysis on Mieke Bal's (1997) application of
4 Genette's terminology to visual perspectives. Nitsche makes an important distinction between
5 focalization and narrating voice. No strong narrating voice may be present in a game, but the
6 perspective can still be clear and distinct. A full review of all possible perspectives in games
7 would be beyond the scope of this paper. Some selected examples are discussed instead.
8
9

10 Games that are focused on the strategic level tend to have zero focalization. An example would
11 be the real-time strategy game *Command & Conquer* (Westwood Studios, 1995), where the
12 game is portrayed from a free-floating isometric view. It can freely shift around the map, paying
13 attention to areas chosen by the player. Because of technical limitations, the point of view was
14 limited to movement in two dimensions, with the third dimension and the ability to zoom only
15 added to later games in the same genre.
16
17

18 The literal point of view of the camera angle should not be confused with the narrative
19 perspective, even though they often coincide. An abstract game may have very little narrative
20 content, in which case varying the perspective does not make the game suddenly narrative; but in
21 cases where the game has narrative content, choices of perspective have narrative consequences.
22
23

24 A game may have a strategic level of abstraction and still utilize forms of focalization other than
25 zero focalization. *Dawn of War II* (Relic Entertainment, 2009) is a strategy game that continues
26 the same genre as *Command & Conquer*, but focalizes the single player game through a central
27 protagonist. However, when playing other modes (e.g. multiplayer), there is zero focalization.
28
29

30 Real-time strategy games use a ludic mechanics related to the point of view. It is commonplace
31 for the view of the player to be limited to a small area. This limitation is described with a term
32 borrowed from military theory, "fog of war." The fog of war works in two similar manners.
33 First, only the area that the player's units are able to see is revealed to them. To learn about the
34 surrounding terrain, it is necessary to explore the game map. Second, when no units can see a
35 certain area, changes in that area are not shown to the player and that area is shown as partially
36 hidden. Enemy movement, new buildings and other changes become evident only when the
37 player sends units to scout the area (see Figure 1).
38
39

40 This means that while the literal point of view might be a bird's-eye view of the map, the
41 perspective at least partially blends with that of the commanded troops. Only information
42 available to them is available to the commander. This might be explained in diegetic terms with
43 communications technology or magic, or seen as an extradiegetic game mechanics.²
44
45

46 External focalization is typical to video games: the story is told from the perspective of a central
47 protagonist, but from a behaviorist point of view, without access to the character's
48 consciousness. A player may control the actions of the protagonist without having access to their
49 mental landscape.
50
51

52
53 ² This study uses the term "diegesis" in order to clarify some aspects of the discussion. However,
54 the term is not unproblematic when applied to games (see e.g. Jørgensen, 2013, p.65–67).
55
56
57
58
59
60

1
2
3 This is where games differ from literature. The player's perspective may be inside the body of a
4 character (i.e. first-person perspective), up to and including having control of all of their actions,
5 without having any access to their mental perspective.
6

7
8 An early example of this is the text adventure game Zork (Personal Software, 1977). The game is
9 seen from the perspective of "you", but this "you" lacks any distinct qualities (see Figure 2).
10 This featureless "you" is used also in other text adventure games (Karhulahti, 2012).
11

12 A later example of external focalization would be Half-Life (Valve Corporation, 1998). In Half-
13 Life, the player controls the actions of Dr. Gordon Freeman. Because Freeman stays completely
14 silent during the game, his implied agency is based solely on his actions. But the actions are
15 almost completely controlled by the player, even during the scripted sequences where the
16 player's own agency is limited.
17

18
19 This first-person external focalization is usually done for a specific meaning-making effect: the
20 player is supposed to identify with the tabula rasa-like character (the anonymous "you") through
21 viewing the actions of that character as their own. Whether this is successful depends heavily on
22 other factors like the coherence of the character's actions when the player is not controlling
23 them, the actions of other characters within the storyline, and their reactions to the player's
24 character. It is not enough to consider the player's character in a vacuum, even if they are
25 portrayed as a blank slate, but as a reactive part of the game world.
26
27

28 It can be argued that video games can make use of the character-internal perspective to achieve a
29 perspective not available in literature. This perspective is embodied in the physical perspective of
30 the character being played, but does not allow access to their mental landscape in the manner of
31 internal focalization. In other words, the player has control over a character's actions while not
32 having access to the character's mental landscape. This can be used, for example, to deceive the
33 player (cf. unreliable narration, below).
34
35

36 An example of this is Assassin's Creed III (Ubisoft Montreal, 2012). The Assassin's Creed series
37 uses a metanarrative in which the player controls a protagonist called Desmond in the games'
38 near-future present and Desmond's different ancestors in their historical environments. A
39 machine called Animus lets Desmond relive the lives of his ancestors. Desmond is part of an
40 organization known as the Assassins, who fight against their eternal enemies, the Templars.
41 Different games have different ancestors fighting for the Assassins' cause.³
42
43

44 Assassin's Creed III uses the player's expectations against them, by starting the game off with a
45 Templar protagonist, Haytham Kenway. In a clever narrative trick, the player is made to play
46 through missions that are essentially identical to the ones carried out as an Assassin in previous
47 games. The two factions are shown to be functionally identical in their methods and pursuits. In
48 the narrative, Haytham's allegiance is neatly side-stepped: "Who should I say you are?" a
49
50

51
52 ³ Assassin's Creed III is actually the fifth game in the main series. The second game in the series
53 received two sequels. Additionally, there were already three games for hand-held consoles and
54 few more for mobile devices.
55
56
57
58
59
60

1
2
3 character asks him. “You don’t. They’ll know,” Haytham answers. He is aware that he is
4 working for the Templars, but the player is not. Haytham does not need to state aloud something
5 that is obvious to him. It is only after few hours of play that the game reveals Haytham’s
6 allegiance: he initiates another character into the Templar order and at the end of the ceremony
7 states, “You are a Templar.”
8
9

10 Interestingly, the game’s user interface is complicit in this deceit. When Haytham is escorted by
11 Templar allies in disguise, they are marked with a symbol over their head to make sure the player
12 knows which ones are allies and which ones are enemies. However, the symbol over their head is
13 not the symbol of the Templars, but that of the Assassins. This might be narratively explained in
14 the game with the fact that at least part of the game’s interface is part of the Animus, visible both
15 to the player and Desmond. The assassin symbol might be there for Desmond’s sake.
16
17

18 Assassin’s Creed III is an example of the perspective described above, since it lets the player
19 pursue all kinds of goals as Haytham, but has them unknowingly help the Templars. If the player
20 had access to Haytham’s knowledge, they would learn about his allegiance, since it is his central
21 driving force and defining characteristic. Instead, every strike the player strikes for the
22 Assassins’ cause while playing Haytham, is actually a strike against them.
23
24

25 Some games use external focalization, but place a filter of character emotion or experience on
26 what the player sees or hears (Nitsche, 2005). The perspective is external to the character played,
27 but the character’s emotions and experiences still color the player experience.⁴ This is used for
28 great effect in Max Payne (Remedy Entertainment, 2001) and Dead Space 3 (Visceral Games,
29 2013).
30

31 In Max Payne, the player plays through Payne’s dream sequences. The first one is a labyrinth of
32 identical hallways that seem to lead nowhere. The screen is murky and ominous, with the
33 lighting reflecting Payne’s experience of the situation. Eventually, the screen is tinted red as
34 Payne approaches the bloody finale of the sequence. The camera stays external, but is very much
35 affected by Payne’s experiences.
36
37

38 Dead Space 3 has a co-operative play mode, where two players control the characters Isaac
39 Clarke and John Carver. Both are controlled from the external perspective, but the players are
40 still occasionally shown different things when the characters’ experiences of the game world
41 differ. This is significantly impacted by Carver’s mental instability, forcing the player controlling
42 him to play through episodes of dementia.
43
44

45 Internal focalization can be achieved in games with measures similar to those in literature.
46 Presenting internal dialogue or describing a character’s experiences can be done in different
47 modalities in games. A direct analogue to literature would be a written description of the
48 character’s emotions embedded within the game, but the same effect can also be achieved with
49 spoken internal dialogue.
50
51

52
53
54
55 ⁴ This can be likened to the literary concept of free indirect discourse.
56
57
58
59
60

1
2
3 Video games may also describe a character's internal state by suddenly removing player control
4 and having the character act regardless of the player's wishes, perhaps in a harmful or destructive
5 manner, a technique not available in literature. This sudden removal of control limits the player's
6 agency (Tanenbaum & Tanenbaum, 2009) and can be used to highlight the player's helplessness
7 in the situation. Sicart's (2009) analysis of Bioshock (2K Boston, 2007) shows how this can be
8 used to create ethical meaning-effects.
9
10

11 Some games move the focalization from inside the character's viewpoint to outside it when the
12 character dies or goes unconscious. This disassociates the perspective from the character and
13 signals that the player has lost control of the character's actions. An example of this is *The Elder*
14 *Scrolls V: Skyrim* (Bethesda Game Studios, 2011). It is possible to play *Skyrim* from a third
15 person perspective, with the player character visible on the screen, but the camera defaults to a
16 first person perspective. However, when the player character dies, the camera moves away from
17 behind the character's eyes and shows the character's dead body (see Figure 3).
18
19

20 Another example of this change in perspective is usually known as the "kill cam". It is used in
21 multiplayer modes of first-person shooters, like for example in *Call of Duty: World at War*
22 (Treyarch, 2008). A kill cam uses the same disassociated perspective discussed above, showing
23 you the death of your character from an outside perspective. But it places the perspective so that
24 it follows your killer, showing you the moments before your character's death and the actions
25 that lead to it. This can be even more disassociating than simply witnessing the death of your
26 character from outside, because in this case the perspective is placed in the eyes of your
27 character's killer. In this example, the mode of focalization stays the same, but the focalizer
28 changes.
29
30
31

32 There seems to be a possible meaning-effect related to this. The technique shows how the
33 controlled character is essentially interchangeable with other characters in the game. The actions
34 of your killer are similar or identical to the ones you were undertaking trying to kill them. They
35 happened to be faster, more accurate or better positioned than you, and managed to kill you
36 before you killed them, but it could have been the other way round. You might even infer some
37 hints as to what would have changed the situation from seeing the world from your killer's eyes
38 for a few seconds. While the feeling of embodiment may be strong when controlling a character
39 in a first-person shooter, the last minute change of perspective reminds you that the character is
40 one of many, discarded as soon as it becomes unusable.
41
42

43 Both *Mass Effect 2* (BioWare, 2010) and *Tomb Raider* (Crystal Dynamics, 2013) use an
44 opposite technique in their introduction. Both games are played from an external perspective,
45 with the player character portrayed on the screen. But both games show parts of the introductory
46 cinematic from an internal perspective, with the camera situated where the character's eyes
47 would be. Again, it is an exception to the way most of the game is portrayed, and perhaps an
48 attempt to make the player identify with the perspective of the character (soon to be) played.
49
50

51 These two contrary examples show how changing the focalization can be used to create meaning
52 effects: to create a distancing effect, move the perspective from an inside perspective to outside
53 the character's body or to another body. Coupled with a loss of control this can be used to
54 convey helplessness. To create the opposite effect of identifying with a character, move the
55 perspective inside the character's body.
56
57
58
59
60

1
2
3 It seems that games have all the same perspectives as literature (zero, external and internal
4 focalization) at their disposal and an additional one. This embodied focalization places the player
5 in control of the actions of a character (or several characters), and places the physical perspective
6 inside the body of the character, but does not grant access to that character's mental landscape.
7 This is usually because that character is created as a blank slate for the player to identify with
8 and to fill out as the game progresses.
9
10

11 Mode of narration

12
13 Stanzel (1981) makes a central distinction in modes of narration by dividing narrating characters
14 to teller-characters and reflector-characters. These can be equated with Genette's (1988) narrator
15 and focalizer, respectively. The distinction between teller-characters and reflector-characters
16 does not necessarily follow the division to first- and third-person narrators. First-person narrators
17 that do not verbalize their thoughts are not teller-characters, if they do not communicate with the
18 reader, but only talk to themselves (Stanzel, 1981).
19
20

21 The teller-character is a narrator, somebody who conveys or reports the story, and communicates
22 with the reader in this manner. They are more or less conscious of the fact that they are
23 conveying a story to somebody, and may comment, anticipate or otherwise make sure that the
24 reader can follow what is being told. They may also be unreliable by telling things that are not
25 true in the narrative world or misdirect the reader in some other manner.
26
27

28 An example of a game with an unreliable narrator is *Call of Juarez: Gunslinger* (Techland,
29 2013). The game is narrated by the protagonist gunslinger, and the events of the game consist of
30 his narration, and the speculations of his listeners. This means that the facts of the game fiction
31 change whenever the narration is questioned (e.g. Indians turn into bandits in the middle of a
32 fight), or the narrator corrects someone else speculating on the events (e.g. a duel already won
33 never happened; see Figure 4).
34
35

36 *Dragon Age 2* (BioWare, 2011) uses a similar technique. At the beginning of the game, the
37 player character appears very powerful, killing groups of enemies with ease. This is because the
38 beginning is narrated by an exaggerating narrator, later coerced to remain closer to the truth. This
39 change in narration is reflected on two levels: in the game's rules and visual depiction. The rules
40 are changed so that the main character loses access to powers that were available in the
41 beginning and does less damage to the enemies. The visual depiction also becomes less
42 hyperbolic. This is even reflected in the breast-size of a female character, with the breasts
43 portrayed significantly larger in the introduction than later on in the game.
44
45

46 In comparison, a reflector-character is not a narrator and is not responsible for conveying the
47 tale. Instead, they experience it. The reader is presented with a description of the character's
48 experiences as they experience them. This also means that they cannot properly be considered
49 deceitful, with the exception of self-deceit (Stanzel, 1978). A reflector-character can be confused
50 or misled or they may refuse to accept the truth, but they do not deceive the reader intentionally.
51
52

53 It is also important to make a distinction regarding what Stanzel (1978) calls the person. He
54 divides a person into the categories of identity and non-identity. This has to do with the worlds of
55 the narrator and the fiction, which can be either identical (homodiegetic) or separate
56 (heterodiegetic), depending on whether the narrator inhabits the world they narrate (Genette,
57
58
59
60

1
2
3 1980).

4
5 Video games make use of both teller-characters and reflector-characters. Both types of characters
6 can also be used in several modalities. The modality in games most similar to literature is the
7 written text, which is present in most games. It can be present as written dialogue, which may or
8 may not be also voice-acted, and vice versa. This is common enough to be a feature of almost
9 any game with discernible characters, and even of many games with no characters. For example,
10 in Euforia (May, Kremers & Grainger, 2009), the narrating mother tree is the only character
11 with a distinct personality, but it is only present in the game through textual narration.
12
13

14
15 Written text may also be present in the form of journals or similar texts that provide direct access
16 to either a character's thoughts or story events. It is common especially in role-playing games to
17 have an in-game-journal that catalogues both the past events and the future goals of the player
18 character (e.g. Skyrim [Bethesda Game Studios, 2011]). A journal can be diegetic (internal to the
19 game world), extradiegetic (external to the game world) or combine aspects of both, for example
20 by chronicling the events of the story and providing instructions for the player.
21

22
23 Narration in games can also be done using a voice, for example with a voice-over. This form of
24 explicit narration can be used either by teller-characters or reflector-characters, depending on
25 whether the character is simply verbalizing their thoughts for themselves or for the benefit of the
26 player.⁵ Alan Wake (Remedy Entertainment, 2010) has both textual and verbal narration. The
27 textual narration is encountered in the game as loose pages of a book that the player may pick up.
28 The voice-over is performed by Alan Wake, the game's teller-character.
29

30
31 It is also possible to break what is seemingly logical or possible within the game world and
32 produce different kinds of impossible narrators. This is often done in literature and cinema, for
33 example with narrators that survive their own deaths and continue narrating the story. This can
34 create surprise or amazement in readers/viewers witnessing this impossibility.
35

36
37 It is not necessary for the narrating character to be the protagonist, or even a character the player
38 plays. Bastion (Supergiant Games, 2011) features a seemingly omniscient teller-character that
39 follows the actions of the protagonist from an outside point of view, but who is nevertheless a
40 character within the fictional world.⁶ Bastion is also a good example when discussing something
41 Tavinor (2009) points out: the events that happen in a video game are at least partially chosen by
42 the player, and in that sense might not be chosen for their narrative function. The actions players
43 do in games may instead serve a tactical or playful purpose.
44

45
46 This is highlighted in Bastion, when the narrator starts commenting on the player's repeated
47 actions, like destroying the scenery. Destroying scenery instead of proceeding in the game's
48 story serves less and less narrative purpose. Bastion shows that the role of the narrator might not
49

50
51 ⁵ Of course, all narration is ultimately for the benefit of the player, but analytically this
52 distinction can still be made.
53

54
55 ⁶ When the protagonist first finds the narrator, he comments: "He finds me. We talk for a spell."
56
57
58
59
60

1
2
3 be limited to conveying the narrative. While the narrator is important in relaying the story of the
4 game, it also spends large portions of the game describing seemingly inconsequential events.
5 This serves as a reminder of the arguments Sicart (2011) and Ryan (2002) present on the
6 contradiction of play, interactivity and narrativity.
7

8
9 It seems that video games can use both teller-characters and reflector-characters in ways similar
10 to literature. Teller-characters and reflector-characters can use text, but games also offer other
11 means to convey their meanings. A common way of doing this is by using spoken language.
12 Additionally, a teller-character could for example break the fourth wall by pointing at things,
13 gesturing, or making faces at the player. This would imply that they acknowledge the presence of
14 someone witnessing the events taking place, even if the fictive world is incapable of perceiving
15 them.
16

17
18 Because games generally require some kind of input from the player to proceed, it follows that
19 games as systems are built with the assumption that there is a person witnessing the events of the
20 game. If there is not, the game either does not continue, waiting for the player to do something,
21 or it will end very quickly, often with the demise of the player character. This could be used for
22 different kinds of meaning-effects by varying the amount the characters are aware of and interact
23 with the player.
24

25 26 Granularity

27
28 According to Bundgaard (2010, 26), “[g]ranularity and density capture the fineness/coarseness of
29 a description and its richness with respect to elements mentioned within it.” There is a natural
30 level of granularity in literary description that corresponds to how perception works (Bundgaard,
31 2013). There is a basic phenomenological level on which humans are aware of their surroundings
32 even when they are not paying special attention to anything. By using this level of description,
33 narration creates the impression that the described events correspond to the level of detail of
34 human perceptual experience.
35

36
37 Fictional worlds in both literary works and games are incomplete in the sense that they never
38 specify everything about the world (Juul, 2005). Another way of saying this is to call fiction
39 indeterminate, since they are never defined in perfect detail and could correspond with many
40 different states of being: there is no determinate way to interpret fiction (Ingarden, Frizer, Chipp,
41 1970). Juul (2005) also argues that some games have what he calls incoherent worlds, where the
42 rules and fiction of the game clash. His example is Donkey Kong (Nintendo, 1981) in which
43 Mario has three lives for no apparent fictional reason.
44

45
46 By relying on expectations regarding how perception works, narration can omit many things and
47 still remain coherent. For example, a text does not need to explicitly mention that people are
48 clothed, because that is the assumption of most readers. A lengthy literary work could omit all
49 descriptions of clothing without the readers assuming that the characters are naked.
50

51
52 Only deviations from the assumption of the basic level of description need to be specified
53 (Walton, 1990). In most contexts, being clothed hardly requires a mention. Being clothed is the
54 assumed standard because it reflects our everyday experiences of people and their tendency to
55 wear clothes. Ryan (1980) argues that interpreting fiction, we use the principle of minimal
56 departure to make sense of the world. The principle states that we interpret fiction as being the
57
58
59
60

1
2
3 closest equivalent to the reality we know. Different contexts create different expectations: we
4 cannot assume equivalence as freely when discussing works of fantasy or science fiction.
5

6
7 Deviations from the norm can also be used to create meaning-effects. Sudden changes in
8 specificity can, for example, focus the reader's or player's attention to some particular detail or
9 object. This might signal focused attention from the character narrating the events. Constant
10 focused attention or attention to things that feels unnatural to the reader or player can create a
11 feeling of alienation and possibly reflect a distorted view of the world.
12

13 Games contain different types of granularity. It is possible to differentiate between, for example,
14 visual granularity and granularity of textual description, sound and simulation. These types of
15 granularity need not reflect the same level of detail, but can differ from each other by design.
16

17
18 Both visual granularity and granularity of simulation are issues that are associated with the
19 discussion of realism in games. Visual realism is often seen as an ideal to aim for in games,
20 something that increasing computing power is providing to a degree higher than ever before.
21 This emphasis on visual veracity reflects the discourses on virtual reality or cyberspace, where
22 the central purpose of technology is to create a space where reality and representation become
23 inseparable (e.g. Featherstone & Burrows, 1995). These discourses seem to imply that as
24 granularity increases, mediation decreases (Ryan, 1999).
25

26
27 It is typical that a game portrays a level of visual granularity throughout or changes between a
28 few. Good examples are the normal view and the strategic map of Civilization V (Firaxis Games,
29 2010). The first gives more fine-grained information about the game world, portraying things in
30 more detail, with the latter switching to more iconic representations of the objects in the game
31 world. In theory, the game would be playable with just the icons, as they contain all the
32 necessary information for playing the game. This would lessen the visual granularity of the game
33 and remove things like character animations that are not necessary for playing the game but add
34 to the feel of it.
35

36
37 Usually the levels of granularity stay constant throughout the game, and different levels serve
38 different purposes, like commanding troops within a sector or seeing the overall situation of a
39 war in a strategic war game with two levels.
40

41 Games differ greatly in what they choose to simulate, if they simulate anything at all (entirely
42 abstract games may not be simulations of anything else). This choice is usually associated with
43 the genre and theme of the game. What would be of major importance in one game, is
44 insignificant or even banal in another. For example, SimCity 4 (Maxis, 2003) features
45 simulations of waste management, but most games do not. Simulating waste management is
46 interesting only in the context of city management, even if a simulation that aspired for realism
47 would need to include it. The choice of granularity focuses attention on specific elements of the
48 game, highlighting waste management as something necessary in understanding how cities work,
49 but as an unimportant concern in most games.
50

51
52 An illustrative comparison can be made between Civilization IV (Firaxis Games, 2005) and
53 Civilization V. While pollution is simulated in Civilization IV, it is absent from Civilization V.
54 While the two games still simulate the same thing (empires), players of Civilization V are free
55 from environmental concerns. It would be tempting to read a political statement into this.
56
57
58
59
60

1
2
3 However, the game was simplified in many aspects between its fourth and fifth instances. A
4 likely explanation is that pollution was one of the many systems that were deemed unnecessarily
5 complex and removed for that reason.
6

7
8 Another example can be found by looking at how games simulate the workings of the human
9 body. *Skyrim* and *Fallout: New Vegas* (Obsidian Entertainment, 2010) simulate how the human
10 body handles nutrition and rest in a similar manner, but with small differences.
11

12 In *Skyrim*, the player character will receive either stamina points, health points or both from
13 eating and drinking different foods and drinks. The character will also heal from sleeping, and
14 may receive a bonus to experience gain for sleeping in a bed owned by the character. This is
15 beneficial for surviving in the game, but not necessary for completing it.
16

17
18 A player could, for example, choose to have their character in *Skyrim* eat nothing during the
19 game. While this would destroy the believability of the game as a simulation, it would not have
20 any effect on the game on the level of game mechanics, except by making the game more
21 difficult. In addition, the benefit gained from food and drink is relatively minor when compared
22 to healing and stamina potions. This makes the incentive to spend time gathering and consuming
23 food and drink small in comparison to potions.
24

25
26 To understand the world of *Skyrim* we would need to assume that it differs from our own in how
27 nutrition works and depart from Ryan's (1980) principle of minimal departure. Another way of
28 reading the situation would be to assume that the world's fiction is incoherent in Juul's (2005)
29 terms. The second reading would make sense, considering that most of the world's inhabitants
30 are involved with farming, even if it is both ineffectual and unnecessary. It could be argued that
31 the game world has different rules for the protagonist than for the rest of the population in order
32 to accommodate the needs of playability.
33

34
35 If the player chooses the optional hardcore mode in *Fallout: New Vegas*, the player character
36 must eat, drink and sleep. With this option enabled, it is necessary to pay attention to the basic
37 human needs of the character in order to complete the game. Eating, drinking and sleeping are no
38 longer things that make the game easier, but become something that is necessary to keep the
39 player character alive and well. Thematically appropriately *Fallout: New Vegas* also simulates
40 radiation. Exposure to radiation has harmful effects on the player character's body that will
41 slowly harm and eventually kill them.
42

43
44 The granularity of simulation in *Fallout: New Vegas* is more detailed than in *Skyrim* when it
45 comes to simulating human bodily functions. This change in specificity gives rise to different
46 experiences of the game world: in *Skyrim*, the player character may suddenly die from damage,
47 but unless a tough monster or a misstep from a high cliff kills them, they will continue to get
48 stronger, eventually becoming powerful enough to overcome any obstacle. Walking around the
49 game world is an adventure, and the game encourages bold exploration: even if the player
50 encounters something too dangerous to challenge, they have the option of running away and
51 returning when their character is more experienced, better equipped, and more powerful.
52

53
54 In contrast, exploration in *Fallout: New Vegas* is a more perilous activity. In addition to bandits
55 and monsters, the player must be aware of the character's need for sustenance and of the harmful
56 effects of radiation. Exploration can still be profitable (and often is), yielding better equipment or
57
58
59
60

1
2
3 wealth, but has an added layer of danger: venture too far and too boldly, and you might not make
4 it back. Running out of anti-radiation medicine, food and water while too far away from the
5 nearest town can lead to a death that is only reversible by returning to an earlier save game.
6 Gaining better equipment does not help if you die in the radioactive wasteland.
7
8

9 This contrast between Skyrim and Fallout: New Vegas shows a meaning-effect that is achieved
10 by altering the level of granulation in simulation. By simulating human needs, Fallout: New
11 Vegas places more emphasis on survival than Skyrim. Of course, a cautious approach to save
12 games make either game less likely to lead to a dead end, lessening the effect in Fallout: New
13 Vegas.
14

15
16 Here, developers of Fallout: New Vegas could have used similar game mechanics than the
17 makers of XCOM: Enemy Unknown (Firaxis Games, 2012). XCOM has a game mode called
18 Ironman, where the player is prevented from keeping more than one saved game. All choices in
19 the game are final, and the player simply has to accept any failures. This gives all choices weight
20 that is lacking from the games which accept repeated cycles of saving and loading.
21

22 Both Skyrim and Fallout: New Vegas have one thing in common in their simulation of the
23 human body: both use the abstract measure of hit points to simulate character health. Regardless
24 of what other simulation systems these games use for measuring health, loss of hit points is the
25 most common cause of a character's death. In both games, characters can go through truckloads
26 of food and drink in a matter of minutes in order to get more hit points. This causes no ill effect
27 on their stomach or digestive system – things not simulated in the game.
28
29

30 The examples discussing SimCity 4 and the two Civilization games and comparing Skyrim to
31 Fallout: New Vegas are just some of the ways different granularities of simulation can lead to the
32 player experiencing the game differently. Even small differences in simulation can lead to large
33 differences in experience, as is the case with Skyrim and Fallout: New Vegas.
34
35

36 Conclusions

37
38 This article has not tried to build a comprehensive overview of how the tools it describes are
39 used, but has focused on presenting differences and possibilities in using them. Therefore the
40 results are eclectic rather than exhaustive, focusing on showing theoretical possibilities in
41 understanding certain ways of expressing things with games.
42
43

44 The examples used in this article draw from existing games, showing that the techniques
45 described here are already in use. What is lacking is a comprehensive understanding how to use
46 these techniques, a recognized language that enables designers to choose the best tool for the
47 task, and academics to identify when one is used. With this goal in mind, Table 1 summarizes
48 some of the findings of this article, hoping that further research complements these results.
49

50 As can be seen from the table, many of the tools mentioned concern identification or association.
51 This may either mean that these are common tools, easily used by designers. However, it may
52 also mean that they are easy to identify and I have failed to notice other options. I invite others to
53 extend the examples I have given to fix any possible oversights.
54
55

56 One possible reading on why many of the tools concern identification is that games need these
57 tools in order to reach the level of identification more easily provided by the expressive
58
59
60

1
2
3 techniques of literature: internal dialogue, access to character motivations, well-rounded
4 characterizations and so on. This reading could be used to argue that games use these techniques
5 not because they are easy, but because they are necessary. Not all games try to convey narratives,
6 but the ones that do need to employ tools that suit the task games have traditionally struggled
7 with, combining interactive entertainment with high-quality storytelling.
8
9

10 Another possible reading would be that the tools are actually playing on games' strengths. Games
11 that combine narrative content with interactive gameplay are in the unique position of giving the
12 player characters to look at, explore the world through and play with. In some sense, this relation
13 is more intimate than in literature, with player action and character action blending into a whole
14 where it can be hard to tell one apart from the other. However, it is exactly here that new
15 possibilities emerge: like the examples of Bioshock and Assassin's Creed III show, there is room
16 for new tools where games develop their own expressive language that can convey meanings not
17 easily communicated through other media.
18
19

20
21 Designers can hopefully look at these techniques and see the possibilities they offer, but also
22 notice what has not been done. Focalizations still tend to follow one character, narration usually
23 stays safely within four walls and hit points are an enduring abstraction. Experimental literature
24 breaks conventions with admirable reliability. One hopes games would have even more room for
25 play.
26
27

28 Acknowledgements

29
30 References

31
32 Aarseth, E. J. (1997). *Cybertext*. Baltimore: JHU Press.

33
34 Aarseth, E. (2001). *Computer Game Studies, Year One*. *Game Studies*, 1(1). Retrieved from
35 <http://www.gamestudies.org/0101/editorial.html>
36

37
38 Aarseth, E. (2003). "Playing Research: Methodological Approaches to Game Analysis." In
39 *Digital Arts and Culture Conference*. Vol. 16. Melbourne.
40

41
42 Aarseth, E. (2012). "A Narrative Theory of Games." In *Proceedings of the International*
43 *Conference on the Foundations of Digital Games - FDG '12G '12*, 129. New York, New York,
44 USA: ACM Press. doi:10.1145/2282338.2282365.

45
46 Arjoranta, J. (2011). *Do We Need Real-Time Hermeneutics? Structures of Meaning in Games*.
47 *Proceedings from DiGRA 2011: Think Design Play*. Utrecht: Utrecht School of the Arts.
48

49
50 Bal, M. (1997). *Narratology*. University of Toronto Press, Toronto; Buffalo; London.

51
52 Bizzocchi, J., & Tanenbaum, J. (2012). *Mass Effect 2: A Case Study in the Design of Game*
53 *Narrative*. *Bulletin of Science, Technology & Society*, 32(5), 393–404.
54 doi:10.1177/0270467612463796

55
56 Bundgaard, P. F. (2010). Means of meaning making in literary art: focalization, mode of
57 narration, and granularity. *Acta Linguistica Hafniensia: International Journal of Linguistics*
58 Volume 42, Supplement 1, 2010. Special Issue: *Travaux du Cercle Linguistique de Copenhague*
59
60

1
2
3 Vol. XXXIV Linguistics and Poetics.
4

5 Bundgaard, P. F. (2013). Roman Ingarden's theory of reader experience: A critical assessment.
6 *Semiotica*, 2013(194), 171-188.
7

8 Calleja, G. (2013). Narrative Involvement in Digital Games. Conference proceedings from
9 Foundations of Digital Games. Chania, Crete, Greece.
10

11 Ciccoricco, D. (2012). "Focalization and Digital Fiction." *Narrative* 20 (3): 255–276.
12 doi:10.1353/nar.2012.0021.
13

14 Elverdam, C. and Aarseth, E.. (2007). "Game Classification and Game Design: Construction
15 Through Critical Analysis." *Games and Culture* 2 (1): 3–22. doi:10.1177/1555412006286892.
16

17 Evans, V., & Green, M. (2006). *Cognitive Linguistics: An Introduction* (p. 851). Edinburgh:
18 Edinburgh University Press.
19

20 Featherstone, M., & Burrows, R. (Eds.). (1995). *Cyberspace/cyberbodies/cyberpunk: Cultures of
21 technological embodiment*. London: Sage Publications. doi:10.4135/9781446250198
22

23 Flanagan, O. J. (1992). *Consciousness reconsidered* (p. 193). Cambridge, MA: MIT press.
24

25 Frasca, G. (2003). Ludologists love stories, too: notes from a debate that never took place.
26 Proceedings of DiGRA 2003. Utrecht University and Digital Games Research Association
27 (DiGRA). Retrieved from <http://www.digra.org/dl/db/05163.01125>
28

29 Genette, G. (1980). *Narrative Discourse: An Essay in Method*. Ithaca, New York: Cornell
30 University Press.
31

32 Genette, G. (1988). *Narrative discourse revisited*. Ithaca, NY: Cornell University Press.
33

34 Hagen, U. (2010). Designing for Player Experience: How Professional Game Developers
35 Communicate Design Visions. In *DiGRA Nordic 2010: Experiencing Games: Games, Play, and
36 Players*. Stockholm: University of Stockholm.
37

38 Herman, D. (1997). "Scripts, Sequences, and Stories: Elements of a Postclassical Narratology."
39 *PMLA* 112 (5): 1046–1059. <http://www.jstor.org/stable/463482>.
40

41 Ingarden, R., Fizer, J., & Chipp, H. B. (1970). Letters Pro and Con. *The Journal of Aesthetics
42 and Art Criticism*, 28(4), 541–543. Retrieved from <http://www.jstor.org/stable/428495>
43

44 Juul, J. (2005). *Half-Real: Video Games between Real Rules and Fictional Worlds* (p. 254).
45 Cambridge: MIT Press.
46

47 Jørgensen, K. (2013). *Gameworld Interfaces*. Cambridge: MIT Press.
48

49 Karhulahti, V-M. (2012). "Feelies : The Lost Art of Immersing the Narrative." In *DiGRA Nordic
50 2012 Conference: Local and Global – Games in Culture and Society*. Tampere, Finland.
51

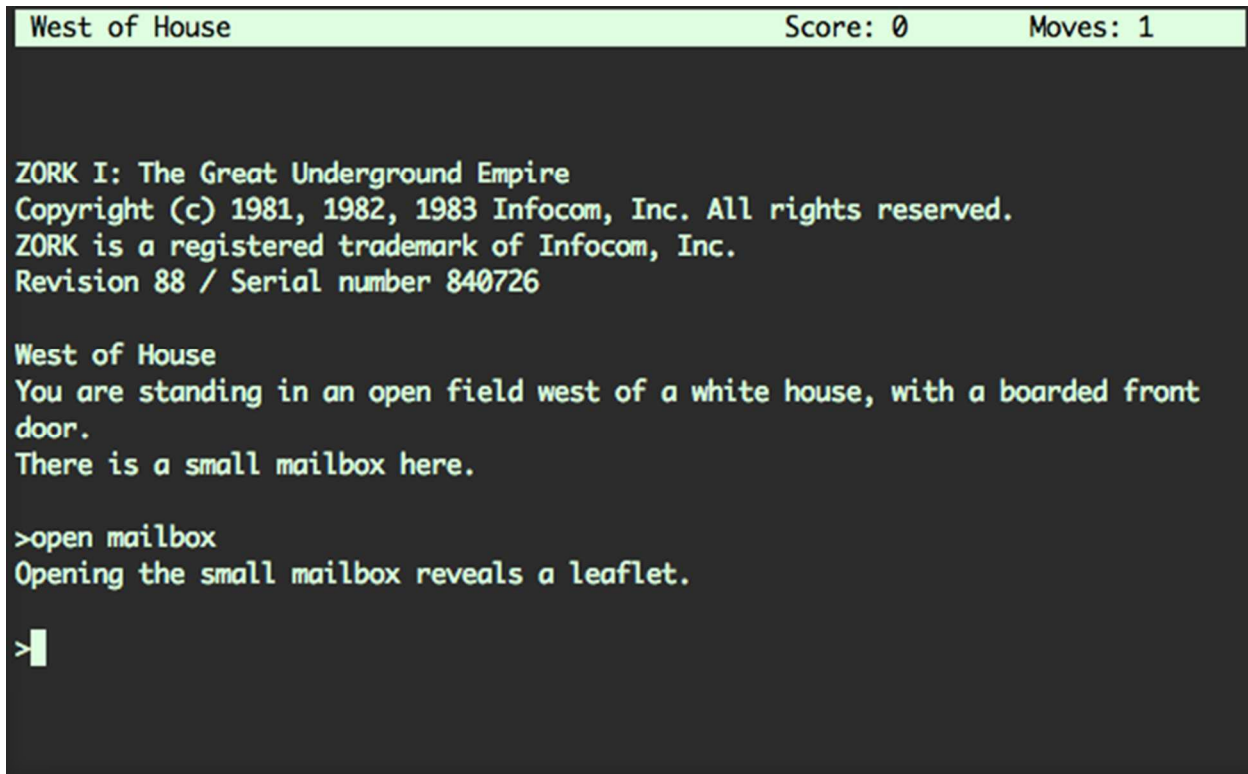
52 Mäyrä, F. (2007). The Contextual Game Experience: On the Socio-Cultural Contexts for
53 Meaning in Digital Play. *Situated Play, DiGRA 2007* (pp. 810–814). Tokyo.
54

- 1
2
3 Montfort, N. (2007). *Generating Narrative Variation in Interactive Fiction*. University of
4 Pennsylvania. Retrieved from <http://gradworks.umi.com/3271851.pdf>
5
6
7 Murray, J. H. (1997). *Hamlet on the holodeck: The future of narrative in cyberspace*. New York:
8 Simon & Schuster.
9
10 Nitsche, M. (2005). "Focalization in 3D Video Games." In *Digital Proceedings of Future Play*,
11 13–15.
12
13 Pearce, C. (2005). *Towards a Game Theory of Game*. In N. Wardrip-Fruin & P. Harrigan (Eds.),
14 *First Person: New Media as Story, Performance, and Game*. Cambridge: MIT Press.
15
16 Ryan, M.-L. (1980). Fiction, non-factuals, and the principle of minimal departure. *Poetics*, 9(4),
17 403–422. doi:[http://dx.doi.org/10.1016/0304-422X\(80\)90030-3](http://dx.doi.org/10.1016/0304-422X(80)90030-3)
18
19 Ryan, M.-L. (1999). Immersion vs. Interactivity: Virtual Reality and Literary Theory. *SubStance*,
20 28.2, 110–137.
21
22 Ryan, M.-L. (2002). Beyond Myth and Metaphor: Narrative in Digital Media. *Poetics Today*,
23 23(4), 581–609. doi:10.1215/03335372-23-4-581
24
25 Ryan, M.-L. (2013). Transmedial Storytelling and Transfictionality. *Poetics Today*, 34(3), 361–
26 388. doi:10.1215/03335372-2325250
27
28
29 Sicart, M. (2011). Against Procedurality. *Game Studies*, 11(3). Retrieved from
30 http://gamestudies.org/1103/articles/sicart_ap
31
32 Simons, J. (2006). Narrative, Games, and Theory. *Game Studies*, 7(1). Retrieved from
33 <http://gamestudies.org/0701/articles/simons>
34
35 Stanzel, F. (1978). "Narrative situations in the Novel': Towards a 'Grammar of Fiction'."
36 *NOVEL: A Forum on Fiction*, Volume 11, 247-264.
37
38 Stanzel, F. (1981) "Teller-characters and reflector-characters in narrative theory." *Poetics Today*
39 Volume 2, 5-15.
40
41 Tanenbaum, K., & Tanenbaum, J. (2009). *Commitment to Meaning: A Reframing of Agency in*
42 *Games*. Digital Arts and Culture Conference: After Media - Embodiment and Context, 12-15
43 December. Irvine, California: University of California.
44
45 Tavinor, G. (2009). *The Art of Videogames*. Hoboken: Wiley-Blackwell.
46
47 Walton, K. (1990). *Mimesis as make-believe: On the foundations of the representational arts*.
48 Cambridge: Harvard University Press.
49
50
51 Games Referenced
52
53 2K Boston. (2007). *BioShock*. 2K Games: United States.
54
55 Bethesda Game Studios. (2011). *The Elder Scrolls V: Skyrim*. Bethesda Softworks: United
56 States.
57
58
59
60

- 1
2
3 BioWare. (2010). Mass Effect 2. Electronic Arts: United States.
4
5 BioWare. (2011). Dragon Age II. Electronic Arts: United States.
6
7 Crystal Dynamics. (2013). Tomb Raider. Square Enix: Japan.
8
9 Firaxis Games. (2005). Civilization IV. 2K Games: United States.
10
11 Firaxis Games. (2010). Civilization V. 2K Games: United States.
12
13 Firaxis Games. (2012). XCOM: Enemy Unknown. 2K Games: United States.
14
15 May, A., Kremers, R., Grainger, B. (2009). Euforia. Valve Corporation: United States.
16
17 Maxis. (2003). SimCity 4. Electronic Arts: United States.
18
19 Nintendo. (1981). Donkey Kong. Nintendo: Japan.
20
21 Obsidian Entertainment. (2010). Fallout: New Vegas. Bethesda Softworks: United States.
22
23 Pajitnov, Alexey. (1984). Tetris.
24
25 Personal Software. (1977). Zork.
26
27 Supergiant Games. (2011). Bastion. Warner Bros. Interactive Entertainment: United States.
28
29 Taito Corporation. (1978). Space Invaders. Japan: Taito.
30
31 Techland. (2013). Call of Juarez: Gunslinger. Ubisoft: France.
32
33 The Freeciv Project. (1996). Freeciv. The Freeciv Project.
34
35 Treyarch. (2008). Call of Duty: World at War. Activision: United States.
36
37 Ubisoft Montreal. (2012). Assassin's Creed III. Ubisoft: France.
38
39 Relic Entertainment. (2009). Dawn of War II. THQ: United States.
40
41 Remedy Entertainment. (2001). Max Payne. 3D Realms: United States.
42
43 Remedy Entertainment. (2010). Alan Wake. Microsoft Game Studios: United States.
44
45 Valve Corporation. (1998). Half-Life. Sierra Entertainment: United States.
46
47 Visceral Games. (2013). Dead Space 3. Electronic Arts: United States
48
49 Westwood Studios. (1995). Command & Conquer. Virgin Interactive: United Kingdom.
50
51
52
53
54
55
56
57
58
59
60



Figure 1 Fog of war in Freeciv (The Freeciv project, 1996). The two different shades of fog of war show two different types visibility.



28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53

Figure 2 The opening of Zork (Personal Software, 1977)



54
55
56
57
58
59
60

Figure 3 The mighty Dragonborn, dead from falling down a cliff in The Elder Scrolls V: Skyrim (Bethesda Game Studios, 2011)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60



Figure 4 Winning a duel that never happened in Call of Juarez: Gunslinger (Techland, 2013)

Peer Review

Tool	Meaning effect	Games
Fog of war	Uncertainty of the surroundings, identification with controlled characters	Dawn of War II, Command & Conquer, Freeciv
Tabula rasa	Identification with played character	Zork, Half-Life
Hidden motives	Re-evaluation of earlier actions	Assassin's Creed III
Emotional filter	Identification with character perspective, access to character emotions from an external perspective	Max Payne, Dead Space 3
Removal of control; change to an external perspective	Helplessness, disassociation	Bioshock, Skyrim
Change to your killer's perspective	Disassociation	Call of Duty: World at War
Change to internal perspective	Identification with played character	Mass Effect 2, Tomb Raider
Unreliable narration	Doubt about the narrated events	Call of Juarez, Dragon Age 2
Narration of interactive elements	Highlighting meaningful actions	Bastion
Selective simulation	Highlighting important systems, de-emphasizing other aspects	SimCity 4, Civilization IV & 5, Skyrim, Fallout: New Vegas

Table 1 Meaning-making tools summarized

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60



Fog of war in Freeciv (The Freeciv project, 1996). The two different shades of fog of war show two different types visibility.
192x177mm (100 x 100 DPI)



```
1
2
3
4
5
6
7 West of House Score: 0 Moves: 1
8
9
10
11 ZORK I: The Great Underground Empire
12 Copyright (c) 1981, 1982, 1983 Infocom, Inc. All rights reserved.
13 ZORK is a registered trademark of Infocom, Inc.
14 Revision 88 / Serial number 840726
15
16 West of House
17 You are standing in an open field west of a white house, with a boarded front
18 door.
19 There is a small mailbox here.
20
21 >open mailbox
22 Opening the small mailbox reveals a leaflet.
23
24 >
25
26
27
```

28 The opening of Zork (Personal Software, 1977)
29 229x141mm (72 x 72 DPI)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60



The mighty Dragonborn, dead from falling down a cliff in The Elder Scrolls V: Skyrim (Bethesda Game Studios, 2011)
677x381mm (72 x 72 DPI)

er Review



Winning a duel that never happened in Call of Juarez: Gunslinger (Techland, 2013)
677x381mm (72 x 72 DPI)

Tool	Meaning effect	Games
Fog of war	Uncertainty of the surroundings, identification with controlled characters	Dawn of War II, Command & Conquer, Freeciv
Tabula rasa	Identification with played character	Zork, Half-Life
Hidden motives	Re-evaluation of earlier actions	Assassin's Creed III
Emotional filter	Identification with character perspective, access to character emotions from an external perspective	Max Payne, Dead Space 3
Removal of control; change to an external perspective	Helplessness, disassociation	Bioshock, Skyrim
Change to your killer's perspective	Disassociation	Call of Duty: World at War
Change to internal perspective	Identification with played character	Mass Effect 2, Tomb Raider
Unreliable narration	Doubt about the narrated events	Call of Juarez, Dragon Age 2
Narration of interactive elements	Highlighting meaningful actions	Bastion
Selective simulation	Highlighting important systems, de-emphasizing other aspects	SimCity 4, Civilization IV & 5, Skyrim, Fallout: New Vegas

Table 1 Meaning-making tools summarized