

# Exporting Wars: Literature Theory and How It Explains the Video Game Industry

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## ABSTRACT

The video game industry is the combination of two worlds: technology (IT) and show-biz/media/cultural industries. This paper explores this tension by exposing the shortcomings of the culture economics perspective and its lack of understanding for the unique characteristics of the video game medium, thus subsequently proposing a deeper analysis of the medium by turning to literary theoretical perspectives on games, such as ludology and narratology. Due the lack of technological dimensions in its theoretical framework, narratology is deemed less fruitful as an analytical tool and ludology is preferred. Ludology, with Espen Aarseth's *cybertext* theory elucidates aspects of "interactivity", author-medium-reader power relations and the mechanical organization of textual machines, which provides perspectives on practice in the video game industry.

## Author Keywords

Video game industry, cultural industries, culture economics, ludology, narratology

## INTRODUCTION

This paper explores the intersection between organization studies, technology, literature theory, cultural industries and the video game industry. The paper aims to demonstrate how the analysis of the internal structure of a medium can provide a more rewarding understanding of certain aspects of the video game industry. This paper proposes a novel approach of viewing video games as a new form of cultural industry strongly characterised by the unique emergent dimensions afforded by video games.

The video game industry incorporates numerous perspectives regarding the core of its activity, i.e. the video game. It has historically been perceived mainly as an electronic toy, but currently two dominating perspectives permeate the industry: games as IT products, and games as "show-biz"/cultural industry products. While these perspectives provide interesting insights into the game industry as such, it does not give satisfactory accounts of its internal dynamics.

In the case of cultural industries studies hitherto much research have been focused on traditional media industries (such as cinema, music, books, newspapers), performing arts (e.g. opera houses, symphony orchestras, dance companies, musicals) and fine arts (e.g. painters, sculptors) and has given scarce attention to the tremendously expanding game industry. In Caves' book *Creative Industries - Contracts between art and commerce* [11] an analytical framework is presented, which defines the economic characteristics of cultural industries. This paper will apply and examine this perspective on the game industry, and also further analyse to what extent this framework can describe critical features of the game industry. It will be argued that the cultural industries perspective provides valuable insights regarding the economic dynamics of the game industry, but is, due to its foundations in neoclassical economics, incapable of taking into account a medium's unique characteristics and its influence on the industrial dynamics of the medium's respective cultural industry. This is particularly evident in the case of video games, where the interactive dimension provides revolutionary exclusive features, previously unavailable through any other medium, but is omitted in the cultural industries perspective.

Simultaneously, the "IT perspective" on video games presents an exaggerated focus on the technological aspects of the video game industry, consequently overlooking, in broad terms, the "creative" and "cultural" aspects of the medium and its influence on the industry. Numerous examples of "games design" literature propose a plethora of approaches [6, 44, 45] of how to understand and create new games. These perspectives in various degrees elucidate the uniqueness of the game medium and the technological challenges associated with the creation of this medium, but seem to lack any elaborate theoretical views on how to bridge these perspectives with aspects of business, media, commerce, organization and "culture" (in a cultural industries sense).

An attempt to problematise this "bridging" of these two dominating discourses in the game industry will be elaborated in this paper. A departure point for this attempt is the emergent property of video games, which helps

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establishing a definition of what actually a video game is, in terms of relationship between author, reader, text and machine. The analysis then turn to literature theories in game studies to find answers of how to develop this synthesis.

The linking perspective will provide a missing, and previously unexplored, element in the fields of game research and game industry studies.

### BRIDGING SITUATEDNESS OF THEORIES

In his, within the field of game studies, seminal work *Cybertext – Perspectives on Ergodic Literature* Aarseth [2] warns against colonising practices within academia and theory development in general. He opposes how literature theory is encroaching on unexplored fields:

*Theories of literature have a powerful ability to co-opt new fields and fill theoretical vacuums, and in such a process of colonization, where the “virgin territory” lacks theoretical defense, important perspectives and insights might be lost or at least overlooked. When we invade foreign ground, the least we can do is to try to learn the native language and study the local customs. Although several studies have already been carried out within most of these subfields, almost none have produced over-arching, or universal, perspectives or engaged in a comparative analysis of all the forms of textuality examined here. [2]*

These quotes witness how strongly Aarseth opposes the practice of eclipsing new phenomena by existing dominant theoretical frameworks. However, despite these abundant warnings provided by Aarseth this paper attempts to do exactly what he is questioning: export theories into an unexplored field. The “colonizing” theories will consist of literature theories concerning video games including Aarseth’s own theories, and the “virgin territories” represented by business and management theories of the video game industry. Unintentionally this becomes a somewhat ironic inversion of Aarseth’s initial situation – theories intended to defend a field from colonizing forces suddenly find themselves on the opposite side of the practice becoming theories exported into a unexplored field.

However, there are several reasons to attempt such a project. The primary reason is that there has been surprisingly little research performed in the field of business and management aspects of the video game industry. The video game industry is a young industry, and even younger still is the nascent field of game studies. The field of game studies has primarily focused on issues of technology [14, 45], literature theory [among others 2, 18, 35, 38], sociology [29, 41], psychology [5, 22, 23, 27, 31], pedagogics [4, 21] and some (limited) business and economy research. Broadly understood, the field of business, economy and management perspectives within game studies have predominantly focused on issues such as economics of MMOGs [10], branding/in-game advertising [12, 13, 40] proceedings, new media/digital media perspectives [32, 34]

and some sporadic contributions from various fields such as human resource management [8], knowledge management [48], strategic management [43] and project management [20].

In general there is a diversified and fragmented community of business and management related video game researchers, with results occasionally presented in a plethora of journals, conferences, books and web forums from a wide spectrum of academic perspectives. Hopefully it is only a matter of time and question of reaching a critical mass of research before academic game industry researchers will create forums and theoretical dialogue in a more unified fashion.

The loadstar for this study is to bridge theories. In the aforementioned quote by Aarseth, he claims that when invading foreign ground one should learn the native language and customs. This metaphor for “colonization” will be applied as a guiding principle, as it is the firm belief of this study that exploring, combining and bridging theories provides new insights and innovating perspectives.

### CULTURAL INDUSTRIES

*Q: How does the industry perceive games?*

*A: [...] Personally I view games as an entertainment product. To make something that people will enjoy and be happy about. I see it as a competitor to books, films and CDs. In today’s economy competitors can also be friends and that’s why games are based on movies, and movies based on games etc. Make books out of games too. Because it all comes together. But personally I see it as entertainment.*

Former game developer executive and game industry consultant. (Author’s translation)

\* \* \*

*Q: OK, if I put it like this, compare the [game] industry to another similar industry?*

*A: In that case, it’s film. You have to develop a concept, you have to bet on the project, you have to bet a lot. And then ... if you bet on the project you have a high upside at the same time, as there is a high risk. You have to know what you are betting on.*

Vice President and CFO of major Swedish game developer (Author’s translation)

\* \* \*

*Q: How do you perceive games? As an economic phenomenon? Within the industry?*

*A: I believe that games have a very bright future ahead. Film, TV, music and books have sort of been the dominating entertainment forms during a long time and now suddenly comes a new fifth industry which is there and is actually competing .... almost on par in terms of size with these. Both when it comes to people’s time consumption and revenues and so on. If you compare to film which probably is the most developed and advanced of these industries, I*

*believe in many ways. In comparison with it ... there are many things which we can learn from it, but with long term perspective there is even greater potential I would say for games.*

CEO of major Swedish game developer  
(Author's translation)

As proposed previously and illustrated by these sample quotes based on empirical data collected from game industry professionals, within the video game industry it is almost universally compared to and associated with the so-called cultural industries, and more specifically to the film industry. Consequently economic theories within this field should provide insights into the inner working and dynamics of the video game industry.

The field of cultural industry studies emanate from the concept of culture industries launched by Adorno and Horkheimer [3] as part of the Frankfurt school within critical theory in the 1930s and '40s [25, 47]. It has since evolved into a broad field with numerous perspectives and research traditions primarily focusing on studies of organizations that create newspapers, books, film, TV, "fine arts" and to some extent popular music. A part of this field is concerned with the culture economics of this industry. Traditionally this perspective has been dominated by neoclassical economical theory, but has in recent years however, evolved into a more flexible approach focusing on recurring problems and inequities in cultural production and consumption, with Richard Caves' *Creative Industries* [11] as indicative example.

Surprisingly little attention is paid to the video game industry within the field of cultural industry studies. Hesmondhalg's influential outline of the cultural industries field [26] and Caves' [11] books dedicate less than one page to this new industry, even though the considerably younger phenomenon of Internet-based media production receives significantly more consideration. The frivolous nature of video games and the ensuing academic reluctance, might be traced to the moralising dynamic of academic activity, as proposed by Gustafsson [24].

### **Video game (cultural) industry?**

Even though the video game industry shows significant similarities to many cultural industries in terms of industry structure and dynamics, it does not automatically qualify as such from a theoretical point of view. In order to more thoroughly verify this tentative proposal an analytical framework based on Caves's [11] research will be applied. In his book Caves stipulates seven basic characteristics of the cultural/creative industries, which are all results of culture economics research.

The seven basic characteristics are as follows:

- *Demand is uncertain* – Demand for culture/creative products are almost impossible to predict. This property is known as the *nobody knows* property.

- *Creative workers care about their product* – It is called the *art for art's sake* property, where the aesthetics and views on quality and originality of creative workers are considered by the workers to be of greater importance than the commercial prospects of the outcome.
- *Some creative products require diverse skills* – Some, though not all, creative production, requires diverse skilled and specialised workers. This characteristic is also known as the *motley crew* property.
- *Differentiated products* – Creative products are both vertically and horizontally differentiated. Products can be differentiated in countless ways which is known as the *infinite variety* property.
- *Vertically differentiated skills* – Creative workers differ in skill, originality and proficiency. This is called the *A list/B list* property.
- *Time is of the essence* – Known as the *time flies* property, which means that time is of the essence when production has commenced and sunk costs rapidly increase.
- *Durable products and durable rents* – Most creative products are durable (*ars longa* property).

How does this culture economics framework apply to the video game industry? Almost every characteristic is fully applicable on the game industry as will be elaborated below.

The *nobody knows* property is indeed present in the video game industry. According to the CEO of a leading Swedish game developer about 75% of all games don't generate profit or even make it to the market. Of the remaining 25% of the market only a limited few become global hits and sell more than 1 million copies. Even though this gloomy claim is not necessarily backed by comprehensive industry statistical research, it does however vividly illustrate how difficult, practically impossible, it is to predict demand and profitability.

The *art for art's sake* property is expressed slightly differently from other cultural industries. Technology is, metaphorically speaking, the brush of video game artists. Hence much of the "art" in video game is expressed in terms of technology. There are numerous examples of games that have been overshadowed by technological passion and zealotry, and not commercial viability, resulting in unsuccessful, and often not even entertaining, games. Creating a technologically sophisticated and unique product is sometimes the unspoken agenda of many game developers.

Video game development is the archetypical example of the *motley crew* property. Gone are the days when a single person could create a successful video game – nowadays a standard development team employs around 20 to 30 persons for 18-24 months performing different specialised

functions such as programmer, artist, designer, music/sound technician, producer and tester.

The *infinite variety* property exists in the game industry as “market leading” products are not easily identified or even possible to determine. At the same time many game developer executives testify that video games exist on an extremely “hit driven” market, indicating some sort of differentiating forces in the marketplace.

A very selected few “*A list*” game development companies are qualified to develop *AAA*-titles as average development budgets are approaching \$5-10 millions. These experienced *A-list* developers enjoy, compared to the vast majority of *B-list* developers, completely different possibilities in terms of game publisher trust, financing and recognition, thus supporting the *A list/B list* property.

Time is indeed of the essence in the game industry where average development lead times approach 18-24 months. The situation is further complicated by the fact that many games are “time sensitive” e.g. games launched simultaneously as films or sport games with season-specific content based on real sport leagues and similar.

The *ars longa* is the most problematic of Caves’s seven characteristics applied on the video game industry. Technologically the *ars longa* feature is not supported by the game industry. Games (software) created as short as 2 years ago, are considered to be outdated and are rarely available at retail. Unlike products of almost all other cultural industries, a particular video game (software) has limited longevity in the marketplace, due to the fast-paced development of software and hardware technologies. On the other hand the IPRs (Intellectual Properties Rights) of e.g. Mario – a 20+ year old concept created by Nintendo, has produced 72 titles, on 16 different types of game platforms [37] generating sales in the order of 182 million copies [33] consequently, contradictory to the former conclusion, supports the *ars longa* property. This conflicting characteristic exposes the incompleteness of applying Caves’s culture economics framework on the video game industry. This theory does not take into account technology or, in other words, fundamental aspects of the video game medium. If video games are abstracted by means of culture economic theory to the same business activity as e.g. Broadway musicals or newspapers, it becomes evident that cultural industries perspective can only provide certain general insights regarding the game industry while omitting crucial dimensions and dynamics of the video game industry.

#### **TOWARDS NEW PERSPECTIVES ON THE VIDEO GAME INDUSTRY**

*Q: Isn't it [game production] very technical at the same time very “fluffy” with end-user experience and such? How do you combine these two worlds?*

*A: Yes, but this is exactly the charm of this business! It's what makes it so interesting. It's high technology and*

*culture at the same time. And there are so many differences compared to... it's so hard to compare... but you could compare it to making films, or you could compare it to making business software.*

Former game publisher executive  
(Author’s translation)

This quote stringently illustrates the tension that constitutes the core foundation of the global video game industry – “*it's high technology and culture at the same time*”. It further illustrates two perspectives permeating the industry with one foot in the cultural industries and the other in the software industry – “*you could compare it to making films, or you could compare it to making business software*”.

Cultural industries theories provide constructive perspectives on many issues affecting the games industry, by focusing mainly on market dynamics (*nobody knows, infinite variety* and partially *time flies* and *ars longa*) and intraorganizational factors of production (*art for art's sake, motley crue* and the *A list/B list*). Video games in this theory are invisible or, at best, treated as impenetrable “black boxes” of video game magic. It is a fundamental belief of this study that the contents of video games – the technology and gameplay as such – affects its consumers and the market, but also affects the production of the game. To make a comparison: manufacturing airplanes and automobiles is not the same, despite that both are vehicles. The fundamental characteristics of these products – one flies in the sky, the other drives on roads – create different markets, uses and customers, but also different organizations, technologies and production requirements. This is different way of saying that form and function of an object affects its user and its creator.

Turning focus to the internal dimensions of video games does not entail exclusive investigation of purely technological aspects of games – these kind of aspects are covered by numerous literature [6, 19, 45], and provide broad insights of how to correctly organize technology during the production phase, not necessarily reflecting of what a video game is and what its fundamental elements are.

What is needed is a perspective that incorporates medium, author/producer/developer and reader/consumer/player to fully grasp the economy of video games. This “triad”, which is present in all media forms, differs from others by one pivotal and axiomatic characteristic: “interactivity”. Games are an “interactive medium”. Aarseth strongly opposes the notion of “interactivity”, effectively questioning it – almost to the point of invalidation. He calls interactivity an ideological concept which connotes various vague ideas of computer screen, user freedom and personalized media [2]. Another prominent video game scholar, Janet Murray, has no objections against the term, applying it frequently as an analytical term in her pioneering work on the narratological perspective to games *Hamlet on the Holodeck: The Future of Narrative in*

*Cyberspace* [38]. Focusing instead on the notion of emergence, thus side-stepping the debate over “interactivity” due to limited space and relevance, provides more fruitful perspectives for this study. Emergence as a dimension of the game medium has been discussed extensively by e.g. Jesper Juul in his broad analysis of play and games, *Half-real: video games between real rules and fictional worlds* [30]. However, Juul positions emergence as a quality of certain types of games with: [...] *small number of rules that combine and yield a large game tree* [...] [30].

This study assumes a more fundamental and wider view of this concept whereby emergence is considered as macro-level structures created by (to some degree) unintentional dynamic micro-level entities. Video games consist of micro-level rules that limit players to certain actions that result in (various degrees unintentional) gameplay structures, which can be influenced to some degree but impossible to fully foresee. These user-participatory emergent gameplay structures constitute the unique core characteristic of the video game medium distinguishing it from all other forms of media/cultural industries.

Question now becomes what to call these structures: *simulations* or *narratives*? Within game studies two major competing camps have arisen: *ludologists* led by Espen Aarseth propagating the former, while *narratologists* headed primarily by Janet Murray prefers the latter. It is beyond the scope of this study to analyse and develop this polemic, as its specifics is without doubt known to most game researchers. Suffice to say, some proponents of both perspectives [17, 39] insist they acknowledge the opposing perspective thus rendering the debate irrelevant since these perspective elucidate different aspects of the same phenomenon. Despite this game researchers continue contrasting these perspectives [7, 36, 42]

As indicated by the previous industry executive quote, the video game industry can only be understood as a synthesis between cultural industry production and technology development. To analyse this tension requires a theoretical framework that acknowledges both perspectives. The narratologic perspective lacks or at best has an abstract perspective on technology. Murray [38] treats the (utterly science-fictional) “Holodeck” of the Star Trek-series, the “computer system”, digital environments and cyberspace as synonymous notions of spaces for “interactive narrative”. Most obviously this is a generalising view of technology, which is less fruitful for the purpose of this study.

The competing ludological perspective posits technology at the centre of its model, where the text/machine is inside the triangle of operator (user), (material) medium and verbal sign, hence a more fruitful perspective. Aarseth study of cybertexts is heavily focused on verbal signs, i.e. signs such as letters. However, his theoretical contribution is not limited to those types of games, or even computer games – his theory embraces all types of dynamic texts, electronic or paper-based.

Ludology insists that video games should be treated as games, with focus on the activity of playing instead of symbolic interpretations and narratives of the game as such. Games, ludology proposes, are better seen as a simulation instead of an extension of narrative theory, which sees games as “interactive fiction”. The two notions overlap as the following quote states:

*To claim that there is no difference between games and narratives is to ignore essential qualities of both categories. And yet, as this study tries to show, the difference is not clear-cut, and there is significant overlap between the two.* [2]

Hence the distinction between simulation and narrative becomes unclear, and some proponents of ludology [17] claim that these two perspectives are not opposing, but are in fact shedding light on different aspects of the same phenomenon. Nevertheless, the same proponent defines the difference as:

*While I do not necessarily discard these approaches [narratologic], I think that games are ontologically different from narrative because they are not just based on representation. Instead, they rely on simulation, which is a way of portraying reality that essentially differs from narrative.* [16]

The ludologists core argument is thus: the simulational experience of playing video games constitutes the foundation on which the study of video games should be built upon. This argument has sometimes been misunderstood as the basis for genre and market segmentation definitions: “narratologic” games with complex and cinematic storylines (“interactive cinema”), and culturally decontextualised “ludologic” games such as flight simulators or abstract puzzle games. This claim is erroneous as both perspectives claim to incorporate all types of games. However, the game industry would greatly benefit from the insights provided by respective perspective, which to some extent is aware of the debate as proven by the following quote:

*Production-wise they [video game and film industry] are increasingly similar. Notably on the script aspect, with greater points of contact. Especially the type of action-adventure games that we work with. A big game can have, at least 10 000 lines of dialogue. A film has maybe 1000, 2000 lines of dialogue. So it's quite extensive work for script writers. And they cooperate with script writers in Hollywood with backgrounds in films. Yes, the same type of ability to write dialogue. But also the overall dramaturgy is similar to film.*

CEO of major Swedish game developer  
(Author's translation)

With his stringent and fascinating study Aarseth launches two major concepts with implications for video games research: ergodic literature and cybertext. Ergodic

literature defines different types of literature that require “*nontrivial work [...] for traversing text*” [2], i.e. requiring more than just the semiotic process of reading involving eye movements and occasional turning of pages, or using Aarseth’s terms, a text requiring *extranoematic* (process that occurs outside of the confines of human thought) responsibilities. This non-trivial work dimension of video games makes it unique among other media/cultural industries. Not only does this requirement produce an added physical dimension to the consumption process, but also symbolically and practically increases the focus on the consumer and its experience. This is not necessarily reflected in the relationship between the industry and its consumers. An industry which during its 20-30 year existence has not succeeded in expanding its core market beyond the original “Nintendo Generation” brought up with videogames from the 1980s and onwards, failing to appeal to obvious market segments such as women [9] or older gamers.

The concept of cybertext fundamentally questions the ability of the classical linear communication model, as proposed by Shannon and Weaver [46] and developed by Jakobson [28], to explain the process between reader and text. *Cybertext* is a neologism derived from Norbert Wiener’s [49] notion of cybernetics and focuses on the mechanical organization of a ergodic text by positing the inner workings of the medium as an integral part of the literary exchange. Aarseth views video games as cybertexts that require its readers/players to extend their activity as textual interpreters and become textual *interventors* claiming narrative control. The discourse is moved away from author/sender, text/message and reader/receiver model, to a cybernetic discourse between various parts or participants in the textual machine. This constitutes one of the pivotal findings of the ludological perspective: with video games power is not transferred from author to reader, but rather to a cybernetic discourse between user and textual machine. Hence the text-user relationship depends on the mechanical organization of the textual machine – power over the literary exchange is determined by the construction of the cybertext. Consequently, mass-communication through video games, e.g. most noticeably in MMOGs, raises the importance of the *construction* and *production* of the software medium (cybertextual machine), and how it *organizes* its relationship with its readers/users, as opposed to traditional media industry’s emphasis on the message.

As a way to classify “*any text according to their mode of traversal*” but also to elaborate the concept of cybertext, Aarseth stipulates a typology [2] with seven dimensions describing every text according to its functional qualities, which are beyond the scope of this study, but most importantly this typology also defines a fundamental model of any text. These consist of three elements: *textons*, *scriptons* and a *traversal function*. Textons are defined as strings of signs as they appear in a text, while scriptons are

strings of signs as they appear to readers. The traversal function is the mechanism by which scriptons are revealed or generated from textons and presented to the user as text. Hence a cybertext becomes, metaphorically speaking, a textual machine, or cybernetic feedback system, in which users read scriptons, provide input to the cybertextual machine upon which the traversal function of the cybertextual machine generates or reveals new scriptons. Aarseth has elaborated and extended his cybertextual typology into a multi-dimensional typology of games [1], providing a powerful way of viewing the inner workings of games, and how they organize relationships to readers/users/players. Correspondingly in practice, game developers create graphics objects (textons and scriptons), which are explored using different engines – primarily the graphics engine. These three elements constitute the fundamental building blocks of the industrial production logic of game development.

### **Cybertext-cultural industry?**

What this study has tried to demonstrate and propose is the need for a new perspective on game industrial economy. A perspective based theoretically on the unique and intrinsic character of the medium of video games providing deeper understanding of the video game medium, through the analytical tools of ludology – a linking of the cultural, economic and technological perspectives.

Ludological notions of cybertext, its representation of the relationship between author, medium and reader, the analysis of the mechanical organization, and consequently production, of the cybertextual medium, shed lights on issues which are ignored by existing theoretical frameworks, but have paramount importance for the understanding of the game industry.

This “theoretical colonization” gives rise to a more rewarding and unified perspective – cybertext-cultural industry? – that is lacking in the field of game industry research. Hopefully this study has shed some light on the lack of, and the need for, new perspectives on the video game industry.

### **REFERENCES**

1. Aarseth, E., Smedstad, S. M. & Sunnanå, L. (2003). *A Multi-dimensional Typology of Games*, DIGRA 2003, Utrecht, Netherlands.
2. Aarseth, E. J. (1997). *Cybertext - Perspectives on Ergodic Literature*, Johns Hopkins University Press.
3. Adorno, T. W. & Bernstein, J. M. (2001). *The culture industry : selected essays on mass culture*, Routledge.

4. Aldrich, C. (2005). *Learning by doing: a comprehensive guide to simulations, computer games, and pedagogy in e-learning and other educational experiences*, Jossey-Bass/John Wiley.
5. Anderson, C. A. & Dill, K. E. (2000). "Video Games and Aggressive Thoughts, Feelings, and Behavior in the Laboratory and in Life", *Journal of Personality and Social Psychology*. 78.
6. Bates, B. (2004). *Game Design*, Course Technology PTR.
7. Brand, J. E. & Knight, S. J. (2005). *The Narrative and Ludic Nexus in Computer Games: Diverse Worlds II*, Paper presented at the DIGRA 2005, Vancouver.
8. Cadin, L. & Gu erin, F. (2006). "What Can We Learn from the Video Games Industry?" *European Management Journal*. 24(4).
9. Cassell, J. & Jenkins, H. (1998). *From Barbie to Mortal Combat: gender and computer games*, MIT Press.
10. Castronova, E. (2001). "Virtual worlds: A first-hand account of market and society on the cyberian frontier", *CESinfo Working Paper*(618).
11. Caves, R. E. (2000). *Creative Industries - Contracts between art and commerce*, Harvard University Press.
12. Chambers, J. (2005). *The Sponsored Avatar: Examining the Present Reality and Future Possibilities of Advertising in Digital Games*, Paper presented at the DIGRA 2005, Vancouver.
13. Deal, D. (2005). *The Ability of Branded Online Games to Build Brand Equity: An Exploratory Study*, Paper presented at the DIGRA 2005, Vancouver.
14. El Rhalibi, A., England, D. & Costa, S. (2005). *Game Engineering for a Multiprocessor Architecture*, Paper presented at the DIGRA 2005, Vancouver.
15. Frasca, G. (1999). *Ludology meets narratology: Similitude and differences between (video)games and narrative*, www.ludology.org.
16. Frasca, G. (2001). *SIMULATION 101: Simulation versus Representation*, www.ludology.org, Available: <http://www.ludology.org/articles/sim1/simulation101.html>. Accessed: 2004-09-10.
17. Frasca, G. (2003a). *Ludologists love stories, too: notes from a debate that never took place*, DI-GRA 2003 Conference.
18. Frasca, G. (2003b). "Simulation vs. Narrative: Introduction to Ludology". In *The Video Game Theory Reader*, M. J. P. Wolf & B. Perron (Eds.), Routledge.
19. Fullerton, T., Hoffman, S. & Swain, C. (2004). *Game design workshop: designing, prototyping and playtesting games*, CMP Books.
20. Gaume, N. (2006). "Nicolas Gaume's views on the video games sector", *European Management Journal*. 24(4).
21. Gee, J. P. (2003). *What video games have to teach us about learning and literacy*, Palgrave Macmillan.
22. Griffiths, M. (1997). "Video Games and Aggression", *Psychologist*. 10.
23. Grossman, D. (1995). *On Killing: The Psychological Cost of Learning to Kill in War and Society*, Little, Brown.
24. Gustafsson, C. (1994). *Produktion av allvar: om det ekonomiska f oruftets metafysik*, Nerenius & Sant erus.
25. Held, D. (1980). *Introduction to critical theory: Horkheimer to Habermas*, University of California Press.
26. Hesmondhalgh, D. (2002). *The Cultural Industries*, Sage Publications.
27. Irwin, A. & Gross, A. (1995). "Cognitive Tempo, Violent Video Games, and Aggressive Behavior in Young Boys", *Journal of Family Violence*. 10.
28. Jakobson, R. (1960). "Closing Statement: Linguistics and Poetics". In *Style and Language*, T. A. Sebeok (Ed.), MIT Press.
29. Jansz, J. & Martens, L. (2005). "Gaming at a LAN event: the social context of playing video games", *New Media Society*. 7(3), 333 - 355. .
30. Juul, J. (2005). *Half-real: video games between real rules and fictional worlds*, MIT Press.
31. Kirsh, S. J. (1998). "Seeing the World through Mortal Combat-colored Glasses: Violent Video Games and the Development of Short-term Hostile Attribution Bias", *Childhood, a Global Journal of Child Research*. 5.
32. Kline, S., Dyer-Witheford, N. & Peuter, G. d. (2003). *Digital play : the interaction of technology, culture and marketing*, McGill-Queen's University Press.
33. Kohler, C. (2005). *The Man Who Keeps Nintendo Cool*, Wired News, Available: <http://www.wired.com/news/games/0,2101,67854,00.html>. Accessed: 2005-06-15.
34. LaPlante, A. & Seidner, R. (1999). *Playing for profit : how digital entertainment is making big business out of child's play*, Wiley.
35. Laurel, B. (1993). *Computers as Theater*, Addison Wesley.
36. Mateas, M. & Stern, A. (2005). *Build It to Understand It: Ludology Meets Narratology in Game Design Space*, Paper presented at the DIGRA 2005, Vancouver.
37. MobyGames. (2005). Available: [www.mobygames.com](http://www.mobygames.com). Accessed: 2005-06-17.
38. Murray, J. (1998). *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, MIT Press.
39. Murray, J. (2005). *The Last Word on Ludology vs Narratology in Game Studies*, DIGRA 2005 Conference, Vancouver, Canada.

40. Nelson, M. R. (2002). "Recall of Brand Placements in Computer/video Games", *Journal of Advertising Research*. 42.
41. Orleans, M. & Laney, M. C. (2000). "Children's Computer Use in the Home: Isolation or Sociation?" *Social Science Computer Review*. 18(1), 56-72.
42. Pearce, C. (2005). *Theory Wars: An Argument Against Arguments in the so-called Ludology/Narratology Debate*, Paper presented at the DIGRA 2005, Vancouver.
43. Readman, J. & Grantham, A. (2006). "Shopping for Buyers of Product Development Expertise - How Video Games Developers Stay Ahead", *European Management Journal*. 24(4).
44. Salen, K. & Zimmerman, E. (2003). *Rules of Play: Game Design Fundamentals*, MIT Press.
45. Saltzman, M. (1999). *Game Design: The Secrets of the Sages*, BradyGAMES.
46. Shannon, C. & Weaver, W. (1969). *The Mathematical Theory of Communication*, University of Illinois Press.
47. Sim, S., Appignanesi, R. & Loon, B. V. (2001). *Introducing critical theory*, Icon.
48. Tschang, T. & Szczypula, J. (2006). "Idea Creation, Constructivism and Evolution as Key Characteristics in the Videogame Artifact Design Process", *European Management Journal*. 24(4).
49. Wiener, N. (1965). *Cybernetics or control and communication in the animal and the machine*, MIT Press.