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Revisiting Videogame Logic: Impossible Storyworlds in the Contemporary Hollywood Blockbuster

Image and Narrative in the Digital Era

In the final chapter of *The Language of New Media*, Lev Manovich asks: ‘How does computerization affect our very concept of moving images? Does it offer new possibilities for film language? Has it led to totally new forms of cinema?’ (2001, p. 287). In formulating these questions Manovich addresses the impact of the digital age upon both the film image and film narrative. He lists multiple ways filmmakers have responded to new media, including their assimilation of the ‘conventions of game narratives’ (2001, p. 288), where he cites innovative films including *Run, Lola, Run* (Tykwer, 1999) and *Sliding Doors* (Howitt, 1998).

Like Manovich, I have explored new media’s impact on both the film image and film narrative. In ‘Between Science Fact and Science Fiction’ (Buckland 1999) I concluded that digital compositing has transformed the filmic image by creating an optical-digital hybrid, a seamless blend of live action and digital animation. But my greater interest lies in the digital transformation of narrative. While Steven Spielberg’s *Jurassic Park* (1993), *Raiders of the Lost Ark* (1981) and other blockbusters are driven by narrative logic (see Buckland 2006), a small group of blockbusters incorporate more than narrative: we can discern a hybrid that combines narrative with a digital or videogame logic.

The following chapter presents a concise overview of my investigations into this hybrid narrative-videogame logic. The first section outlines narrative logic and videogame logic; the second returns to my earlier work on videogame logic in contemporary blockbusters in order to revise and extend it, synthesizing the results; and the third begins to reconceive videogame logic within the broader context of theories of imaginary worlds, fictional worlds and theories of unnatural and impossible storyworlds (in which the videogame logic makes the storyworld unnatural-impossible). At this juncture we encounter a terminological choice: 'Imaginary World' or 'Fictional World' or 'Storyworld'? 'Unnatural' or 'Impossible'? This is more than a terminological choice, as I shall explain later.

I have developed my own particular take on videogame logic by identifying their components from several sources: personal game playing (in the past), theories of videogames (Jesper Juul [2005] etc.), but, most importantly, from videogame manuals (such as *Fundamentals of Game Design* by Ernest Adams and Andrew Rollings, 2007). I used these sources to identify the components of videogame logic, plus the rule set that defines game play.

I do not focus on the sensory aspects of videogames or films or interface design; nor do I adopt a hermeneutical perspective to determine the wider cultural and philosophical significance of films influenced by videogame logic; nor do I consider genre conventions. Instead, I isolate and abstract from the surface of these hybrid blockbusters the internal logics of narrative and videogames, which involves determining the specific way they are entangled in each film. (I am reminded of Brian McHale's argument in *Postmodernist Fiction* [1987] that both modernist and postmodernist elements can co-exist in the same text.) I do not, therefore, offer a general discussion of the films or their meaning in contemporary society, or repeat what others have said about them, but instead present a narrowly focused study that identifies and establishes what role video game rules play in structuring these narrative films. I have already referred to this combination of logics as a 'hybrid'. Manovich uses the more specific term 'deep remixability': '*Today designers remix not only content from different media but also their fundamental techniques, working methods, and ways of representation and expression*' (2013, p. 268; emphasis in the original). He calls this remix a new *metalanguage*: 'A work produced in this new metalanguage can use all the techniques, or any subset of these techniques, that were previously unique to these different media' (2013, pp. 268-69).

The Fifth Element (1997), *Source Code* (2011), and *Inception* (2010) are hybrids or deep remixes where the rules from both narrative logic and video game logic become entangled. Medium specificity arguments are irrelevant, for these

rules are not tied to a specific material of expression – this is one reason I always refer to them as a logic. In the dialogue between Christian Metz and Emilio Garroni (1968), which Metz represents in the footnotes of his book *Language and Cinema* (1974), Garroni defined codes and logic in formalist terms, as autonomous from material of expression, whereas Metz developed a more nuanced argument claiming that some codes are specific and others non-specific, according to whether they are tied to the material of expression. In the following chapter I side with Garroni's assertion that codes and logic are separate from the material of expression. But this is just an aside. My main point is that a conventional narrative analysis of these hybrid films misses crucial dimensions of their structure, particularly the distinctive way narrative and video game logic become entangled. (The label 'videogame logic' designates a logic characteristic of but not unique to videogames.)

Other films are potentially hybrids or deep remixes of narrative and videogame logic, although each film remixes narrative and video game logics in specific ways, with some containing only minor elements of videogame logic, while others remix both logics equally: *The Lawnmower Man* (1992), *The Matrix* (1999), *Looper* (2012), *Edge of Tomorrow* (2014) *eXistenZ* (1999), and numerous Philip K Dick adaptations, including *Total Recall* (1990), *Minority Report* (2002), *A Scanner Darkly* (2006), and *The Adjustment Bureau* (2011).¹

It is easy to look at the content of these films and identify the rules of video game logic metaphorically: for example, *The Fifth Element's* cityscape metaphorically represents the film's different levels of play, or the scene in which the mangalores shoot down the spaceship carrying the fifth element metaphorically represents the game user's interactivity. Or in *Source Code*, Captain Colter Stevens (Jake Gyllenhaal) is the game player in his capsule and his avatar is the schoolteacher Sean Fentress on the train. (Although the film is more complex, because Colter is also duplicated: he is an avatar in his capsule linked to his real injured self-sealed in an airtight container; and the game world is also duplicated.) However, these films are fascinating *not* because their visuals or content can be read metaphorically as a videogame, but primarily because their visuals and content are organized according to a hybrid of narrative and videogame logic.

Narrative Logic

The sequence of actions in a small group of blockbusters is not simply constructed from an Aristotelian narrative logic of linear causality, for at certain

¹ Thomas Elsaesser (2014) prefers to discuss the Philip K Dick adaptations as mind games, rather than video games.

moments the ‘digital logic’ of video games (and other electronic texts) disrupts narrative logic. Narrative logic (or, more precisely, the psychologically-motivated cause-effect narrative logic) consists of distinct stages: the setup, complicating action, development, climax, exposition, and deadlines. There is no need to discuss this further, although in defining the complexity of puzzle films (to which videogame logic films are an overlapping subset), I never denied the continued presence of Aristotelian narrative logic – in other words, I did not say, as some critics have wrongly inferred (Kiss and Willemsen 2017, p. 21) that narrative logic was eliminated and replaced by another logic; instead, I argued that the narrative events become *entangled* with other narrative events and with other logics. After all, if one extracts narrative, videogame logic cannot become entangled in it, which is one of the key concepts I use to define puzzle films. My definition of puzzle films refers in part to the complex level of organization of narrative events, not the elimination of narrative.

The Rules of Videogame Logic

Video games rules are not contingent to (video) games but constitute their very core and their source of pleasure, for ludologists generally agree that ‘every game *is* its rules’ (David Parlett 2005). For Jesper Juul, game rules are instructions that define some actions in a game as meaningful and others as meaningless (2005, pp. 57-58). Rules set the limits or boundary of meaningful gameplay.²

Video games possess ‘an excess of visual and aural stimuli’ but also ‘the promise of reliable rules’ (Gottschalk 1995, p. 13).³ Video game rules are reliable in that they are systematic and unambiguous and are not constrained by the laws of the actual world (or by the conventions of mimeticism). Game play involves the mastering of these rules, that is, mastering the game’s logic. The player’s desire to attain mastery makes video games addictive, which at times can lead to the player’s total absorption into the game’s rules and environment. This absorption in turn may alter the player’s state of consciousness and lead to a momentary loss of self (see Fiske 1989, chapter 2). The most common video game rules are listed in Figure 1. But why these rules, specifically? In outlining the Russian Formalist method, Boris Eichenbaum wrote: ‘We posit specific principles and adhere to them insofar as the material justifies them. If

² Juul defines gameplay as ‘the way the game is actually played when the player tries to overcome its challenges [...] The gameplay is an interaction between the rules and the player’s attempt at playing the game as well as possible’ (2005, p. 56). In other words, the rules are part of the game’s underlying system, while gameplay is their enactment or use within a particular game.

³ Some of these rules and structures were first outlined in Buckland (2002) and later expanded and developed in Buckland (2014) and (2015).

the material demands their refinements or change, we change or refine them' (1965, p. 103). My formulation of this list of rules began inductively, and were dictated by the films under analysis and by the content of videogame manuals.

1. In-game tutorial level
2. Serialized repetition of actions (to accumulate points and master the rules)
3. Multiple levels of adventure
4. Space-time warps
5. Magical transformations and disguises
6. Immediate rewards and punishment (which act as feedback loops)
7. Pace
8. Interactivity
9. The game's environment can be open or closed, linear or nonlinear
10. The game needs to remain balanced
11. Some games consist of a foldback story structure
12. In role-playing games, players can usually choose or customize their avatar
13. The avatar possesses a series of resources and entities
14. Typical gaming skills a player needs are strategy and tactics
15. Most games (unintentionally) have an exploit
16. Many games include a sandbox mode.

Figure 1: Rules of Videogame Logic

An in-game tutorial level offers players a quick, partial, introductory experience of a game's design and, more generally, of gameplay (informing the player of the skills necessary to take on the game's challenges, how to use the controls and navigate the space, and so on). Films combining narrative logic and video game logic usually include a tutorial level. *The Matrix* (1999), for example, consists of tutorial levels, as Neo (Keanu Reeves) learns (and bends) the rules in the matrix, the film's game world.

Video games are organized around the serialized repetition of actions for several reasons, including the accumulation of points and the opportunity to master the rules of the game. Players are keen to refine their newly acquired gameplay competence by applying and testing it in similar but more difficult levels (which keeps the game in balance, as I describe ahead).

Space-time warps represent an alternative way to reach another level. They are the video game's equivalent of the hypertext link, for they enable the player to be immediately transported to an alternative space (and time), leading to multiple fragmented spaces, with immediate transportation between them.

The user's accumulation of points acts as a feedback loop to master the rules, since it represents a reward for good gameplay, and confers upon the user the sense that his or her competence is improving and the game is progressing. In similar fashion, the loss of points or a life acts as an immediate punishment for failing to master the rules. A repetition of this punishment leads to the user's premature death and an early end to the game, or a return to its beginning. Serialized repetition therefore involves repeating the same stages of the game – usually at a faster pace or moving up to another similar (but more difficult) level. The player controls the pacing via interaction, which confers upon the player the feeling of control – the manipulation of a character in a usually hostile digital environment. Of course, no interactivity exists in narrative films – they are fixed, predetermined texts. Nonetheless, fans participate outside the text by treating the film as a cult object.

In *Fundamentals of Game Design* (2007), game developers Ernest Adams and Andrew Rollings map out the various environments or layouts a game designer can adopt, from open layouts that allow for a player's unconstrained movement within a game, to closed layouts (usually interior spaces) (2007, pp. 405-410). The open layout has little linear structure, while closed spaces have single or multiple paths the player needs to follow.

Balance is a key game design concept (Adams and Rollings, 2007, chapter 11). As the game progresses, game play becomes easier, because the player gains game experience (if the game becomes too easy, the player becomes bored). To keep the game in balance and to avoid boredom, tasks and challenges must progressively become more difficult.

In the foldback story structure, 'the plot branches a number of times but eventually *folds back* to a single, inevitable event' (Adams and Rollings 2007, p. 200). In other words, several ways exist for reaching the same unavoidable endpoint. This story structure is usually combined with serialized repetition of actions, for a player within each repetition takes a different path to reach the same endpoint. The foldback story structure can also be defined in terms of game design. Games of emergence offer the player huge variations, improvisation, and open play in order to reach the endpoint, whereas games of progression are more linear and closed, thereby limiting the player's ability to stray from the predetermined path. Games of emergence therefore have a stronger foldback structure than games of progression. Because a narrative film is non-interactive in the videogame sense of the term, then it has no foldback structure at all, for the film's structure is pre-determined.

Game designers enable players to construct or modify their avatar, and also confer on it a series of resources.

A strategy involves constructing a game plan on the available knowledge of the rules and the opponents in the game. Because a game conceals information, the player relies on probability and skill to succeed (Adams and Rollings 2007, p. 298). A strategy is implemented through tactics, which carry out a strategy through various actions. Both strategy and tactics need a clear, measurable outcome, although tactics can try to subvert and find short cuts to the strategy, ultimately leading to exploits.

An exploit refers to an unexpected action the player uses to gain advantage within a game. The player usually exploits a weakness, glitch, or bug in the game's design.

Finally, the sandbox mode allows free play, or the player to explore the game without constraints. The player can experiment without devising a strategy or achieving a goal. In this mode, emergence is predominant while progression is insignificant.

A player's immersion in a game is therefore not simply a matter of a heightened stimulation generated by high quality graphics, audio, and animation, but is also – and, I would argue, primarily – a function of structure, the player's success at mastering these abstract rules.

Film Analyses

To date, I have analyzed three films using videogame logic: *The Fifth Element* (Luc Besson, 1997), *Inception* (Christopher Nolan, 2010), and *Source Code* (Duncan Jones, 2011) (Buckland 2002, 2014, 2015). Due to space restrictions I shall limit myself to the two recent films, and only focus on the elements of videogame logic they incorporate into their structure, avoiding for the moment the way videogame logic is entangled with narrative logic.

Source Code's Videogame Logic

The premise of the film is that Captain Colter Stevens, depicted in a capsule, is transferred to a train where he (or his avatar Sean Fentress) exercises typical gaming skills – strategy and tactics – to identify a bomber who plans to blow up the train. The film therefore replicates a role-playing game – it uses an avatar to represent the player (in this instance, Colter) within the game world.

The train carriage is a game environment to the extent that Colter enters it on eight occasions via an avatar, and he needs to perform in there a series of tasks. It is a closed space with limited freedom of movement. The film also replicates

interactivity, as we see Colter moving around the game space and interacting with it via his avatar.

But we need to go beyond the immediate similarities between the film and a video game. The whole of *Source Code* is based on the serialized repetition of action. With each repetition, a form of replay, Colter (via his avatar Sean) learns the rules of the game and becomes more proficient. He receives punishment when he fails (the bomb explodes) but also rewards (once he has identified the bomber, he can phone his father and also save Christina, a passenger on the train). The transition from capsule to train is not smooth, but is dramatic, and involves a space-time warp (or, at least, a space warp), since he travels between two radically different locations – the actual world and possible worlds. These transition shots show Colter's digital transformation as he is manipulated algorithmically, rendered or compiled by the source code technology into digital bits and sent to an alternate universe. The pace increases from one repetition to the next – the editing is more elliptical, and Colter becomes more frantic, because he is working against a deadline.

As with video games, he has several attempts at winning, and he dies in the game, which simply takes him back to the beginning. At the same time, he accumulates in-game experience, and chooses different options that the game opens up to him. But he has few options and few tasks: his strategy is to find the bomb and identify the bomber.

Colter learns to play the game by dying which, according to Adams and Rollings (2007, p. 372), is an old method of learning in the video game environment (this is also key to the film *Edge of Tomorrow* [Doug Liman, 2014], which is similarly structured via a serialized repetition of action). The bomb kills Colter several times, but at least this helps him locate it (since he remembers the direction of the blast). After the blast, he is thrown out of the game; when he returns, he goes back to his initial or default position – sitting opposite Christina.

Colter follows different 'paths' each time to reach the final endpoint – locating the bomb and identifying the bomber. The film therefore has a foldback structure. Colter perceives that the game becomes a little easier on subsequent attempts, because he builds up knowledge of in-game play (the game's perceived difficulty decreases). That is, Colter becomes more successful at implementing the strategy – his tactics improve as the game progresses. To keep the game in balance (a key concept for Adams and Rollings), the tasks must become harder. In *Source Code*, tasks are made more difficult as the film progresses (finding the bomb was quite easy, identifying the bomber much harder).

Colter then sets himself two further goals, which are not part of the game's strategy – to contact his father, and to save the people on the train. Both goals go against the rules of the game, and he is told that they are impossible to achieve, because the world of the train is in the past and therefore no longer exists: the train has already been destroyed, and the source code technology simply sends Colter to an alternate reality in order to identify the bomber (who plans to detonate a second larger bomb). Colter subverts the game's strategy with his own tactics in order to map out his own trajectory within the game.

Colter has very few resources, and therefore few entities. He has multiple lives, the ability to reenter the game once he is killed, but the film does not quantify this resource (although there is a strict deadline, since the bomber needs to be identified in order to halt his second bomb). Colter relies on his skills and tactics rather than specific resources.

Colter finds and uses an exploit, a glitch that shifts the game from a limited rule-following activity to a free play sandbox mode, where he can explore the game world without remaining confined in its closed space or without following any specific rules or game plan. (The way the exploit works is obscure.) This exploit and move into the free play game mode enables Colter to save everyone on the train from the terrorist attack, and to construct a stable future for himself and Christina – at least in an alternate, parallel universe where he exists only as his imaginary avatar.

Inception's Videogame Logic

Inception's main gameplay centres on the invasion and inception of Robert Fischer's (Cillian Murphy) mind, to encourage him to break up his father's company. The film is structured around the following rules of video game logic: two in-game tutorials (the opening scenes showing Dom Cobb's team attempting to steal secrets from Saito's mind introduces the game rules to film spectators by showing them how the game is played, and Ariadne [Ellen Page] enters a dream space with Cobb [Leonardo DiCaprio], where he spells out the game rules to her while she learns to manipulate the environment); the serialized repetition of action (this film is structured around a nested or embedded repetition as the characters move to different dream levels, with each move constituting a space warp); immediate punishment for not mastering the rules of the game during gameplay (in which characters either wake up or enter limbo); an emphasis on strategy and tactics (and the need to change strategy quickly, especially when unexpected problems occur – which happen on all levels of the film); a successful balancing of the game and an increase in its pace, in which

tasks become harder and the risks higher as the game progresses; an emphasis on constructing the game's environment (designed by Ariadne as labyrinths, with a mix of open and closed spaces); plus a significant emphasis conferred on the limbo level, *Inception's* equivalent of the video game's sandbox mode. In addition, there is a game resource (Somnacin), a small use of disguises, and one use of an exploit.

Unnatural/Impossible Fictional Worlds/Storyworlds/Imaginary Worlds

The films discussed in the previous section create unusual fictional worlds, not just an unusually structured sequence of narrative events. The next stage in studying these hybrid films involves moving from the syntactic to the semantic level, where 'reference' is introduced into the theory, but reference to an imaginary or possible world, not the actual world.

Storyworld is predominately a cognitive concept, while fictional world is a semantic concept. In his book *Building Imaginary Worlds* (2012), Mark Wolf prefers what he calls the broader, less theoretical and more neutral term 'imaginary world'. A story or fictional world is an imagined totality that is only partly manifest as narrative events in a text. In chapter 3 Wolf outlines the non-narrative parameters of these worlds, ranging from their specific timelines (their entire network of past and future events), their spatial geography, plus their own symbolic systems of kinship, language, mythology and moral values, all of which need to be designed. In the hybrid films under discussion, the videogame logic pushes the films beyond mimeticism towards an unnatural or impossible world, depending in each instance on the combination of videogame rules entangled with the film's narrative logic. (The videogame rules can momentarily or permanently create unnatural or impossible storyworlds.)

Impossible/Unnatural

Storyworlds create an imaginary world distinct from the actual world. Marie Laure-Ryan's 'principle of minimal departure' states that the starting point or default stance towards storyworlds is to comprehend them in the same way as the actual world until instructed otherwise (1991, p. 51). Until instructed otherwise: this phrase is fundamental, for storyworlds do not need to conform to the actual world and to literary realism in all its forms (naturalism, mimeticism, verisimilitude). In 'Impossible Storyworlds – and What to Do with Them', Jan Alber argued that:

Many narratives confront us with bizarre storyworlds which are governed by principles that have very little to do with the real world around us. [...] many narrative texts teem with unnatural (i.e., physically or logically impossible) scenarios that take us to the limits of human cognition. (2009, p. 79)

For Alber physical and logical impossibility are key, while other narratologists such as Brian Richardson develop a broader definition of the unnatural using implausibility (involving incongruous/absurd activities) rather than impossibility:

An unnatural narrative is one that contains significant antimimetic events, characters, settings, or frames. By *antimimetic*, I mean representations that contravene the presuppositions of nonfictional narratives, violate mimetic conventions and the practices of realism, and defy the conventions of existing, established genres. (2015, p. 3)

Despite these different definitions, what is common to the concept of the unnatural/impossible/implausible storyworld is its radical departure from the genre conventions of realism (psychological or physical), mimesis and verisimilitude.

In 2016 I employed the theory of unnatural and impossible storyworlds to analyze the ontology of the worlds in Michel Gondry's music videos, focusing on his 1997 video 'Bachelorette' which gradually builds up a storyworld structured around unnatural and impossible events, which are manifest on screen via simultaneity, repetition, magnification, reduction, duplication, a loop, and embedded narration, which are combined in the master trope of *mise en abyme*, a recursive form of embedded duplication that opens up a non-linear space in a text, an encased world that repeats the storyworld on a smaller scale. In other words, it creates worlds within worlds.

This leads to my final observation about these hybrid films: within a mimetic framework, the construction of an unnatural fictional world is foregrounded. In other words, world building becomes a theme or subject matter of these films, and characters become aware that the world they inhabit does not conform to the actual world but is a manufactured world. Because world building becomes a theme, it means the constructed world has a boundary which the characters enter and exit. The constructed worlds are contained or embedded within the mimetically-defined film world. This is where the in-game tutorial becomes crucial in films such as *The Matrix*, *Source Code*, and *Inception*: the new character (and, of course, the film spectator) is taught the unnatural rules of the fictional world. The new character becomes a plot device to introduce the process of constructing storyworlds, and the unnatural rules of that storyworld.

These observations can be developed further by using Stefan Iversen's notion of unnatural fictional minds (2012), to complement the study of unnatural fictional worlds. Also, it is significant to note that Mark Wolf devotes a chapter of his book to this reflexive process of world building (chapter 5: 'Subcreation within Subcreated Worlds').

Conclusion

This chapter represents an intermediary stage of research. More work needs to be carried out. I plan to explore further the dynamic entanglement of videogame logic and narrative logic, examine in more depth the ontological status of the resulting unnatural or impossible storyworlds these logics create, to draw upon Mark Wolf's categories of world structures and infrastructures, and develop a theory of the unnatural characters and their minds who inhabit these storyworlds.

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Abstract

This paper demonstrates how two logics (narrative and videogame) function in a select number of contemporary blockbuster films. The paper is divided into three sections: The first outlines narrative and videogame logics; the second presents examples from *Inception* (Christopher Nolan, 2010) and *Source Code* (Duncan Jones, 2011) to demonstrate how videogame logic structures the events in each film; and the third discusses how these logics create specific storyworlds (imaginary worlds distinct from the actual world) that are unnatural and/or impossible.

Key words: storyworld, blockbuster, Christopher Nolan, Duncan Jones, narrative theory, videogames