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Published in:
Games and Culture

DOI:
10.1177/1555412017700601

Publication date:
2017

Document version
Publisher's PDF, also known as Version of record

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Citation for pulished version (APA):
Larsen, L. J. (2017). Play and Gameful Movies: Ludification of Modern Cinema. Games and Culture. DOI: 10.1177/1555412017700601

Article

Games and Culture
1-23

DOI: 10.1177/1555412017700601
journals.sagepub.com/home/gac

Play and Gameful Movies: The Ludification of Modern Cinema

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Abstract

The aim of this article is to advance a conceptual framework of ludification by separating out current thinking to incorporate two noninteractive cinematic areas—playful aesthetics and gameful narratives. Ludification is usually associated with the construction of ludic identities and cultural practices in the usage of new media or with application of game elements in nongame contexts known as gamification. This overlooks, on the one hand, the influence of cinematic aesthetics on computer games and, on the other hand, the extent to which play aspects and computer game elements imprint and transform the narrative compositional structures of modern cinema. The present study's investigation will present an expanded conceptualization of ludification, classified by playfulness and gamefulness through interactive/noninteractive properties, aesthetic forms of expressions, and narrative compositions under the respective headings of gamification and cinemafication. These efforts unearth five traits of computer game influences on contemporary cinema presented under the headings, (1) play worlds, (2) ludified quests, (3) controller and interfaces, (4) play experience, and (5) game structure.

Keywords

ludification, play, computer game, interactivity, aesthetics, narrative, gamification, cinemafication

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Introduction

Ludification is a relatively recent and elusive term associated with research into aspects of play and how computer games have proliferated and have become woven into the fabric of modern culture. Exposing and disentangling such intertwined influences is not without its difficulties. In making the attempt, it is important that the point of departure should be as clear as possible. The current exploration undertakes this task with the aim of branching out and creating a conceptual basis to discuss how computer games are influenced by cinema and especially how computer games influence the narrative structure of modern cinema. Such an endeavor can be seen as an attempt to unpack remediating (Bolter & Grusin, 2000) tie-ins between the mainstream film and game industry (Shaviro, 2010). It should be borne in mind that the film and game industries are drivers of ludification and that the existing synergies between them can be regarded as being subject to the logic of ludification.

Even though the starting point is relatively straightforward, further clarification of the current perception of ludification is needed to fully appreciate the conceptual framework presented here. The following will sketch out four influential ways of understanding ludification.

The first addresses ludification from a vantage point focusing on the emergence of playful identities that are associated with new cultural practices (Raessens, 2006), which in turn are shaped by how new media is being used and how such usage reconfigures, reshapes, and transforms media and identity (Frissen, Lammes, De Lange, De Mul, & Raessens, 2015). Such an approach expresses a change of direction in research into media and game studies following a cultural shift "from a predominantly narrative to a predominantly ludic ontology" (Raessens, 2006, p. 54). The impetus to reveal this shift has come from a growing research interest in the role of play in culture (Raessens, 2014).

Seen through this analytical lens of play is ludification understood as an aspect of media convergence (Jenkins, 2006) and conceptualized as the flow of content across numerous media platforms with an emerging participatory culture, where users playfully engage and traverse spread out content to make meaningful connections (Jenkins, Ford, & Green, 2013; Kerr, Kücklich, & Brereton, 2006). Investigations of ludic identity construction in new media practices have been the predominant driver in conceptualizations of ludification.

The second regards ludification as gamification (Kirkpatrick, 2015). Like ludification, gamification is a new and often hotly debated term (Bogost, 2011, 2014), whose tentative and porous definition highlights the "use of game design elements in non-game contexts" (Deterding, Dixon, Khaled, & Nacke, 2011, para. 1). Gamification is associated with similar and even less well-defined terms such as "gameful" (McGonigal, 2014), "gamified," and "gamefulness," which often appear in conjunction with "design" in phrases such as "gameful design," "gamified design," or as "applied game" or "applied game design" (Schmidt, Emmerich, & Schmidt, 2015), to mention just a few conceptual compositions from the tip of the gamification iceberg.

Currently, consensus focuses on gamification as applied ludification targeting accelerated learning, enhanced engagement, and motivation through interaction with game-like features outside the realm of games (Huotari & Hamari, 2011; Walz & Deterding, 2014).

The third and perhaps less well-known view of ludification has to do with cinematic aesthetics influencing the visual shape or rhetoric of computer games (Larsen, 2016; Friedman, 2015; King & Krzywinska, 2002; Stork, 2013). Such an approach investigates visual compositional formations of cinema and tracks them across media boundaries. In the present context, this extended influence is gathered together under the heading of cinemafication and reflects the ways in which cinematic techniques advance visual drama and elevate suspense in computer games without spilling over into related areas such as interactive storytelling or computer game adaptations of movies. This view is loosely connected with transmedial worlds (Jenkins, 2006; Klastrup & Tosca, 2004; Schell, 2008) and with reflections on movies that thematically use games to frame their narrative composition such as *Wreck-It Ralph* (2012), *Gamer* (2009) or *Tron* (1982), and *Tron: Legacy* (2010) to mention just a few. Identifying the borderlines between those perspectives is a close and often contextual call.

The fourth way of conceptualizing ludification is oriented toward computer games influencing cinematic narratives (Grieb, 2002; Kinder, 2002). The focus here is the question of how and to what extent play aspects and computer game elements influence the narrative composition of modern cinema. Such a perspective traces patterns across boundaries of interactive and noninteractive media. This calls for investigative caution to isolate clear examples of how computer game logic is embedded in noninteractive cinematic narratives. It is vital to understand that computer game logic in the present context is understood from a ludological (Aarseth, 2003; Juul, 2005; Mäyrä, 2012) perspective and *not* from the dispersed perspective of gamification (Walz & Deterding, 2014), where narrowly selected aspects of game logic can be traced in the logic of movie production or inside the movies themselves.

The perspectives on ludification are often hazy, which is why the presented framework should be read as an attempt to iron out differences in an effort to clarify conceptual borders even though they can be difficult to draw.

To achieve this ambition, especially on how computer game logic penetrates cinematic narratives, five areas have been identified and outlined under the following headings: (1) *play worlds*, (2) *ludified quests*, (3) *controller and interfaces*, (4) *play experience*, and (5) *game structures*.

The composition of this article will clarify in greater detail the four ways of understanding ludification in order to sketch out a conceptual framework of ludification regarded from a predominantly ludological perspective. The main goal is to present a ramified framework containing gamification on one side and cinemafication on the other, each with relevant subcategories under the main heading of ludification.

Table 1. Conceptual framework of ludification.

Ludification			
Gamification		Cinemafication	
Culture and identity (interactive)	Applicative (applied ludification)	Playful aesthetics (influence of movie aesthetics on computer game expression) (non-interactive)	Gameful Narratives (Computer game logic in movies' narrative composition) (non-interactive)
Play/Playfulness (Play influence on identity, media usage and creation)	Game/Gameness (Game influence on non-game contexts)		
Identity/Culture	Object	Expression	Composition

The overall research goal is twofold. The first is to map out a conceptual landscape to clarify the current understanding of aspects of play and game and their influence on culture, identity creation, and gamified applications. The second and most important is to provide an outline of cinemafication by unearthing ways in which (1) play aspects *are influenced* by cinematic aesthetics and (2) how computer game logic *influences* the structure of selected cinematic narrative compositions. The aim is to advance an expanded framework for the elusive concept of ludification (see Table 1).

Ludification: Play and Playfulness

Ludification as a cultural and social logic at the intersection between play and game reveals how games act as sites for cultural and social production (Lindtner & Dourish, 2011). In this way, it places play and games at the heart of a dispersed ecology of practice, which extends from local identity creation to global cultural production and usage as well as general imagination and manifestation of imagery. This view of ludification bridges a lacuna in Huizinga's understanding and definition of play. Huizinga claims that play acts as an organizing principle of culture when he writes that culture "arises *in* and *as* play, and never leaves it" (Huizinga, 1938/2014, p. 173). This places play at the heart of culture. Yet his description of its formal characteristics paints a less clear picture, in particular when he highlights the separation of play and work, drawing distinctions between the purposeless and the purposeful or, perhaps most noteworthy, between the unproductive and the productive. Huizinga writes of play that

> . . . we might call it a free activity standing quite consciously outside "ordinary" life as being "not serious", but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules

> and in an orderly manner. It promotes the formation of social groupings which intend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means. (p. 13)

The essence of this quotation is echoed by Caillois (1958/2001), when he describes play as "pure waste" (p. 5).

Huizinga and Caillois's epistemology of play as unproductive and wasteful activities rests on the traditional Protestant distinction between play and work (Weber, 1958). This is highlighted by Stevens (1978), when he points out that Huizinga's influential definition of play stresses the separation of play and work by placing play outside ordinary life, adhering to its own rules and carrying no material interest. An activity deprived of seriousness although it has the ability to intensely absorb its participants.

According to Stevens (1978), Huizinga and Caillois's distinction between play as being unproductive and useless and work as productive and useful is "a false dichotomy" (p. 17). Both Huizinga and Caillois confuse *formal* characteristics of play with the *experience* of being *in* play. Stevens argues that definitions of play that include such polarity blur and confuse our understanding of play, or, as he correctly writes, "we are taking the behavior for the experiencing of that behavior" (Stevens, 1978, p. 21). He proposes untangling the "rut" (p. 21) by distinguishing between "play form" and "play experience" (p. 20). Such a distinction is beneficial since it separates the process of experiencing being *in* play (Gadamer, 1960/2013) from a formal description (Larsen, 2015) of the structure of play seen and mapped out from a bird's-eye perspective.

The shift in perspective from external to internal workings of play experience opens up a novel approach to play, especially if it is considered as taking place during work activities (Stevens, 1978). This in turn allows play to be seen as a particular and pleasurable attitude or sentiment from some kind of ongoing activity, which presents play as "*a mode of human experience* [. . .] a way of engaging the world whatever one is doing" (Malaby, 2007, p. 100).

This way of perceiving play has three beneficial implications. It positions play (1) as a mode of experiencing, (2) as a particular way of engaging with the world, and (3) as a potentiality in all kinds of places and/or activities.

In a more recent article, Malaby (2009) refines his stance on play by addressing it as *disposition* "characterized by a readiness to improvise in the face of an ever-changing world that admits of no transcendently ordered account" (Malaby, 2009, p. 206). Malaby's formulation couples two aspects.

Firstly, it prioritizes play as a specific stance toward any given ordered activity or practice. Such a conceptualization of play as a predominantly playful attitude is similar to Sicart's (2014) description of play. The difference between them is that Sicart understands play as an appropriative dynamic that (1) "takes over" any unfolding activity, (2) takes place contextually as a result of negotiation, (3) is tied to a specific situation, and (4) involves particular themes such

as balancing tensions between order and chaos, including the pleasures of destruction.

Secondly, Malaby (2009) stresses that play involves navigating the indeterminateness of an ever-changing world (Malaby, 2009), or, when applied to the realm of games, involves handling randomness in input and outcomes (Burgun, 2014), leading to uncertainty either in player behavior or in outcomes (Caillois, 1958/2001; Costikyan, 2013; Elias, Garfield, & Gutschera, 2012) in game systems.

The larger point Malaby attempts to drive home becomes even clearer when he abandons the traditional dichotomy between work and play. Here games become sites for establishing new cultural forms specific to the historic moment in which they unfold. Malaby (2009) writes,

When the work/play distinction is left behind, we see instead in ludic practice a more useful contrast between a cultural *form* (a game-like activity, no matter how playfully engaged in) and a *mode* of cultural experience (a playful disposition towards activities no matter how game-like). (Malaby, 2009, p. 209)

Malaby's anthropological positioning of play resembles contemporary media and game studies when stressing the absence of strict boundaries "between play and everyday practices" (Roig, Cornelio, Ardèvol, Alsina, & Pagès, 2009, p. 93).

Although scholars see more or less eye to eye on the ludic presence in contemporary culture, few seem to agree on the ontology of a playful disposition. This raises questions of how to understand such a playful disposition and the layering that it consists of. Trammell and Gilbert (2014) try to address the issue by dissecting play at the intersection of play as form and play as experience, highlighting play as divided between "schemes," "latitude," and "slack." Schemes characterized play through the appearance of its objects in expected places and through a focus on games and their "affordances, mechanics, organisation and industrial implications" (p. 396). Latitude is a blurring of "the notion of what play is and where it happens" (p. 396), thereby drawing attention to game spaces outside traditional boundaries and loosening the perception of how play operates in popular culture. Finally slack reflects ways in which "play is part of everyday life" (p. 396).

Trammell and Gilbert's analysis of play experience derives from a particular approach to Huizinga's understanding of play, namely, how play entails both freedom from restriction and resistance toward conformity. Trammell and Gilbert describe play(fulness) as oscillating between play and game activities in everyday practices of media consumption and production.

Grimes and Feenberg (2009) on the other hand present a less innocent and more critical perspective of play, playfulness, and ludification. Even though they focus on play in relation to massive multiplayer online games (MMOGs), their approach is highly relevant in the current context. This is especially true of their perception of ludification as a form of social rationalization that takes place at the intersection of play experience and game systems. Their perspective includes a reciprocal position that outlines how play practices "themselves come to reproduce the larger processes of rationalization at work within modern capitalist societies" (p. 105).

Rationalization here should be understood as a compound of three types of play practice taking place in MMOGs, namely, "(1) exchange of equivalents, (2) classification and application of rules, and (3) optimization of effort and calculation of result" (p. 106). This abstract description follows Silverman and Simon's (2009) player-centric description of power player behavior in MMOGs. The correspondence between Silverman and Simon and Grimes and Feenberg is in their shared conception of play as an act or activity of "machination" and sublimation of submission shaped by the game system. Unlike Silverman and Simon, Grimes and Feenberg regard players as engaged in a struggle with game corporations over game environments and content, a perspective that emphasizes the players production of game content.

Grimes and Feenberg provide a view of rationalized play on two levels. First, they consider ways in which games are addressed as a rational practice and, second, they take into account "the social, cultural, and political conditions within which a game is appropriated and contested by its players" (Grimes & Feenberg, 2009, p. 107). As in Stevens and Malaby, these two levels transgress the work/play dichotomy in pointing to the rationalization process *and* the different domains in which play unfolds. It is important to keep in mind that Grimes and Feenberg conceptualize games as a predetermined set of possibilities and constraints that together create "a form of social order" (p. 108). It is possibly even more important that "it is not that social order recapitulates certain features of games, but rather that games have themselves become forms of social order" (p. 109). These quotations take into account the reciprocal relationship between configurations of consumption and formations of produced game content. They stress that play, playfulness, and ludification unfold in an intricate dynamic between the players' struggle to appropriate game environments and the corporate commodification and instrumentalization of play. It can be argued that this dynamic unfolds in a continuum ranging at the one end from a "play mode" close to Malaby's description of play as a disposition and on the other end to a specialized stance required to play a particular game conceptualized as "game mode" much in line with the arguments of Silverman and Simon.

Within this framework, Grimes and Feenberg flesh out how play is transformed when moving from play mode to game mode. Play passes from an undifferentiated playful state (play mode) to a rationalized mental configuration adjusted to "fit" the game system (game mode). This is a transformative process, which takes place through a series of differentiations (Walter, 2003, 2011). Such a perspective is close to Caillois's continuum ranging from paidia/impulsive/play mode to ludus/discipline/game mode, the two poles being understood, respectively, as "diversion, turbulence, free improvisation, and carefree gaiety [and] ever greater amount of effort, patience, skill, or ingenuity" (Caillois, 1958/2001, p. 13).

The difference between Caillois and Grimes and Feenberg is that the latter draw attention to the rationalizing process through the series of transformations and not through increasing discipline. It is equally important that Grimes and Feenberg do not see the rationalization process as mutual exclusion of either playing or gaming. Instead playing a game should be understood as a "dual process" (Grimes &

Feenberg, 2009, p. 111), involving the delicate balancing acts of playing *and* gaming simultaneously.

In that way, Grimes and Feenberg's play mode and game mode resemble Malaby's "cultural form" and "mode of cultural experience," which could be said to unfold in an overlapping continuum that keeps both aspects open for ongoing configurations.

Yet Grimes and Feenberg (2009) go one step further. They carve out ways in which the process of social rationalization passes from play mode to game mode. It does so by virtue of five properties:

> (a) reflexivity (play becomes increasingly self-referential), (b) boundedness (play is a differentiated activity), (c) rule governedness (play is transformed into a game by specific rules), (d) precision (play is standardized enabling measurement/optimization), and (e) playfulness (play as undifferentiated activity in everyday communicative practices). (p. 112)

These five properties constitute the elements in the process of ludification as transformations from undifferentiated to differentiated activities that rely upon optimization, discipline, and excluded self-referential realities outside everyday life. Together, they facilitate formations of new manifestations of social order while at the same time creating opportunities for user resistance and innovation. These are all aspects that influence this article's perception of playful aesthetics and gameful narratives.

Ludification: Game and Gamefulness

Gamification understood as an aspect of ludification is less concerned with tracing ludified cultural traits and identities and more concerned with applying game elements in everyday activities outside the realm of games. This means that gamification is particularly interested in game-like traits of interactive systems. Of special interest is the question of how to use game elements to motivate and engage users in some manner or degree to enhance or accelerate involvement or performance (Bogost, 2011, 2014; Seaborn & Fels, 2015).

Buried within such broad descriptions are a number of questions addressing different aspects of gamification: (1) How are interactive systems and there properties understood? (2) Is the gamified system comparative, evaluating or surveying? (3) To which domains does the system belong? (education, online communities, social networks, health, sustainability, research, finance and marketing to mention just a few; Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011; Huotari & Hamari, 2011), (4) What is the epistemology of motivation? (Csikszentmihalyi, 2000), (5) How are rewarding game design elements conceived? (e.g., badges, leader boards, levels, resources, clear goals, and challenges; Deterding, Dixon, et al., 2011), (6) How is the experience of engaging with the system described? (Hunicke, Leblanc, &

Zubek, 2004), and (7) Perhaps most notably, how are formal game elements understood?

Many of these questions are under debate and have yet to be answered unequivocally. Of particular interest in the present instance are the questions related to game properties, namely, its *reward system*, *interactivity*, and *player experiences*, since they address key elements of gamification *and* clearly set gamification apart from playful identity creation and new media practices.

Gamification is heavily concerned with *reward systems* as motivational drivers for behavioral changes. Yet almost all research on gamification refrains from explaining how a reward system should or could be designed beyond giving the player a badge for a job well done. But details about how to design a reward system have already been identified and explained as clearly demonstrated by Hopson (2001). He outlines how reward systems can be designed through tasks/assignments/quests with either/or fixed and variable ratios and intervals (Larsen, 2012). When translated into the reality of practical application, the reward system sounds something like this: Game ×Presents the player with a quest of killing × Orcs or solving × Math assignments (Larsen, 2012). In both cases, rewards are distributed through a fixed ratio. Such a scenario can be coupled with a variable ratio that ensures rewards after each player action. Every time the player kills an orc or solves a math problem, a reward presents itself. This model can be expanded by fixed or variable time released rewards so that the player receives rewards either after a fixed or a random time period. This is called layering rewards according to fixed and variable ratios. Layered rewards are heavily invoked in MMOGs, including *World of Warcraft* (2004). Such a system creates correlation between object meaning, game progression, and new rewards to ensure player motivation and engagement. This description is far from exhaustive, but it demonstrates how particularities of one of the key elements in gamification are seldom satisfactory described even though it has been brought into focus and analyzed.

Another example of lack of clarity relates to *interactivity*, which, while often referred to as a key component of computer games, is rarely explained. Yet Crawford (2003) has illustrated interactivity as being similar to having a conversation with another human being. His point is that interactivity depends on a fluent exchange between player input and system response or, as Crawford writes when defining interactivity, it is "a cyclic process in which two active agents alternately (and metaphorically) listen, think, and speak" (p. 76). The challenge of interactivity is responsiveness. The system should ideally respond "as if" or in just as "lively" a way as a human counterpart. This presents a difficult task even for triple A game producers. This fluent dialogue between player input and system response is overlooked or neglected in relation to gamification. This formal description of interactivity says little about player experience or how players or users *feel* when interacting with a particular game or gamified system. This article claims that interactivity is associated with how a particular system *feels* when engaged with. This feel is often referred to as *game feel* and, like reward systems and interactivity, it has been addressed in game studies.

Swink (2009) has defined game feel as "real-time control of virtual objects in a simulated space, with interactions emphasized by polish" (p. 6). The definition needs a bit of unpacking. Real-time control of virtual objects more or less covers interactivity involved in handling objects and experiencing how they respond (the input–output cycle mentioned above). Simulated space concerns the virtual space and how objects behave, while polish points to particular ways of experiencing the digital objects. Polish is also called juice (Jonasson & Purho, 2012). Generally speaking, polish/juice directs the players' experience of digital objects. Are they perceived as heavy or light, easy or difficult to break or shatter, or are perceived as alive or dead? Sketching out complexities of reward systems, interactivity, and player experience points to a further need for clarification in relation to both the applicative and conceptual dimension of gamification.

In spite of design and conceptual shortcomings offers gamification valuable insights. Firstly, it indicates how playfulness and gamefulness operate in the ludic turn. Secondly, it addresses the ongoing efforts of gamifying existing activities. Thirdly, it manifests itself on an epistemic level as the ideological driving force behind the ongoing applicative and ludic transformations. Fourthly, both the applicative and the epistemic level deliver fuel to ludic identity and to culture creation, since they take place through playful applications and gamified systems and thereby intertwining gamification and ludification.

Together, gamification and ludification could be said to act in a circular and recursive formation accelerating and expanding the ludic presence of game-like traits outside the realm of games engaged with playful attitudes.

Cinemafication: Playful Aesthetics

Ludification understood and investigated as the impact of cinematic aesthetics on computer game expressions have until now been sparsely addressed, although such influences are plentiful (King & Krzywinska, 2006; Kirkpatrick, 2011; Stork, 2013). One way of addressing cinematic significance is by outlining the comprehensive catalogue of computer games that incorporate narrative compositions and storytelling (*Façade*, 2005; *Mass Effect 1-3*, 2007–2012; *Skyrim*, 2011; *The Stanley Parable*, 2013) in their game structure. These attempts demonstrate how techniques and themes from contemporary cinema are being "transported and "converted" to fit the interactive framework of computer games, even though such efforts are often challenged, most notably by the controversy between "ludologists" and "narrativists" (Costikyan, 2007; Crawford, 2003; Eskelinen, 2001; Frasca, 2003; Juul, 2005; Kücklich, 2006; Mukherjee, 2015), discussing whether games should be understood in their own right (Aarseth, 2003) or as expressions of narrative configurations (Ryan, 2006).

The present discussion is less concerned with narrative in computer games than with drawing parallels between selected and exemplary aesthetic cinematic

techniques and exploring how computer games incorporate them. In this, I am following an early and important venture presented by King and Krzywinska (2002) in which "games-in-the-light-of-cinema" (p. 2) was investigated.

In the present context, interfaces between cinema and computer games are "read" using Fiske's (1993) interpretation of Kristeva's (1980) conceptualization of intertextuality. In particular, I use what Fiske coined "vertical intertextuality" (Fiske, 1993, p. 117), which traces the dialogical synergies across different media highlighting how meanings and, in this case, how aesthetic techniques are shaped by other "texts"/media.

A vibrant case of vertical intertextuality can be found in the *Max Payne* game series (1-3; *Remedy Entertainment*, 2001–2003; *Rockstar Studies*, 2012). Three playful influences worth mentioning are *cut-scenes*, *voice-over*, and *game mechanics*, exemplified by the *Max Payne* series creation of *bullet time*.

Firstly, *cut-scenes* are digitalized animated sequences that often interrupt the flow of play to inform players of upcoming conflicts or challenges (Costikyan, 2002; Howells, 2002; Tong & Tan, 2002). It is a well-known technique. Secondly, *voice-over* is a film noir technique that has found its way into computer games. It creates ambience and builds drama by enhancing suspense. The third and perhaps most notable cinematic imprint can be traced to *game mechanics* (Burgun, 2015; Sicart, 2008). In the *Max Payne* series, the famous game mechanic is called bullet time. When it is activated, time is slowed down along with enhanced visual cues and effects already described as polish (Swink, 2009). Bullet time is, in essence, a game mechanic distilled from the technique of slow motion—except for the fact that Max/the player can take aim in real time giving Max/the player an edge over approaching enemies. Bullet time is directly tied to cinematic techniques in movies such as *The Matrix* (1999) or *X-Men: Days of Future Past* (2014), where scenes are slowed down to a near standstill.

The bullet time resembles the reverse motion game mechanic in Jonathan Blow's indie game *Braid* (2008), where the player can move the protagonist, Tim, backward in motion to solve otherwise insolvable puzzles. The reverse motion game mechanic is a digital translation of movie scenes using reverse motion as in *Funny Games* (2007) or Cocteau's movies *Beauty and the Beast* (1946) and *Testament of Orpheus* (1960). Bullet time and the reverse motion mechanic both express playful conversions of movie aesthetics. Bullet time and the reverse motion mechanic are examples of playful aesthetics juggling with temporality, here also being used existentially to reverse the flow of time and escape death.

Cut-scenes, voice-over, and game mechanics such as bullet time and *reverse motion* display an organization of the audio-visual material (Mulvey, 2009) inspired by mainstream movies. Together, they outline playful aesthetics as multimodal (Gee, 2015) remediation (Bolter & Grusin, 2000) of cinematic aesthetics, and in doing so, they exemplify one aspect of what this article has termed the cinemafication of computer games under the heading of ludification.

Cinemafication: Gameful Narratives

The second aspect of cinemafication addresses a research area that until now has attracted little attention. It concerns how computer game logic influences cinematic narrative compositions.

The work that has been done has focused primarily on narrative convergence between the cinema and computer games (Kinder, 2002). Less attention has been devoted to how cinema employs game structures in its narrative compositions. One early example of cinema applying game structures is the movie *Lola Run Lola* (1998), where the narrative unfolds as a puzzle "game." The main character, Lola, strives to successfully arrange a series of narrative events into a coherent whole with a positive outcome not only for herself but also for her boyfriend and several other characters involved in the story. After three repetitions (Grieb, 2002) or respawns, she is finally successful in placing the narrative sequence in the correct order and thereby "solving" the story?

The present context follows such an approach and identifies how computer games influence mainstream cinema on two levels, a semantic and a structural. The sematic level uses games to frame the narrative as in the abovementioned movies *Wreck-It Ralph* (2012), *Gamer* (2009), *Tron* (1982), and *Tron: Legacy* (2010), to mention just a few. These movies more or less construct a fictional dyad distinguishing between events taking place inside or outside a game or game-like world. Generally speaking, the fictional dyad plays with the fictional content by intertwining the stratification of diegetic levels of the narrated events in the story world. Less explicit examples are cinematic expressions using games to propel the narrative as in the cases of using tarot cards to build drama as in *Cleo From 5 to 7* (1962) and *Live and Let Die* (1973) or using the game of chess as narrative anchor as is the case in the *The Seventh Seal* (1953) or less explicitly in *Blade Runner* (1982) just to mention a few cases, where chess plays a part in the narrative composition.

The structural level is concerned with formal similarities between computer game elements and the narrative composition. It is that level this article is concerned with. In the following investigation of computer game influences, five traits of such influence have been identified, (1) play worlds, (2) ludified quests, (3) controller and interfaces, (4) play experience, and (5) game structure.

Play Worlds

Play worlds can be outlined from Huizinga's definition of play. An exemplary case is the *Mission Impossible* universe from the TV series (1966–1973, 1988–1990) and movie installments. They are all organized according to similar ritualistic patterns. In *Ghost Protocol* (2011), the protagonist Ethan Hunts crosses the line separating everyday life from a play world where he is hero, a savior of the world. Hunt enters the magic circle of play (Salen & Zimmerman, 2004; Zimmerman, 2014) by voluntarily accepting a secret mission placing himself and his Impossible

Mission Force (IMF) group outside normal life and firmly in a scenario abiding by its own rules.

This is especially evident each time Hunt receives a mission. This is always communicated in the same recognizable way by structuring the content in same order. Each mission statement contains an identification of Hunt followed by a mission requiring a break-in to a particular space within a specific time frame—the Kremlin in *Ghost Protocol* (2011) and the Vatican in *Mission: Impossible III* (2006)—to affirm, steal, or retrieve something or somebody. The mission statement always ends by emphasizing that Hunt and his team will be disowned if captured or killed thereby stressing their secrecy.

Acting out missions often centers on dressing up and impersonating villains by pretending. Dressing up emphasizes the continuous "play" with identities, from the initial mission confirmation of Hunt being Hunt to the identification of the villain. Dressing up and impersonating is, by the way, one of the most salient features of *Mission Impossible*. Not only can disguised members of IMF mimic the visual appearance of alleged villains, but they can also impersonate voices making them impossible to distinguish from the real thing and in so doing enact a pivotal aspect of play (Larsen, 2015; Sutton-Smith, 2001).

Taken together, the *Mission Impossible* universe exhibits a play world characterized by *voluntary actions* taking place *outside everyday life* within a specific *time and space* frame in a specific enactment as a *secret group* separated from everyday world by *disguise.* All words in italics point to crucial aspects of Huizinga's definition of play and justify a classification of the fictional universe of *Mission Impossible* as a play world.

Ludified Quests

The main challenge of conceptualizing ludified quests lies in separating them from the well-known traditional quest (Todorov, 1971/1995). The formal quest scheme (Tosca, 2003) is about transporting the player's avatar from Point A (beginning) to Point B (end) through Point C (challenge/conflict) just as when Jumpman (later Mario) has to defeat Donkey Kong to reach The Lady (later Pauline) in the *Donkey Kong* (1981) arcade game or the later Mario game installments. Such a quest template fits many games and many narratives.

Ludified quest is dependent on vertical intertextual game references, as is the case in the movie *Getaway* (2013).

In *Getaway*, the ex-racing car driver Brent Magna is being forced to drive a Mustang Shelby through the city of Sofia completing a series of quests to satisfy the kidnappers of his wife. One quest is a drive, control, and speed test, where Magna has to get from Points A to B in less than 4 min. Driving recklessly through a densely populated city completing a timed quest places the scenario very close to the highly proclaimed and debated computer game series *Grand Theft Auto* (*GTA*; Rockstar 1997–2014). As in the computer game *GTA*, Magna

crashes his car into police cars with screeching tires and people fleeing to avoid being hit by the vehicle. The vertical intertextual similarities between the movie *Getaway* and the *GTA* series show how the traditional quest scheme is transformed from standard quest to ludified scheme and in the process describes how formal quests are ludified.

Controller and Interfaces

Getaway is ludified not only through vertical intertextual references to the *GTA* series but also in the way the movie addresses the relationship between protagonist (Magna) and antagonist who is an anonymous voice on the phone. This relationship is similar to that between player and avatar. In *Getaway*, Magna is avatar, while the anonymous voice acts as the player. The phone acts as a gateway for input and output. Such a setup can be found in several movies, but in this case, the persona behind the anonymous voice has installed several cameras in the Shelby, making Magna visible on the anonymous voice's computer screen. This adds to the sensation of Magna being an avatar. When this relationship between controller and controlled is seen against the backdrop of the *GTA* series, it becomes an expression of a ludified construction.

The intersection between controller and controlled reflects the relationship between software and hardware as a point of transition that relays the feel (Swink, 2009) of the game. Magna as avatar is a tool acting out each of the voice's input commands, but falling to do so would break immersion (Murray, 1997; Salen & Zimmermann, 2004) and flow (Csikszentmihalyi, 2000) and would reverse the relationship of power between protagonist and antagonist. The moment Magna breaks free of the voice's hold over him, he transforms from avatar to character, marking the point where ludification ends and traditional movie composition begins.

Such considerations encourage associations with the title. *Getaway* pays lip service to Sam Peckinpah's *The Getaway* (1972) and later versions, but more notably it relates to the term *gateway*, understood as a link between two computer programs or as a node acting as interface between user (voice) and content (Magna).

Getaway illustrates how controller and interfaces find a way and an expression in the narrative composition of modern movies. In this case, as an interface, they relay an input–output circuit between controller and avatar.

Play Experience

Play experience as the fourth aspect of gameful narratives can be found in the mainstream sci-fi movie *Edge of Tomorrow* (2014). The narrative composition enacts the play experience *and* the structure of a particular computer game genre, real-time strategy (RTS) games.

This section is concerned with tracing and unearthing the formal structure of play experience in the narrative composition.

In *Edge of Tomorrow*, William Cage, played by Tom Cruise, a major in public relations who knows very little about being a soldier, is thrown against his will into a battle against the alien invasion force *The Mimics*.

Cage quickly finds himself in a unit of unfit soldiers in the middle of the chaotic battlefield on the dawn of the final battle against the Mimic force or so the military command thinks. However, the battle is an ambush. On the day of the final assault against the Mimics virtually all the soldiers are slaughtered. Cage's unit get killed frantically firing their weapons in panic in all directions without hitting any Mimics.

In his final seconds, Cage detonates a claymore mine, killing himself and an attacking α Mimic. The audience see Cage screaming as he dies with his face drenched in Mimic blood. We are 24 min into the movie. Seconds later, Cage wakes up at the Heathrow airbase one day before the assault just witnessed. Cage relives the same day and ends up getting killed once again. This pattern repeats itself. At each repetition time is reset, placing Cage 1 day before the final battle. Later in the movie, Cage learns that he accidental killed a rare α Mimic who controlled time. By killing it, he derived its ability or game mechanic.

After several attempts to survive the battlefield, he joins forces with Rita Vrataski, played by Emily Blunt. Vrataski is a highly decorated and respected soldier. Together, they fight their way through the massive presence of Mimics, trying to locate the controlling force behind the invasion, the Omega.

The ludic influence on *Edge of Tomorrow* includes the formal respawn mechanic activated every time Cage dies. Such a structure is similar to the one applied in computer games. Each time the player dies, he or she starts over again. Same pattern as in the before mentioned *Run Lola Run*.

Besides the die-respawn mechanic, Cage engages in a learning process to progress through the battlefield. He trains, fights, and dies without risk (Gee, 2003, 2005; Shaffer, 2006) always starting from scratch after dying. Once again, this resembles players trying to progress in a computer game.

Cage trains and learns to perform action sequences by memorizing. Each encounter with the enemy constitutes a countermove (Sirlin, 2008). Just like computer players learning to fight an Artificial Intelligence (AI).

Game design Koster (2004) calls the learning of repetitious patterns *grokking* (2004). This refers to developing an understanding of something, "so thoroughly that you have become one with it and even *love* it. It's a profound understanding beyond intuition or empathy" (p. 28).

Such patterns are needed to combat fast and complex AIs in RTS games. These learned patterns could be divided in sequence and composition and, as Engeström (1986, 2001) points out, they are reminiscent of Bateson's (1987) description of learning. Sequence is first and foremost about memorization of repeatable actions in stable contexts (the same battle each time). Composition is about changing sequence, adapting to change by recontextualizing and so instantiating and creating new memorization of new sequences.

Oscillating between memorizing sequences and recontextualizing the same sequences (composition) constitutes the play experience (Larsen, 2015) of almost all computer gamers, when they try to find a way through or repel overwhelming forces generated by an AI.

Such player behavior exhibits what Juul (2013) characterizes as the paradox of failure. Faced with failure in a computer game, the player becomes aware that he or she is not good enough to overcome the challenge at hand. This is unpleasant. Yet players continue because "games promise us a fair chance of redeeming ourselves" (p. 7). In the case of Cage in *Edge of Tomorrow*, success hinges on nothing short of saving mankind.

Game Structure

As I have already pointed out, the structural layering of the invading Mimic force in *Edge of Tomorrow* is similar to the game structure of RTS games such as the *StarCraft* series (1998–2009), the *Warcraft* series (1994–2014), or the *Command and Conquer* series (1995–2013). The Omega (AI) sends waves of Mimics (equivalent to Zerg rush in *StarCraft*), while Cage and Vrataski (players) try to counter the attacks.

In *The Art of Computer Game Design* (Crawford, 1982), Crawford highlights a number of computer game design techniques based on computer properties. They all serve to put pressure on the player. This is done (1) by using vast resources, understood as the computer's ability to create endless numbers of enemies; 2) by presenting limited information to the player, he or she is held in partial darkness; (3) by increasing pace, unit respawn times, and movement speed; (4) by asymmetrical relationship between computer and player (each side having different strengths and weaknesses); and (5) by using indirection (triangularity), which means presenting a special unit for the player to create a choice (Fullerton, Swain, & Hoffman, 2004; Meier, 2012) between following the current action or changing course and going after the special unit. Indirection (triangularity) creates a "mixed offensive-defensive relationship" (Crawford, 1982, p. 62).

In *Edge of Tomorrow*, all five design technics can be found: (1) the Omega/AI controls vast resources in the form of huge numbers of Mimics, (2) the players' (Cage/Vrataski) actions are based on limited information (Mimics hide in the ground [similar to the Zergs in the *StarCraft* series]), (3) mimics move with overwhelming speed, (4) there are asymmetrical relationships (a) between two players (Cage/Vrataski) against an army of vast resources and (b) in the possession of an asymmetrical ability (or game mechanic: (Burgun, 2015; Sicart, 2008), the ability to control time. The time-reset mechanic shifts from Mimic to Cage and later in the movie back to the Mimics again, and (5) in the final encounter with the Omega, an α Mimic is present enacting a triangular relationship, creating a choice scenario where Cage/Vrataski have to determine whether to pursue the α Mimic to regain time-reset mechanic or go for the final kill (known as an α strike in game communities) by destroying the Omega knowing

they will die trying. Such similarities between computer game elements and modern cinema expose the dynamics of structural ludification.

Conclusion

This article has presented a conceptual framework of ludification as an answer to the elusive question "What is ludification?," especially as regards the ludification of modern cinema.

Until recently, ludification has been investigated mainly for its ludic significance for playful identity creation as an expression of new participatory dynamics, patterns, and strategies in media practices. Such an approach has been set against the widely applied dimension known as gamification, especially when conceived as converting nongame content and contexts into game-like scenarios. There have been discussions about ways to position the concepts of ludification and gamification relative to each other, and especially which term should be considered as overarching (Walz & Deterding, 2014). This article has proposed placing ludic identity and playful media practices parallel to applied game aspects on nongame content and context under the heading of gamification as shown in Table 1. Such a step opens up avenues for horizontally expanding conceptualizing by including two identified and equally important areas of ludic influences. These two areas constitute oppositional channels of influences wandering between modern cinema and computer games. They have been called playful aesthetics and gameful narratives.

Playful aesthetics is concerned with investigating and tracing how cinematic effects are being adapted and utilized in computer games. Cut-scenes and voice-over techniques demonstrated *direct* adaptation, while game mechanics exhibited complex *indirect* conversions of established cinematic aesthetics.

Gameful narratives constitute the prime concern of this article and reflect ways in which narrative compositions of modern cinema are more or less explicitly being structurally effected by computer game elements. Five such structural influences have been identified. These were identified as follows: play worlds, ludified quests, controller and interfaces, player experience, and game structure, all pointing to different aspects of computer game elements that influence the narrative composition of modern cinema.

Future work should focus on continuing unearthing, identifying, and clarifying additional aspects of computer game elements and their influence on modern cinema. Especially from the proposed structural level where the influence is far less obvious than on the semantic level, where computer games frame the narration as in the abovementioned cases *Tron* series, *Gamer*, or *Wreck-It Ralph* highlight.

Finally, to get at a clear grasp of the complexities of ludification, the dynamic influences that mutually effect cinema and computer games (playful aesthetics and gameful narratives) have been placed together under the heading of cinemafication (Table 1) in contrast to gamification, thereby outlining the otherwise porous and elusive concept known as ludification, giving it substance and presenting it in a ramified conceptual framework.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding.

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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Ludography

Braid (2008, Jonathan Blow)
Command and Conquer (1995–2013, Westwood and EA Games)
Donkey Kong (1981, Nintendo)

Façade (2005, Mateas, M., & Stern, A.)
Grand Theft Auto (1997–2014, Rockstar)
Mass Effect 1-3 (2007–2012, BioWare)
Max Payne 1-3 (2001–2003, Remedy software; 2012, Rockstar Studies)
Skyrim, (2011, Bethesda Game Studios)
StarCraft (1998–2009, Blizzard Entertainment)
The Stanley Parable (2013, Galactic Café)
Warcraft (1994–2014, Blizzard Entertainment)
World of Warcraft (2004, Blizzard Entertainment)

Movies and TV Series

Beauty and the Beast (1946, Jean Cocteau)
Blade Runner (1982, Ridley Scott)
Cleo From 5 to 7 (1962, Agnès Varda)
Edge of Tomorrow (2014, Doug Liman)
Funny Games, (2007, Michael Haneke)
Gamer (2009, Mark Neveldine & Brian Taylor)
Getaway (2013, Courtney Solomon)
Live and Let Die (1973, Guy Hamilton).
Mission Impossible—TV-Serien (1966–1973, 1988–1990)
M: I-2 (2002, John Woo)
Mission: Impossible III (2006, J. J. Abrams)
Mission: Impossible—Ghost Protocol (2011, Brad Bird)
Run Lola Run (1998, Tom Tykwer)
Testament of Orpheus (1960, Jean Cocteau).
The Getaway (1972, Sam Peckinpah)
The Matrix (1999, The Wachowski Brothers)
The Seventh Seal (1953, Ingmar Bergman)
Tron (1982, Steven Lisberger)
Tron: Legacy (2010, Joseph Kosinski)
Wreak-It Ralph (2012, Rich Moore)
X-Men: Days of Future Past (2014, Bryan Singer)

Author Biography

Lasse Juel Larsen received his PhD in learning, play, and computer games in 2013. He is currently teaching at the Department for the Study of Culture and at the Faculty of Engineering as a research assistant. He has been the main driver in establishing the interdisciplinary Social Technology Lab. His current research focuses on game design and development, computer game aesthetics, playful interactions (transmedia worlds, wearables), play, and learning theory.