

A Select Annotated Bibliography Concerning Game-Design Models for Digital Social Knowledge Creation

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A SELECT ANNOTATED BIBLIOGRAPHY

Concerning Game-Design Models for Digital Social Knowledge Creation

**Nina Belojevic, Alyssa Arbuckle, Matthew
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Christie, Jon Saklofske, Jentery Sayers, and
the INKE and ETCL Research Groups**

Introduction

In 2012–2013 a team led by Ray Siemens at the Electronic Textual Cultures Lab (ETCL), University of Victoria, in collaboration with Implementing New Knowledge Environments (INKE), developed three annotated bibliographies under the rubric of “social knowledge creation.” The items for the bibliographies were gathered and annotated by members of the ETCL to form a resource for students and researchers involved with INKE and well beyond, including at digital humanities seminars in Bern (June 2013) and Leipzig (July 2013). The result of this initiative might best be approached as an expeditious environmental scan, a necessarily partial snapshot of scholarship coalescing around an emerging area of critical interest.

The bibliography presented here, “A Select Annotated Bibliography Concerning Game-Design Models for Digital Social Knowledge Creation,” outlines a selection of texts on game-design models and related definitions, discourses, and best practices relevant to digital social knowledge creation. Social knowledge creation in the digital realm, with the benefits of social networking models, crowdsourcing, folksonomic tagging systems,

collaborative writing platforms, cloud-based computing, and a variety of many-to-many communication methods, has the potential to grow and flourish in the Web 2.0 environment. The trend towards greater access to large data in widely usable formats, and the growing familiarity with analytical tools to process that data, dramatically accelerates workflows and allows researchers to pose questions that simply would have taken too long to answer without computation. The software-based modes that researchers increasingly communicate through can be seen to cultivate a “problem-based” approach to scholarship that locates focus and concern outside disciplinary boundaries. Problem-based scholarship implies greater attunement with the public that research intends to serve, suggesting further that accelerating and deepening discourse between experts and the communities existing around data sets is of scholarly value. Similarly, videogames have developed and evolved in exciting ways, especially in relation to the growing ubiquity of computers, smartphones, and tablets. Although game studies have been a much-discussed field for some time now, the ways in which digital humanities, game studies, and the public overlap and relate to each other remain unclear. As digital humanities practices, such as multimodal communication, collaborative writing, modeling and prototyping, and hands-on making, become more widespread, possible overlaps or possibilities for shared learning and insights between game studies and digital humanities increase. Although many scholars may remain skeptical of such intersections, game-based pedagogy projects and humanities-related serious games indicate that overlaps are already, in fact, taking place.

The application of game-based models in digital humanities endeavors, although unconventional, should come as no surprise. Games are known for their potential to capture the player’s attention, encourage focus and concentration, facilitate collaboration among large groups, and express complex stories and topics in intuitive, experiential ways. As digital humanists develop scholarly and pedagogical environments, these benefits will become increasingly valuable. Perhaps the most widely known game-design approach that is applied in non-game environments is gamification. Gamification falls into a peculiar position within the game-studies/digital humanities relationship: its obvious genesis in the gaming world situates gamification in the realm of game studies, but its application necessarily diversifies this position. Furthermore, definitions of gamification provoke

an array of opinions. While the term is often used in an ambiguous sense, referring to all game-like or gaming-inspired instances in non-gaming contexts, many scholars justly differentiate between gamification, serious games, playful design, and other related approaches. Sebastian Deterding et al. (2011) offer a well-articulated definition, stating that gamification is “the use of game design elements in non-game contexts” (p. 2), but they also note that gameful design may be a better term for use within academic contexts, since it carries less baggage than gamification (p. 6). In addition to the negative connotations associated with gamification, the particular focus on implementable game mechanics and elements may limit the potential of the approach. For this reason we use the term gameful design as well as game-design models, game-design thinking, or game-inspired approaches to refer to the broader potential of applying such methods in the development of non-game environments. Such an approach resists the reduction of game design to common game elements and instead aims to apply broader game-design practices and approaches in the development of non-game environments.

Humanities scholars often eschew game-design approaches because of the corporate and exploitative reputation of gamification. Gamification had been particularly popular in corporate and consumer-facing digital environments—most often to increase user engagement with a site, program, or application. Within that context, the application of game-design elements often takes place for exploitative purposes. Because games are so effective at capturing attention and driving engagement, companies and organizations can encourage forms of free immaterial labour from users and find veiled means of driving profits and success rates by applying gamification methods. In this way, gamification provides a prime example of the blurring between play and labour that critics such as Ian Bogost, Alexander Galloway, Trebor Scholz, Lisa Nakamura, McKenzie Wark, and Nick Dyer-Witherford and Greig DePeuter study. The actual use of gamification within the humanities is currently limited, with critique largely directed towards gamification as a general process, rather than emerging from study of its use within existing or critically prototyped knowledge environments. Rather than assuming that all game-design-inspired approaches are exploitative across all contexts, this bibliography aims to open up the discourse to acknowledge and engage with critiques of socioeconomic and academic structures. Concurrently, this bibliography

draws attention to inspirational and practice-based texts on game studies and game design that may incite scholars to develop game-based responses and solutions.

While certain game-design applications in non-game environments may seem reductive, we believe that a game-inspired design approach can, in fact, help to design sophisticated, self-reflexive environments that benefit not only from the iterative prototyping process of game design, but also apply procedural rhetoric and effective game mechanics in order to communicate complex arguments in practice. In a social knowledge creation context, game-design models are still in their early stages, and scholarly work on the topic is scarce. As such, the selections in this bibliography focus on specific areas that aim to offer the reader insight into the critical discourse regarding socioeconomic and institutional practices related to game-design models and social knowledge creation. Ideally, the selections will inspire interested scholars and practitioners to use game-design methods to overcome challenges in social knowledge creation environments. Due to the scarcity of resources on this particular field, we recommend that readers approach the selections in this bibliography with the above-mentioned vision of game-design-inspired thinking in mind and consider its potential in the design of social knowledge creation tools and environments. While a number of texts listed below do not discuss game-design methods directly, they cover important issues, concepts, and theories that offer relevant considerations for practitioners who plan to study or implement game-design approaches.

The bibliography consists primarily of sources from the past 10 years, although a few exceptions were made for particularly relevant texts. Because of the digital humanities context of and expected audience for the bibliography, we decided to comprise the majority of the bibliography of scholarly, humanities-related work. Due to the interdisciplinary nature of the proposed game-design inspired practice, however, we also included a number of texts from other areas—primarily game design. The intention is to provide digital humanities scholars, students, and practitioners with a present-day survey of popular, widely studied game-design practices while offering a snapshot of discourses and concerns regarding academic humanities practices, videogames and game design studies, and related aspects of the digital landscape and economy. Examples of relevant

videogames, social networks, and applications also make up a portion of the bibliography. Rather than attempting to cover all relevant videogames and applications or offer a history of videogames, we included select examples that are either referenced widely, offer particular insight into the origins and practices of game-design applications in non-game contexts, show inspiring examples from the indie game development movement, or provide a unique, stimulating indication of how games can be applied for scholarly or pedagogical purposes. Additionally, a small number of texts from other industries warranted inclusion based on reception and topical relevance (see Zichermann and Cunningham). The bibliography has been organized into six sections of 98 individual entries and a final section containing a complete alphabetical list:

1. Game-Design Models in Scholarly Communication Practices and Digital Scholarship
2. Game-Design-Inspired Learning Initiatives
3. Game-Design Models in the Context of Social Knowledge Creation Tools
4. Defining Gamification and Other Game-Design Models
5. Game-Design Models and the Digital Economy
6. Game-Design Insights and Best Practices
7. Complete Alphabetical List of Selections

The initial sections, “Game-Design Models in Scholarly Communication Practices and Digital Scholarship” and “Game-Design-Inspired Learning Initiatives,” provide a basis for scholarly practices and challenges concerning social knowledge creation. The third section, “Game-Design Models in the Context of Social Knowledge Creation Tools,” outlines a select overview of gamification and game-related approaches in particular tools and environments. The second half of the bibliography focuses more specifically on game-related discourses. The fourth section, “Defining Gamification and Other Game-Design Models,” discusses the much-debated terminology and definitions of gamification and related approaches. “Game-Design Models and the Digital Economy” discusses certain key concerns and risks associated with current socioeconomic structures and cultural habits. Building on the critical base of the previous sections, the final focus on “Game-Design Insights and Best Practices” consists of a selection of game-design related approaches and practices intended to inform the more practical requirements of developing social knowledge creation tools and

environments that incorporate game-design-inspired approaches. The structure of this bibliography intends to combine an introduction to the issues regarding gamification and social knowledge creation with the proposition that game-design-inspired approaches have the potential to offer critical responses and solutions, if applied conscientiously.

1. Game-design models in scholarly communication practices and digital scholarship

Scholarly communication is an evolving and much-debated field in the humanities. The discourse ranges from issues of tenure-track, peer-review, and engagement in the digital humanities to the ways knowledge and history are presented via Web 2.0 practices and the opportunities social data collection heralds for initiating change in academic institutions. Based on current changes in and criticism of scholarly communication practices and digital scholarship, this section can best be approached by considering how game-design-inspired engagement, task-definition, goal-orientation, and collaboration practices can offer new ways of tackling the changes taking place in the humanities. How we analyze and understand past and present knowledge environments may be reconstituted through game design and implementation, thus fostering the dialectical relationship between the critical and creative aspects of social knowledge production in digital environments. Digital editions, for example, present a unique opportunity for gameful design to be applied as an approach within the realm of digital scholarship. Scholars are beginning to consider the areas of overlap between player engagement in videogames and digital editions environments. Rather than simply suggesting the placement of game-design elements—like points systems or badges—into a social edition environment, the 29 sources below offer critical and conceptual background considerations to keep in mind while approaching social knowledge creation from a game-design perspective.

Aarseth, E. “Ergodic literature.” Introduction. In E. Aarseth, *Cybertext: Perspectives on ergodic literature*, 1-23. Baltimore, MD: John Hopkins University Press, 1997.

Aarseth attempts to develop a theory of cybertext works, with a focus on “ergodic texts.” Aarseth’s scholarly interest lies in texts that are purposefully

shaped by the reader's tangible and visible actions and decisions. He bases his speculation on the concept that cybertexts are labyrinthine, user-dependent, and contain feedback loops. Aarseth criticizes the counterarguments that many texts can be read as cybertexts; he does not, however, concede that this distinction derives from cybertexts' necessarily electronic mode. The inherent performativity involved in reading cybertexts occurs in a network of various parts and participants, compared to the more conventional reading model of reader/author/text. Further, Aarseth argues, ergodic texts (primarily virtual games and multi-user domains [MUDs]) are defined by the agency and authority of the human subject (reader) whose decisions affect the outcome of the text as a whole.

Balsamo, A. "Taking culture seriously in the age of innovation." Introduction. In A. Balsamo, *Designing culture: The technological imagination at work*, 2-25. Durham, NC: Duke University Press, 2011.

Balsamo studies the intersections of culture and innovation and acknowledges the unity between the two modes ("technoculture"). She argues that technological innovation should seriously recognize culture as both its inherent context and a space of evolving, emergent possibility, as innovation necessarily alters culture and social knowledge creation practices. Balsamo introduces the concept of the "technological imagination"—the innovative, actualizing mindset. She also details a comprehensive list of truisms about technological innovation, ranging from considering innovation as performative, historically constituted, and multidisciplinary to acknowledging design as a major player in cultural reproduction, social negotiation, and meaning-making. Currently, innovation is firmly bound up with economic incentives, and the profit-driven mentality often obscures the social and cultural consequences and implications of technological advancement. As such, Balsamo calls for more conscientious design, education, and development of technology, and a broader vision of the widespread influence and agency of innovation.

Clement, T. "Knowledge representation and digital scholarly editions in theory and practice." *Journal of the Text Encoding Initiative* 1: June 2011. URL: <http://jtei.revues.org/203>

Clement reflects on scholarly digital editions as sites of textual performance, wherein the editor lays and privileges various narrative threads for the reader

to pick up and interpret. She underscores this theoretical discussion with examples from her own work with the digital edition *In Transition: Selected Poems by the Baroness Elsa von Freytag-Loringhoven* as well as TEI and XML encoding and the Versioning Machine. Clement details how editorial decisions shape the social experience of an edition. By applying John Bryant's theory of the fluid text to her own editorial practice, she focuses on concepts of various textual performances and meaning-making events. Notably, Clement also explores the idea of the social text network. She concludes that the concept of the network is not new to digital editions; nevertheless, conceiving of a digital edition as a network of various players, temporal spaces, and instantiations promotes fruitful scholarly exploration.

Cohen, D. J., & Scheinfeldt, T. "Preface." In D.J. Cohen & T. Scheinfeldt (eds.), *Hacking the academy: the edited volume*. Ann Arbor, MI: University of Michigan Press, 2013.

Cohen and Scheinfeldt introduce *Hacking the Academy*, a digital publishing experiment and attempt to reform academic institutions and practices by crowdsourcing content. Cohen and Scheinfeldt called for submissions to their project with the caveat that participants had one week to submit. Cohen and Scheinfeldt pitched their project with the following questions: "Can an algorithm edit a journal? Can a library exist without books? Can students build and manage their own learning management platforms? Can a conference be held without a program? Can Twitter replace a scholarly society?" (n. pag.). Roughly one sixth of the 329 submissions received were included in the consequent publication. The intent of the project was to reveal the desire and possibility for large institutional change via digital means.

Davidson, C. N. "The futures of scholarly publishing—Urgently and again", [Blog post], *HASTAC*, August 19, 2009. URL: <http://www.hastac.org/blogs/cathy-davidson/futures-scholarly-publishing-urgently-and-again>

Davidson comments on Al Greco's *The state of scholarly publishing: Challenges and opportunities*, where her essay "The futures of scholarly publishing" appears. She reiterates her argument from this article, drawing attention to the fact that monographs are rarely used to teach in universities and that sales of monographs are extremely low. Davidson advocates for change in

the academy, because professors do not in fact work in a way that is supportive of the practices that require monograph publication to reach tenure.

Davidson, C. N. “Why badges? Why not?”, [Blog post], *HASTAC*, September 16, 2011. URL: <http://www.hastac.org/blogs/cathy-davidson/2011/09/16/why-badges-why-not>

In this much-debated HASTAC post, Davidson argues in support of the “Badges for Lifelong Learning” competition and for the use of badges as an alternative credential system in academia, training, and education. She notes that one of the key benefit of badges is that they “recognize achievement and contribution, not reputation or credentials,” offering alternatives to current institutional and educational credential and evaluation standards. This blog post incited an extensive discussion about badges as a new credential system. In the comments section Ian Bogost offers a critical view, pointing out concerns such as the false dichotomy between badges and the current letter-grade system, the question of standardization of badges, and issues such as the labour metrics that go with badge systems.

Davidson, C. N., & Goldberg, D. T. “Engaging the humanities.” *Profession* (2004): 42-62.

Davidson and Goldberg contend that humanistic approaches and perspectives are highly important in university environments, although the humanities are often marginalized and devalued. Rather than defining a field-specific approach for multidisciplinary work, Davidson and Goldberg propose a problem- or issue-based humanities model. This interdisciplinary approach could cultivate forms of interpretation and complex models of cultural and human exchange in order to respond to “different and ongoing problems” (p. 49). Davidson and Goldberg suggest that interdisciplinarity within institutions (rather than interdisciplinary institutions, models, or methods) would offer flexible and transformable approaches to academia and education, while still operating within institutional structures.

Drucker, J. “Graphical readings and the visual aesthetics of textuality.” *TEXT Technology* 16 (2006): 267-76.

Drucker discusses design aspects and graphic features that often go unnoticed in print, manuscript, electronic, and text formats. She states that the conception of design elements as autonomous entities is problematic, since it ignores the relational forms of expression in design systems. Drucker describes the space of the page as a system, or a quantum field, in which all graphical elements operate together in “a relational, dynamic, dialectically potential ‘espace’ constitutive of, not a pre-condition for, the graphical presentation of a text” (pp. 270-71). Defining the categories of graphic, pictorial, and textual space, Drucker performs a reading of a page from Boethius’s *Consolatione* to demonstrate her proposed reading and interpretive approach to materiality in textual studies.

Drucker, J. “Humanities approaches to graphical display.” *Digital Humanities Quarterly* 5, no. 1: 2011. URL: <http://www.digitalhumanities.org/dhq/vol/5/1/000091/000091.html>

Drucker proposes a usability and interaction design approach to data visualization in humanities fields. She draws attention to the fact that many digital visualization tools pre-suppose an observer-independent reality and an unquestionable representation. Counter to traditional humanities thinking, these tools do not acknowledge ambiguity, interpretation, or uncertainty. Drucker urges humanists to recognize all data as *capta* (which is actively taken rather than given). Furthermore, she advocates for forms of visual expression that display information as constructed by human motivation and perceived according to interpretation of the viewer or reader. Her argument also opens up space for more 3D representations in data visualization, adding subjective experience to otherwise 2D expressions of time and space. Drucker stresses that such graphical approaches are imperative for humanities tenets to be applied and implemented in digital graphical expressions and interpretations.

Drucker, J. "Humanities approaches to interface theory." *Culture Machine* 12 (2011): 1-20. URL: <http://www.culturemachine.net/index.php/cm/article/viewArticle/434>

Drucker defines interface as the content we read and the practice of reading combined through engagement, which she sees as a provocation of the cognitive experience. Thus, Drucker draws attention to the increased mutability that takes place when reading in the digital space because of the cognitive jumps between modules. She argues for a humanities approach to interface theory that integrates different forms of reading and analysis in order to allow readers to recognize the relations of the dynamic space between environments and cognitive events. She evokes the gaming world as a source to inform a humanities interface theory, since it offers combinations of perspectives.

Erickson, J., Lagoze, C., Payette, S., Van de Sompel, H., & Warner, S. "Rethinking scholarly communication: Building the system that scholars deserve." *D-Lib Magazine* 10, no. 9: 2004. <http://webdoc.sub.gwdg.de/edoc/aw/d-lib/dlib/september04/vandesompel/09vandesompel.html>

Erickson et al. ruminate on transforming scholarly communication to better serve and facilitate knowledge creation. They primarily target the current academic journal system; for the authors, this system constrains scholarly work as it is expensive, difficult to access, and print-biased. Erickson et al. propose a digital system for scholarly communication that more accurately incorporates ideals of interoperability, adaptability, innovation, documentation, and democratization. Furthermore, the proposed system would be implemented as a concurrent knowledge production environment instead of a mere stage, annex, or afterthought for scholarly work.

Fitzpatrick, K. "Beyond metrics: Community authorization and open peer review." In M. K. Gold (ed.), *Debates in the digital humanities*, 452-59. Minneapolis, MN: University of Minnesota Press, 2012.

Fitzpatrick outlines the changed needs of peer-review practices in the digital age. The current reliance of the academic system on peer-review evaluation is mismatched with the forms of intellectual engagement supported by the

Internet. Fitzpatrick encourages community-based authorization from recommendations, linking, and even likes, which are all highly valued in the digital space. She points out that the processes of current peer-review practices risk conservatism and a resistance to innovative or controversial approaches. Crowdsourcing has the potential to avoid such exclusivity, because more readers not only review the text, but also engage in dialogue with the author and with other readers. An additional benefit of crowdsourcing is the collection of measurable success data that it enables. While further work is required to identify the best practices to measure and assess engagement to determine the value of digital work (including scholarly texts as well as multimodal archives, projects, and blogs), these metrics should be used to share alternative assessment practices with the academy to encourage change in current practices regarding academic tenure and promotion.

Fitzpatrick, K. “Peer-to-peer review and the future of scholarly authority”. *Cinema Journal* 48, no. 2 (2009): 124-29.

Fitzpatrick explains that, in the digital space, decentralized and displaced authority structures are taking over, and intellectual authority is shifting to spaces such as Wikipedia. Thus, scholars need to embrace similarly open structures and public access, otherwise the academic world will appear divorced from real-world practices. For this reason, online peer-reviewed journals should not follow print practices of peer review, but must adapt and shape a new scholarly system. Current peer-review processes do not only ensure that the best work is in circulation, but also form areas of privilege. She argues for open process, web-native modes of peer review in a peer-to-peer structure. Finally, Fitzpatrick advocates for the need to articulate these values and standards to credentialing bodies in order for a more appropriate model of intellectual authorization to emerge.

Fitzpatrick, K. *Planned obsolescence: Publishing, technology, and the future of the academy*. New York, NY: New York University Press, 2011.

Fitzpatrick duly surveys and calls for a reform of academic publishing. She argues for more interactivity, communication, peer-to-peer review, and a significant move toward digital scholarly publishing. Fitzpatrick demonstrates how the current mode of scholarly publishing is unviable

economically. Moreover, tenure and promotion based primarily on traditional modes of scholarly publishing need to be reformed as well. Fitzpatrick acknowledges certain touchstones of the academy (peer review, scholarship, sharing ideas), and how these tenets have been overshadowed by priorities shaped, in part, by mainstream academic publishing practices and concepts. She details her own work with CommentPress and the benefits of publishing online in an infrastructure that enables widespread dissemination as well as concurrent reader participation via open peer review.

Guldi, J. “Reinventing the academic journal.” In D. J. Cohen and T. Scheinfeldt (eds.), *Hacking the academy: The edited volume*. Ann Arbor, MI: University of Michigan Press, 2013.

Guldi calls for a rethinking of scholarly journal practices in light of the emergence and allowances of Web 2.0. She argues that journals can reestablish themselves as forthright facilitators of knowledge creation if they adopt notions of interoperability, curation, multimodal scholarship, open access, networked expertise, and transparency regarding review and timelines. For Guldi, the success of the academic journal depends on incorporating social bookmarking tools and wiki formats. Journals should assume a progressive attitude predicated on sharing and advancing knowledge instead of a limiting view based on exclusivity, profit, and intellectual authority.

Hayles, N. K. *Electronic literature: New horizons for the literary*. Notre Dame, IN: University of Notre Dame Press, 2008.

Hayles provides a survey of the field referred to as electronic literature. Electronic literature looks at different genres and proposes a theoretical framework for the study of electronic literature that can help move this field of literary studies into the classroom. Hayles suggests that while electronic literature acknowledges the expectations formed by the print medium, it also builds on and transforms them. In addition to building on the print medium, electronic literature should be informed by other traditions in contemporary digital culture, including computer games. Thus electronic literature becomes a hybrid of various forms and traditions that may not usually fit together. Hayles outlines a wide variety of examples of electronic literature and notes that new approaches of analysis are required; in

particular the ability to “think digital” and recognize the aspects of networked and programmable media that do not exist in print literature. In electronic literature, neither the body nor the machine should be given theoretical priority. Instead, Hayles argues for interconnections that “mediate between human and machine cognition” (p. x). She sees this “intermediation” as a more playful form of engaging with the complex mix of possibilities offered by contemporary electronic literature (p. 57).

Huizinga, J. *Homo ludens: A study of the play-element in culture*. London, UK: Routledge and Kegan Paul, 1949.

Huizinga’s text on play and culture offers a thorough study and analysis of forms of play. Huizinga’s definition and characteristics of play have been widely cited among game scholars and other theorists, demonstrating the importance of his initiative to acknowledge the value of studying the meaning of play. As Huizinga carefully outlines, the characteristics of play consist of the following: play is a free activity; play steps outside of ‘real’ life; play is different from ordinary life because it is restrained by locality and duration; play consists of rules and has order; and play includes no material interests or profit. While the definition of games and play remains to be a much-debated topic, Huizinga’s categories offer an important starting point. One key term in contemporary game studies that has emerged from *Homo ludens* is the concept of the magic circle. As also indicated in the categories described above, gameplay is isolated from “real” life through locality and duration — play starts and ends, and it is limited in terms of time and space. All play occurs within the realm of these play-grounds.

Jones, S. E. “Second Life, video games, and the social text.” *PMLA* 124, no. 1 (2009): 264-72.

Jones considers the similarities between the metaverse space in games such as Second Life and the social text and Web 2.0 generally. He explains that in these game spaces tagged objects exist in relation to users (who may also be metatagged through technologies such as RFID chips), thus forming structures in which interactions unite users and objects. Jones argues that these social spaces do not exist apart from the “real world” of meaning making and production. In games such as World of Warcraft, Second Life, Spore, The Sims, and in certain alternate-reality games (ARG), collaborative

construction is already taking place to create objects and information. Jones concludes that such video game spaces provide humanists with models of networked, metatagged, multi-dimensional environments.

Jones, S. E. “Performing the social text: Or, what I learned from playing Spore.” *Common Knowledge* 17, no. 2 (2011): 283-91.

Jones examines how texts and videogames offer performative social system environments that allow for collaborative modeling towards knowledge development and acquisition. He sees videogames as social objects that, similar to texts, only attain their meaning through engagement of the player or reader, where players take on a director/metaeditor role through content creation and content sharing. He describes the environment of the simulation game Spore “as a continually reedited universe of content-objects” (p. 288). Jones goes on to compare game play in Spore to textual analysis, referring to Jerome McGann’s development of Ivanhoe as an example, and considers the ways in which both areas allow for modeling to visualize interpretation and rewriting by players. He calls for a cyberinfrastructure for the humanities that allows for interpretive consequences within a social and a structural space. In this space, players/readers/textual analysts learn through complex, collaborative modeling and knowledge is acquired through the process of manipulating representations. A textual editing environment based on this premise would remain purposefully unfixed, open, shared, and perpetually manipulatable.

Jones, S. E. *The emergence of digital humanities*. London, UK: Routledge, 2013.

Jones’ text offers a timely study of the digital humanities in the current context. Looking at the emergence of digital humanities in response to changes in culture, Jones uses William Gibson’s concept of the eversion of cyberspace as a way to describe the cultural change that has led to the current incarnation of digital humanities. Furthermore, he frames the emergence of digital humanities as a blending of textual studies and game studies. Jones provides readings of popular games such as Fez and Spore, as well as a number of indie games, to analyze the relation between digital humanities and game studies. The text concludes with an overview of

relevant practices, such as desktop fabrication, that are relevant to both gaming and digital humanities.

Kirschenbaum, M. “Digital humanities as/is a tactical term.” In M. K. Gold. (ed.), *Debates in the digital humanities*, 415-28. Minneapolis, MN: University of Minnesota Press, 2012.

For Kirschenbaum, digital humanities should be considered as a tactical term because of its notable role as a means instead of simply as an end. He argues that social media environments and interactions highlight this tactical nature. For instance, social networks and blogs (particularly Twitter) offer a space for digital humanists to engage in alternative professional interaction and dialogue. Kirschenbaum indicates, however, that Twitter’s significance exceeds the sheer presence of digital humanist users; the digital humanities community is in fact established through social media’s tendency to build reputations and status, metrically indicate influence, and aggregate information and like-minded individuals. Thus, while accepted scholarly channels and institutions continue to represent the digital humanities in a more traditional sense, the community’s tactical, online existence promotes constant change and alternative forms of professional clout.

Latour, B. “A cautious Prometheus? A few steps towards a philosophy of design (with special attention to Peter Sloterdijk).” *Networks of Design Meeting of the Design History Society*, September 3, 2008. URL: <http://www.bruno-latour.fr/sites/default/files/112-DESIGN-CORNWALL-GB.pdf>

Latour meditates on the form and function of the term design, and proposes a more comprehensive vision for the practice. Latour suggests that design practitioners focus more fully on drawing together, modeling, or simulating complexity—more inclusive visions that incorporate contradiction and controversy. He argues that we are living in an age of design (or redesign) instead of a revolutionary modernist era of breaking with the past and making everything new. Increasingly, design encapsulates various other acts, from arrangement to definition, from projecting to coding. Consequently, the possibilities and instances for design grow exponentially. For Latour, the concept of an age of design predicates an advantageous condition defined by humility and modesty (because it is not foundational or construction-based); a necessary attentiveness to details and

skillfulness; a focus on purposeful development (or on the meaning of what is being designed); thoughtful remediation; and an ethical dimension (exemplified through the good design versus bad design binary).

Liu, A. “Friending the past: The sense of history and social computing.” *New Literary History: A Journal of Theory and Interpretation* 42, no. 1 (2011): 1-30.

Liu reviews our sense of history and sociality through types of media in oral, written, and digital culture. After moving through these historical stages to identify the forms of sociality in each, Liu analyzes Web 2.0 and social computing practices. He notes that although Web 2.0 is highly connected, it has no sense of history. He attributes this to two shifts that have taken place throughout history: a move from one-to-many to many-to-many rule from a sociality perspective, and, from a temporality perspective, a shift from “store-and-forward temporality [...] into the new ideal of instantaneous/simultaneous temporality” (p. 22). However, instantaneous simultaneity can be seen as an ideological construct that proprietizes the Web 2.0 so that the sociality of simultaneity can be owned by organizations like Facebook, Twitter, and Google. Liu urges for the older sense of history, which includes forms of temporal grammar and narratology, to be a part of the Web 2.0. He uses the social-network system RoSE (Research-oriented Social Environment), a project he leads, as an example of a platform that integrates history with the Web 2.0.

Losh, E. “Hacktivism and the humanities: Programming protest in the era of the digital university.” In M. K. Gold (ed.), *Debates in the digital humanities*, 161-86. Minneapolis, MN: University of Minnesota Press, 2012.

Losh scans the instantiations of, and relations between, hacktivism and the humanities. She contends, along with scholar Alan Liu, that, through an increased self-awareness the digital humanities can actually affect real political, social, public, and institutional change. Losh examines the hacking rhetoric and actions of scholar Cathy Davidson (via the HASTAC collaboratory), the Radical Software Group and its director Alexander Galloway, and the Critical Art Ensemble, with a focus on CAE member and professor Ricardo Dominguez. Losh concludes by acknowledging criticism

of the digital humanities and suggests a solution: digital humanists should engage in more public, political collaborations and conversations.

Manovich, L. “Trending: The promises and the challenges of big social data.” In M. K. Gold (ed.), *Debates in the digital humanities*, 460-75. Minneapolis, MN: University of Minnesota Press, 2012.

Manovich elaborates on the possibilities and limitations of performing humanities research with Big Data. He asserts that although Big Data can be incredibly instructive and useful for humanities work, certain significant roadblocks impede this project. These roadblocks include the fact that only social media companies have access to relevant Big Data; user-generated content is not necessarily authentic, objective, or representative; certain analysis of Big Data requires a level of computer science expertise that humanities researchers do not typically possess; and Big Data is not synonymous with “deep data,” the type of data procured through intense, long-term study of subjects. Nevertheless, Manovich looks forward to a future where humanists can overcome these boundaries and integrate Big Data with their research aspirations and projects.

McGann, J. *Radiant textuality: Literature after the world wide web*. New York, NY: Palgrave, 2001.

McGann’s compilation of essays from 1993 to 2000 shows the development of his work in the digital edition, literary studies and interpretation, and digital scholarly work. He comes to regard critical gaming structures as environments that allow for new approaches to the above areas of study. The essays move through McGann’s understanding of the potential of the digital medium as “thinking machines” that can go beyond the material limitations of the book. He describes scholarly work, editions, and translations as performative deformation that manipulates text and supplies a perceptual presentation for the reader. McGann explores the opportunity to leverage the digital ecosystem and enable interplay between multiple fields by using markup and databases to make “N-dimensional space” accessible. The final chapter reveals how the digital game *Ivanhoe* offers such an environment. *Ivanhoe* is a digital role-playing game where a literary work is read and interpreted in a framework that combines primary and secondary texts, scholarship, and the players’ interpretations and commentaries in the same area, thus encouraging new forms of critical

reflection. McGann nominates this a “quantum field,” where textual objects and reading subjects operate within the same space that allows for algorithmic and rhetorical performative activity within rather than outside of, the object of attention.

Pfister, D. S. “Networked expertise in the era of many-to-many communication: On Wikipedia and invention.” *Social Epistemology: A Journal of Knowledge, Culture and Policy* 25, no. 3 (2011): 217-31.

Pfister argues that Wikipedia is a prime example and facilitator of contemporary many-to-many communication structures and the resultant changing nature of knowledge production. Pfister advocates for many-to-many communication as it disrupts traditional knowledge practices that depend on specialized experts to disseminate knowledge through carefully regulated channels and institutions. Furthermore, social knowledge creation spaces like Wikipedia induce productive epistemic turbulence through multivocal authorship, arguments, and collaboration. Pfister champions this networked or participatory expertise as a more democratic, representative, and less hierarchical model of communication.

Ramsay, S., & Rockwell, G. “Developing things: Notes toward an epistemology of building in the digital humanities.” In M. K. Gold (ed.), *Debates in the digital humanities*, 75-84. Minneapolis, MN: University of Minnesota Press, 2012.

Ramsay and Rockwell take up the “your database/prototype is an argument” conversation (notably championed by Lev Manovich and Willard McCarty). They assert that taking building seriously as scholarly work could productively dismantle or re-align the focus of the humanities from its predominantly textual bend. Ramsay and Rockwell advocate for installing the user, reader, or subject at the level of building. Through this socially minded conceptual and physical shift, some of the abstractions and black boxing that render digital humanities tools insufficient theoretically could be avoided or amended.

Ryan, M.-L. "Immersion vs. interactivity: Virtual reality and literary theory." *Postmodern Culture* 5, no. 1: 1994.

Ryan examines the theoretical implications of virtual reality (VR) in relation to literary theory. She notes the similarities between literary devices commonly used to create a sense of reader participation in a fictional world and the immersion and interaction devices used in VR to affect what Ryan calls "telepresence." She identifies immersion (the realistic representation) and interaction or interactivity (the ability to not only navigate but modify) as the two key features that create experiences of reality. Ryan considers VR a semiotic phenomenon and states that the VR effect is the "denial of the role of signs" (n. pag.), thus allowing for an unmediated environment by working towards the appearance of a transparent medium. She concludes that textual environments are limited in their ability to develop experiences of reality in the way VR does, because their tools of interactivity remain signs instead of physical, unmediated interactivity through the body.

Shillingsburg, P. *From Gutenberg to Google*. Cambridge, MA: Cambridge University Press, 2006.

Shillingsburg ruminates on editorial practice and his ideal digital edition: the "knowledge site." A knowledge site, in Shillingsburg's conception, is a space where multiple editions of a text could be combined in a straightforward manner. Based on his experience and knowledge of editorial practice and the mandates of the scholarly edition, he deems various elements necessary for a knowledge site, including: basic and inferred data, internal links, bibliographical analysis, contextual data, intertextuality, linguistic analysis, reception history, and adaptations. Furthermore, in keeping with the notion that digital scholarly editions have the capacity to shift the possession of the text to the users, Shillingsburg would ideally include opportunities for user-generated markup, variant texts, explanatory notes and commentary, and a personal note space. Concurrently, Shillingsburg argues that editing is never neutral, but rather an interference in the history and status of the text. The overt acknowledgement of the intrusive nature of editing is imperative for all successful scholarly editions. Since unobtrusive editing and universal texts are non-existent, scholarly editions are better conceived of as select interpretations of texts for specific means.

Vetch, P. "From edition to experience: Feeling the way towards user-focussed interfaces." In G. Egan (ed.), *Electronic publishing: Politics and pragmatics*, 171-84. Tempe, AZ: Iter. New Technologies in Medieval and Renaissance Studies, 2010.

Vetch explores the nuances of a user-focused approach to scholarly digital projects. He confers that the prevalence of Web 2.0 practices and standards requires scholars to rethink the design of scholarly digital editions. For Vetch, editorial teams' focus needs to shift to questions concerning the user. For instance, how will the user customize their experience of the digital edition? What new forms of knowledge can develop from these interactions? Moreover, how can rethinking interface design of scholarly digital editions promote more user engagement and interest? Vetch concludes that a user-focused approach is necessary for the success of scholarly publication in a constantly shifting digital world.

2. Game design-inspired learning initiatives

The instructional potential of and possibility for learning through games is not a new concept in the realm of pedagogy and teaching. Scholars and teachers have long recognized that engaging students in certain gameplay activities can capture attention, encourage focused and strategic thinking, and teach skills and knowledge. Beyond the actual playing of games, however, game-design thinking can also contribute to the structuring of successful learning environments. The entries in this section present different learning spaces in relation to game-design inspired approaches and models from game environments such as massively multiplayer online games (MMOGs) and massively multiplayer online role-playing games (MMORPGs). In doing so, the selections reveal the many ways that a pedagogical game-design inspired approach can create collaborative, engaging, and goal-oriented interactive learning environments.

Carson, S., & Schmidt J. P. "The massive open online professor." *Academic Matters: The Journal of Higher Education*, May 2012. URL: <http://www.academicmatters.ca/2012/05/the-massive-open-online-professor/>

Carson and Schmidt offer an overview of the current state and possible effects of Massive Open Online Courses (MOOCs). MOOCs have been

initiated by institutions such as Stanford and MIT, offering free, online courses that hundreds of thousands of users can enroll in at minimal additional cost to the institution. The authors describe the characteristics of MOOCs as consisting of open content, peer-to-peer interactions, automated assessment and grading, and alternative recognition or credential systems. Gamification, and specifically the use of badges, has been an approach led by the Mozilla Foundation, the MacArthur Foundation, and Peer 2 Peer University to develop a new way of acknowledging learning achievements. Carson and Schmidt speculate about the lasting changes MOOCs may bring about, such as the possibility of long-term engagement in learning (beyond the completion of university courses and degrees).

Danforth, L. “Gamification and libraries.” *Library Journal* 136, no. 3 (2011): 84-85.

Danforth defines gamification as the application of game-play mechanics in non-game settings. She contextualizes gamification as a method often used in marketing tactics in a type of rewards-based incentive program. Danforth acknowledges that gamification can be beneficial if it is engaging and encourages creative thinking. She points out its use in educational settings and sees gamification’s potential use in enhancing library skills and intellectual endeavors.

Dickey, M. D. “Game design and learning: A conjectural analysis of how massively multiple online role-playing games (MMORPGs) foster intrinsic motivation.” *Educational Technology Research and Development* 55, no. 3 (2007): 253-73.

Dickey investigates how massively multiple online role-playing games (MMORPGs) may offer structural models for the design of interactive learning environments. In her paper, she focuses on the aspects that support intrinsic motivation in MMORPGs, looking at character design and narrative, player motivation, and how narrative structure and scaffolding for problem solving encourage learning. Dickey conducts a thorough literature review and recognizes that MMORPGs are structured as collaborative, strategy-driven, multimodal, interactive environments. These attributes tie in with the objectives of interactive learning environments that seek to generate collaboration and critical thinking.

Gibson, D., Aldrich, C., & Prensky, M. (eds.). *Games and simulations in online learning: research and development frameworks*. Hershey, PA: Information Science Publishing, 2007.

Gibson, Aldrich, and Prensky's compilation of essays offers a thorough overview of the opportunities that games and simulations offer in the design of online learning environments. The book covers an array of areas, such as innovative design models, learning and instruction in networked virtual worlds and Massively Multiplayer Online Games (MMOGs), the use of simulation for discovery learning, guidelines for the development of prototypes and applications that include game and simulation approaches, game-based assessment, and the tracking and analytics capabilities that game and simulation approaches in online education offer. The collection acknowledges various fields and levels of education, thus providing a wide scope for scholars and instructors from different areas.

Jensen, M. "Engaging the learner." *Training and Development* 66, no. 1 (2012): 40.

Jensen outlines approaches, practices, and risks in using gamification for learning environments. He notes that successful gamification must elicit meaningful engagement by putting the player experience first, making the experience personally relevant, and gearing it towards the target audience. He also highlights the power of narrative. Common characteristics of player-centred games in a successful gamification environment are responsive, collaborative, ritualistic, incremental, convenient, and rewarding. Thus, gamification should be approached by thinking like game designers, rather than simply implementing decontextualized mechanisms.

Kapp, K. M. *The gamification of learning and instruction: Game-based methods and strategies for training and education*. San Francisco, CA: Pfeiffer, 2012.

Kapp offers a practical guide for readers who want to implement gamification in learning environments. Kapp provides definitions and examples of gamification, surveys individual elements and aspects of gamification and reviews them in detail, discusses the different levels of effectiveness of gamification for instructional purposes, and offers practical advice to planning the development of a gamified learning environment.

Kapp is critical of common implementations of gamification (i.e. merely placing badges into a tool, trivializing learning, or only considering basic game mechanics rather than actual game design practices). His detailed analysis and overview of gamification methods to improve learning environments provides educators and scholars with a thorough resource on the topic.

Mysirlaki, S, & Paraskeva, F. “Leadership in MMOGs: A field of research on virtual teams.” *Electronic Journal of E-Learning* 10, no. 2 (2012): 223-34.

Mysirlaki and Paraskeva develop a theoretical framework for the analysis of leadership and social interactions in Massively Multiplayer Online Games (MMOGs) and Massively Multiplayer Online Role-Playing Games (MMORPGs). Recognizing these environments as self-organized, complex systems, the authors consider how the social structures of MMOGs and MMORPGs may offer insights for the design of collaborative virtual environments. The authors focus specifically on leadership skills and how a sense of community is related to player motivation.

Squire, K. “Open-ended video games: A model for developing learning for the interactive age.” In K. Salen (Ed.), *The ecology of games: Connecting youth, games, and learning*, 167-98. The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning. Cambridge, MA: MIT Press, 2008.

Squire reviews different types of videogames, including targeted games, epistemic games, and augmented reality role-playing games. He focuses his analysis on open-ended simulation games, or sandbox games, as theoretical models for video game-based learning environments. Taking *Civilization* and *Grand Theft Auto: San Andreas* as examples, he looks at identity, competitive spaces, and experiences within those spaces, before moving on to consider more education-related insights. Squire considers how games are designed as communities for learning, forms of engagement in open-ended games in school settings, interpretations of history through games, games as learning systems, and participatory education. Based on the insights gained from this review, Squire concludes that sandbox game approaches offer educators new models and forms to enable student participation and learning.

3. Game-design models in the context of social knowledge creation tools

This section contains a sampling of 23 texts on and examples of social knowledge creation tools, social networks, game platforms, and social literary-analysis environments. It aims to offer an overview of applications and practical insights on the potential of game-design models in the development of social knowledge creation tools. Covering an array of environments, the selections below indicate not only how gameful design can incite user engagement and participation, but also the possible interoperable effects of game environments in the context of social knowledge creation. As Johanna Drucker, Steven Jones, Alan Liu, Jerome McGann, and Geoffrey Rockwell indicate, game interfaces can aid in bringing out critical awareness, enabling learning by doing (or by modeling, as Jones notes), and integrating otherwise disparate components and interactions, thus leading to deeper forms of collaboration.

Blizzard Entertainment. (2005-). *World of Warcraft*. (WoW) [videogame]. Available from <http://us.battle.net/wow/en/?->

World of Warcraft (WoW) is the world's most subscribed to massively multiplayer online role-playing game (MMORPG). Set in the universe of Warcraft, players create avatars based on different races and characters. Gameplay can consist of quests assigned by non-player characters (NPCs), setting up player-versus-environment (PvE) gameplay, or players can engage in player-versus-player combat (PvP). While WoW players can solely play individually, the formation of guilds and subsequent strategic play is common.

CCP Games. *Eve Online*. (2003-). [videogame]. Accessible at <http://www.eveonline.com>

Eve Online is a multiplayer MMORPG that takes place in a science fiction space setting. Players can assume or create one or multiple characters to navigate a galaxy set 21,000 years in the future. The galaxy consists of over 7,500 star systems that players can navigate in space ships, accessing different star systems by means of star gates. Characters can take on different races and societies, and they can engage in different professions

and activities, such as mining, trading, manufacturing, piracy, and combat. Eve Online consists of a large community of subscribers, which reached over 500,000 in 2013.

Chang, E. “Video+Game+Other+Media: Video games and remediation [Blog post].” *Critical Gaming Project*, January 9, 2012.

URL:

<https://depts.washington.edu/critgame/wordpress/2012/01/videoga-meothermedia-video-games-and-remediation/>

This blog post looks at videogames within media culture and the adaptation of games for other purposes in the context of remediation. Referring to his work with Sarah Kremen-Hicks, Chang questions whether we can only imagine new media in the frame of old media and in existing structures of information. He notes that innovation in a medium can only be based on prior innovation of technology. Within this framework, innovation may not necessarily be better, but more, which indicates the teleological refinement that takes place and recognizes the “effect of new forms on existing ones” (n. pag).

Chicago Summer of Learning. (2013). *The Source*. University of Chicago. [videogame].

The Source is an alternate reality game played by youth across Chicago during July 8th and August 16th, 2013. The game consists of a series of webisodes showing Adia, a 17-year-old African American girl, speaking through her webcam to the players. Players split into teams to solve problems and help Adia understand a letter she received. In this process, the youth playing the game engage in investigations, break codes, solve STEM-based puzzles, and engage in media production.

Crowley, D., & Selvadurai, N. *Foursquare* [social networking website and application]. New York: Foursquare, 2009. Available at <https://foursquare.com>

Foursquare is a location-based social networking application primarily developed for mobile use. The main activity consists of users “checking in” to different locations and tagging either the venue or the activity. Foursquare is built as a gamified structural mechanism that is often used as a

model for gamification. Every check in helps the user gain points, and certain tags or specific locations can earn the user badges. Users can become "mayors" of certain locations if they check in more than any other user over a certain time span.

De Carvalho, C. R. M., & Furtado, E. S. (2012). "Wikimarks: An approach proposition for generating collaborative, structured content from social networking sharing on the web." *Proceedings of the 11th Brazilian Symposium on Human Factors in Computing Systems, IHC '12*. Porto Alegre, Brazil: Brazilian Computer Society, 95-98.

De Carvalho and Furtado argue in support of what they call a Wikimarks approach in order to encourage organized, sustainable, social content creation. Based on this approach, users share online content that flows into a content repository and is subsequently categorized in a taxonomy system by the users. User participation is fostered through social interaction and extrinsic motivation. In order to motivate participation in the classification of content, the authors recommend gamification methods.

De Paoli, S., De Uffici, N., and D'Andrea, V. "Designing badges for a civic media platform: Reputation and named levels." *Proceedings of the 26th Annual BCS Interaction Specialist Group Conference on People and Computers, BCS-HCI '12*. Swinton, UK: British Computer Society, 2012, 59-68.

De Paoli et al. outline a design experience for badges in Civic Media Platforms (CMP) based on insights gained from a CMP design model called *timu* that aims to offer a framework for a participative, bottom-up information ecosystem. While acknowledging critiques of gamification, the authors argue that badges offer a way to formalize skills and reputation. De Paoli et al. review various strengths and opportunities that badges bring to civic and educational platforms: they can represent a number of different things (e.g. community membership, competence, experience, reputation); they support transferability of skills, reputation, or achievements; they trigger motivation; and they build a sense of community among participants.

Drucker, J. “Designing Ivanhoe.” *TEXT Technology* 2 (2003): 19-41.

Drucker charts the interface design approach that was used in the development of the Ivanhoe project that she worked on with Jerome McGann. The objective was to challenge usual design practices and their assumptions about clarity and communication. Instead of designing Ivanhoe based on the structuralist premise that visual presence and graphical form are self-evident, Drucker used a theory-driven approach that allows for the interface to be conceived of as dialogic and networked, generative and procedural, emergent, relational, iterative, dialectical, and transformative. Ivanhoe is designed so that critical awareness is not only a part of the game (through the textual studies perspective), but the interface itself is based on critical awareness and theoretical insights.

Drucker, J., & McGann, J. *Ivanhoe*. SpecLab, 2000.

URL: http://www.ivanhoegame.org/?page_id=21

Ivanhoe is an online game environment where multiple readers collaboratively read, interpret, and reflect on a literary text. Similar to other role-playing game (RPG) environments, players take on alternate identities to perform their reading and interactions with each other. This structure encourages players to be aware of the ways in which acts of interpretation are formed, encouraging reflection on the meaning of such acts. Thus, the game enables collaborative interpretation of the selected text as well as critical reflection of the interpretive process itself. The gamespace, or bookspace, consists not only of the primary literary text that the game is structured around, but combines multiple primary and secondary texts, player contributions, and computer generated process in the same sphere.

Galloway, A., Kane, C., Parrish, A., Perlin, D., DJ /rupture, Shadetek, M., and Zer-Aviv, M. *Kriegspiel*. RSG. New York University. [videogame].

Accessible at <http://r-s-g.org/kriegspiel/index.php>

Kriegspiel is a game designed by Galloway and the RSG collective of programmers and artists. It is based on Guy Debord's game of the same name. Debord first produced a limited edition of the game in 1977. He developed a full rulebook, a mass-production of the game made of cardboard and wood tiles, and a book that he co-published with Alice

Becker-Ho in 1987. Kriegspiel, which means “war game” in German, is a chess-variant war game that consists of 500 squares and is played between two opposing players. The players each control an army that tries to destroy the opponent’s army. The digital game developed by RGB is an attempt to situate Debord’s game in a contemporary landscape.

Jakobsson, M. “The achievement machine: Understanding Xbox 360 achievements in gaming practices.” *Game Studies International Journal of Computer Game Research* 11, no. 1: 2011.

Jakobsson scans the achievements environment in Xbox 360 games. In this console gaming environment, multiple individual games are combined into a total score or achievement level that is visible to other players, similar to the structure of massively multiplayer online game (MMO) environments. The achievement system offers a specific approach that provides extrinsic rewards that can be seen by others and thus function as external motivators. Comparing MMO game environments and console gaming, Jakobsson notes that both have similar properties, such as persistence, coveillance, and open-endedness. Jakobsson concludes that, although the achievements system in Xbox games follows rewards system approaches, it functions like a MMO game that all Xbox Live members participate in.

Kopas, M. *lim*. 2012. [videogame]. Accessible at <http://mkopas.net/2012/08/lim/>

Kopas’ game *lim* requires the player to move a square through a structure of other squares (using the arrow keys) and to take on the colour of other squares in order to fit in and avoid attack. Built in Construct 2, a DIY game-making platform, *lim* offers a superb example of the ways in which game mechanics can make arguments. While highly abstract, the game clearly communicates certain feelings such as distress and not fitting in that are important to the topic of liminality.

Maxis and The Sims Studio. *The Sims*. Electronic Arts, 2000. [videogame]. Available from <http://www.thesims.com/en-us>

The Sims is a best-selling strategic, life simulation video game that consists of a main series and a variety of spin-offs. It is structured as a sandbox game in which players create people called “Sims.” The gameplay consists of

helping these “Sims” live in their houses, engage in daily activities, and satisfy their desires.

Maxis. *Spore*. Electronic Arts, 2008. [videogame]. Available from <http://www.spore.com/ftl>

Spore is a multi-genre, single-player god game wherein the player develops a species and aims to achieve certain objectives in different stages of development of the species. The way that each stage is played determines new characteristics that the species obtains for the following level. Spore consists of several genres, including action, strategy, and role playing game (RPG). The species that players create can be loaded to Sporepedia online, allowing other players to download them.

McGann, J. “Like leaving the Nile. IVANHOE, a user’s manual.” *Literature Compass* 2 (2005): 1-27.

In this user manual for the online literary-analysis game Ivanhoe, McGann explains why he considers it imperative that humanities activities such as text analysis and interpretation move into and embrace the digital space. While recognizing that humanities and social sciences material must be treated as information at the computational level, he argues that such materials must also be treated as knowledge at the “level of perception and thought—at the level of their human uses” (p. 4). Ivanhoe is structured as an online gamespace where multiple readers can explore and interpret a text in a manner that visualizes the interpretations and shows interrelations between the players, moves, and documents. Thus Ivanhoe allows for interpretation to take place on two levels: through interpretation of the documents that are being studied and interpretation of the critical thought of the players participating. McGann explains the functions and interactions of the game by walking through a textual mockup of an actual gameplay as an example.

Meier, S. *Civilization*. MicroProse, 1991. [videogame]. Available from <http://www.civilization.com>

The Civilization series is a turn-based strategy game in which players construct, control, develop, and manage an empire. The player rules the civilization, builds cities and expands the empire, and at times has to engage

in warfare and protect the empire. The culture, technology, and intellectual state of the civilization develops as the empire evolves.

Mojang and Microsoft Studios. *Minecraft*. 2011. [videogame].
Available from <https://minecraft.net>

Minecraft is an open-world, or sandbox, game that allows for players to engage in activities outside of specific goals. The main activity in the game is to build constructions within a grid system using blocks that consist of a variety of materials. Players most commonly play in the first person, but Minecraft also allows for third person gameplay. The game contains an optional achievement system, and players can choose to play in a survival mode or a creative mode, thus enabling different types of activities.

Polytron Corporation. *Fez*. 2012. [videogame].
Available from <http://polytronicorporation.com/61-2>

Fez is an indie puzzle and platform game developed by Polytron for Xbox Live Arcade. The game is unique in that it is a 3D world played from a 2D perspective. Gomez, the player character, starts out in a 2D world, but he receives a hat that allows him to enter the third dimension. Thus the player can rotate 90 degrees across four sides of the world to move through it. The goal of the game consists of collecting 32 cubes to reconstruct the hexahedron that existed in Gomez' world at the beginning of the game. In this pursuit, the player moves through the world, finds secrets, and solves puzzles; however, Gomez does not fight enemies, and, although death can occur, there is no penalty for it.

Rockwell, G. "Serious play at hand: Is gaming serious research in the humanities?" *TEXT Technology* 12 (2003): 89-99.

Rockwell examines the role of games in academic research within the humanities. Referring to the theories of Wittgenstein, Huizinga, Gadamer, and others, Rockwell conducts an investigation of the game Ivanhoe (a game environment for collaborative interpretation of literary texts) to show how the humanities can combine gaming and research. He depicts Ivanhoe as a model that shows how a game environment can enable a number of beliefs of "what criticism should and could be in the context of learning and

collaborative research” (p. 93), while bringing playfulness into humanities activities.

Rockstar Games. *Grand Theft Auto (GTA)*. 1997. [videogame].

The Grand Theft Auto (GTA) series is an open-world action-adventure driving game. Players take on characters who usually try to rise in the ranks of organized crime. Structured as a sandbox game, GTA is set in urban environments with fictional names, although they are based on US cities and states. The game action is primarily organized around vehicles, drivers, pedestrians, and traffic signals. However, gameplay goes far beyond driving, and player characters can choose which missions they complete and how they interact with other characters.

Stack Exchange Network. *Stack Overflow*. 2013. [website]. URL: <http://stackoverflow.com>

Stack Overflow is a free programming Q&A site that allows users to build their reputation in order to gain more access and privileges. The site aims to offer an environment that allows programmers to ask relevant questions and receive helpful answers while discouraging irrelevant content. Structured as a user-built and -run environment, the curation and development of relevant content is encouraged through gamification methods. Within the Q&A framework, the best answers are displayed at the top of the list of responses. Users can vote up each other’s contributions. As a user’s questions, answers, and edits are voted up, that person’s reputation score increases. The higher the reputation score, the higher the user’s access privileges. Users can also earn badges for certain achievements and forms of participation.

Zynga. *FarmVille*. Facebook and HTML 5, 2009 and 2011. [videogame]. Available at <http://company.zynga.com/games/farmville>

FarmVille is a social network game that leverages the Facebook environment. Gameplay consists of the management of a farm that players maintain by plowing land, raising livestock, and planting, growing, and harvesting crops. Players have an avatar and can interact with their friends through Facebook. Players earn farm coins through certain actions or by obtaining enough experience points to move up levels, or farm points can

be purchased for real money. Players are encouraged to interact with friends by visiting each other's farms or joining efforts by forming co-ops. Ian Bogost's game *Cow Clicker* satirizes *FarmVille* and similar games.

4. Defining gamification and other game-design models

Gamification is discussed, studied, and applied across a wide range of fields, from marketing to pedagogy to human resources. Further, game elements such as badges and achievements have inspired alternative recognition systems within non-game scholarly contexts to increase participation. A number of critics from within the humanities have condemned such use of gamification for corroding the motivation knowledge activities produce intrinsically. It is also argued that the processes of gamification attenuate the inherent power of full games to convey knowledge, make arguments, and accomplish other meaningful things (Bogost, 2011). An array of definitions and descriptions of gamification prevail and cause confusion: Zicherman and Cunningham (2011) offer a fairly broad definition of gamification as “game-thinking and game mechanics to engage users and solve problems” (p. XIV), while Sebastian Deterding et al. (2011) differentiate gamification from similar approaches by defining it as “the use of game design elements in non-game contexts” (p. 9). Other theorists wishing to retain gamification as a sociological or media theory concept—to account, for instance, for the unique experiential phenomenon of “flickering” between game and non-game contexts (Deterding, Dixon, Khalad, & Nacke, 2011)—have developed terminology distinguished from “gamification” and may aim to limit its range of applicable techniques to the use of non-achievement related game elements within scholarly knowledge environments. Many scholars, including Deterding and Ian Bogost, argue for alternative terminology in order to distance academic uses of gamification from the controversial or exploitative examples often found in the marketing world. For the purpose of specificity in the context of this bibliography, we follow Deterding's definition and use *gameful design*, *game-design thinking*, and *game-inspired approaches* to refer to our suggested broader use of game-related methods and strategies in non-game environments.

Bogost, I. "Persuasive games: Exploitationware [Blog post]." *Gamasutra*, May 3, 2011. URL: http://www.gamasutra.com/view/feature/6366/persuasive_games_exploitationware.php

Bogost asserts that the power of gamification lies in the term's rhetorical effect, which diminishes how "hard" games actually are and simplifies the field of gaming to make it applicable in multiple contexts. Bogost states that gamification as it currently appears in corporate and marketing platforms should be replaced with the term "exploitationware," since it substitutes real incentives with fictional ones, thus creating exploitative relationships between company and consumer. In his pursuit to rid the industry of exploitative gamification, Bogost invokes the term "games-as-systems" to supersede gamification with alternatives that do "real, meaningful things with games" (n. pag.).

Deterding, S., Dixon, D., Khalad, R., & Nacke, L. "From game design elements to gamefulness: Defining 'gamification.'" *MindTrek '11 Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*. New York: ACM, 2011, 9-15.

Deterding et al. investigate gamification methods in order to define gamification and contrast it to other concepts like pervasive games, alternate reality games, and serious games. The authors outline the industry origins and precursors of gamification to indicate how contended the term is. They define gamification as "the use of game design elements in non-game contexts" (p. 9). Deterding et al. argue for the appropriateness of this definition because it focuses on games, not play; indicates that it consists of elements of games, rather than being structured as full games, as serious games would be; constricts gamification to game design elements, rather than game-based technologies or practices; and contextualizes gamification outside of games for pure entertainment. They suggest that "gameful design" may be a better term to use in place of "gamification" within academic discourses.

Douma, M. “What is gamification?” *Idea*, October 20, 2011.

URL: <http://www.idea.org/blog/2011/10/20/what-is-gamification/>

Douma defines gamification as “adapting game mechanics into non-game setting — such as building online communities, education and outreach, marketing, or building educational apps” (n. pag.). While differentiating between gamification, serious games, and playful interaction, Douma does allow for some leeway as to what defines gamification. He outlines numerous ideas and approaches for gamification, such as levels, cascading information theory, community collaboration, loss aversion, quests/challenges, and infinite gameplay. Badges, trophies, and points are discussed in the most detail. He notes that badges offer psychological functions such as setting goals, instruction, reputation, status and affirmation, and group identification, but in addition to badges as external motivators, they also need to be a part of a narrative and offer personalized, goal-oriented engagement.

Graham, A. “Gamification: Where’s the fun in that?” *Campaign* 47: October 29, 2012. URL:

<http://www.campaignlive.co.uk/news/1156994/>

Graham defines gamification as “the use of game thinking and game mechanics to enhance non-game contexts. By skillful use of game elements, it is possible to hugely increase engagement across myriad diverse applications” (n. pag.). While he notes that it is possible to gamify anything, the majority of gamification examples simply follow a formulaic pattern set by the Foursquare model, which uses points, badges, leaderboards, and prizes as incentives for participation. Instead of following this process, Graham urges practitioners to consider the extensive array of game-design approaches available, and to determine which ones would be the most successful in inciting player flow based on the target audience’s triggers and motivators.

Groh, F. “Gamification: State of the art definition and utilization.” In Naim Asaj, et al. (eds.), *Proceedings of the 4th Seminar on Research Trends in Media Informatics*. Ulm, Germany: Institute of Media Informatics Ulm University, 2012, 39-46.

Groh reviews the definition of gamification developed by Deterding et al. and analyses the opportunities and problems gamification offers in the context of self-determination theory. He points out the differences between game (ludus) and play (paidia), differentiates gamification from “serious games” (“which are full-fledged games for non-entertainment purpose,” rather than game elements), and notes how such game design elements can be used to enhance other applications (pp. 39-40). Groh presents the ways in which the values of relatedness, competence, and autonomy inherent in self-determination theory are also key components for gamification to be effective.

Jagoda, P. “Gamification and other forms of play.” *Boundary 2* 40, no. 2 (2013): 113-44.

Jagoda discusses the ubiquity of games in different digital contexts and explores gamification in particular. Defining gamification as “the use of game mechanics in traditionally nongame activities” (114), Jagoda sees gamification as an approach that uses game mechanics and objectives to function as an interface between work, leisure, thought patterns, affects, and social relations common in the current overdeveloped world and “the real” (116). This gamified world, Jagoda argues, differs from a society oriented around the production of what Guy Debord called “spectacles.” Rather than relying on one-directional representations, the gamified world is structured in a two-directional, many-to-many format that encourages engagement through customization and user-generated content. While Jagoda acknowledges that gamification perpetuates the productive, capitalist hierarchy, he also notes that game-based approaches can function to resist those exact socioeconomic structures. He analyses three games that problematize gamification: SPENT (2011), Third World Farmer (2006), and Thresholdland (2010). These games, rather than perpetuating a false sense of triumph and winning, draw attention to the failure that the majority of people experience in contemporary capitalism, thus functioning as critiques not only of the capitalist system, but also of gamification. Thus, Jagoda shows that although games and gamification in many ways perpetuate

dominant socioeconomic hierarchies and exploitation, game-based approaches can also function as forms of resistance.

Ritterfeld, U, Cody, M., & Vorderer, P. (eds.). *Serious games: Mechanisms and effects*. New York, NY: Routledge, 2009.

Ritterfeld, Cody, and Vorderer explore how games can encourage learning in the real world. The editors define serious games as “any form of interactive computer-based game software for one or multiple players to be used on any platform that has been developed with the intention to be more than entertainment” (p. 6). Organized into four sections, the chapters explore the psychological mechanisms of serious games and how they facilitate learning, development, and change in a variety of areas, including health care, human rights, education, research, and immigration.

Rose, F. *The Art of Immersion*. New York, NY: Norton, 2011.

Rose explores how the Internet changes storytelling. He argues that while stories in other media also appear in patterns that we make meaning out of, the Internet communicates narratives in a unique way, changing how we communicate, create, consume, and engage with content. Rather than communicating stories as sequential narratives, the Internet allows for stories to be communicated in a nonlinear, participatory, game-like, and immersive way. This allows for deeper engagement with stories where distinctions between author and audience, story and game, entertainment and marketing, and fiction and reality become increasingly blurred.

Zichermann, G., & Cunningham, C. *Gamification by design: Implementing game mechanics in web and mobile apps*. Sebastopol, CA: O’Reilly Media, 2011.

Zichermann and Cunningham’s work targets marketers, corporate brand and product managers, and application designers. The authors demonstrate the ways in which gamification can be utilized in digital applications in order to acquire and engage consumers and users, shifting from traditional loyalty programs to engagement platforms. They define gamification as “the process of game-thinking and game mechanics to engage users and solve problems” (p. XIV). Zichermann and Cunningham outline areas of game

fundamentals that focus on player motivation, game mechanics, design practices, and integration of social interactions. The book contains case studies of companies that apply gamification as well as tutorials to develop game mechanics.

5. Game-design models and the digital economy

Within academic discourse, gamification has provoked heated debates and strong criticism as videogames, and particularly the objectives of gamification, epitomize the play/labour dichotomy. The 15 texts below offer varying views of the digital economy with the aim to engender critical approaches to potential implementations of gamification. While some scholars are highly skeptical of gamification, we believe that game-design models can be used in an ethical and transparent manner. Rather than applying game approaches in an exploitative manner, we see the potential for game-inspired design practices to offer methods that encourage self-reflexivity, critical thinking, and creative engagement. The digital economy in general, and videogames in particular, often bear challenges as to how to engage scholars and the public in an ethical manner—especially concerning the blurring boundaries between labour and play, entertainment and payment. Furthermore, social shifts in the value and forms of attention are taking place (see Jonathan Beller and N. Katherine Hayles), and the study of game environments is being reformulated and problematized by approaches such as object-oriented ontology and procedural rhetoric (Ian Bogost). Taking these discourses into consideration, the challenge will be to develop uses of gameful design that not only overcome these issues, but contain responses and solutions to them.

Beller, J. *The cinematic mode of production: Attention economy and the society of the spectacle*. Hanover, NH: Dartmouth College Press, 2006.

Beller posits cinema (as well as television, video, computers, and the internet) as the dominant mode of production in global, postindustrial capitalism. He contests that new media functions as a deterritorialized factory wherein spectators engage in value-productive labour. Beller explains that the commodification of experience and leisure time emerges because the exchange value of a commodity increases the more the commodity

“image” gets consumed. Furthermore, the spectator or consumer performs the labour of a worker, because watching becomes a productive labour act for which the spectator is “[paid] in fun (know-how, anesthesia, acquired stupidity, fashionability, enjoy[n]ment),” thus providing surplus labour beyond normal working hours (p. 13). Beller provides numerous examples to demonstrate how this process takes place in current capitalist environments.

Beller, J. “Paying attention.” *Cabinet* 24: 2006-2007.

URL: <http://www.cabinetmagazine.org/issues/24/beller.php>.

Beller argues that attention is a commodity in the current neoliberal, global capitalist economy. In today’s media landscape, attention constantly gets traded for information, whether in the form of media buyers in the advertising industry, in the economy of entertainment (i.e. cinema, videogames, et cetera), or through content and information sharing in social networks. Not only is attention a commodity, but it can be seen as productive labour, since attention produces capital. Using cinema as an example, Beller explains that the attention economy relies on the visual gaze and subsequent value production through the viewer; he describes this as a process wherein surplus value is extracted from spectators in deterritorialized factories that produce value for media companies. This process enables productive labour as well as the social cooperation necessary to maintain the capitalist hierarchy.

Bogost, I. *Alien phenomenology, or, what it’s like to be a thing*. Minneapolis, MN: University of Minnesota Press, 2012.

Bogost proposes a form of study that goes beyond the way objects relate to humans. Rather than considering ideas as more valuable than “stuff” and our sense of being as the only way of being, Bogost suggests that we should begin to look at things through relations between object and object. In object-oriented ontology (OOO), things are at the centre of being, everything exists equally, and nothing (including humans) has special status. As an alternative term to OOO, Bogost suggests “unit operations.” Unit does not imply a subject and also does not require materiality. Similarly, the term operations more accurately describes the processes in which all units behave and interact. Through the approaches of ontography (what reveals

the object's existence and relations) and metaphorism (using metaphor to speculate about the unknowable), the phenomenology of units (or things or objects) can be studied, described, and analyzed while recognizing that we as humans cannot actually know what it means to be a thing. An OOO approach suggests a new form of humanism that does not rely on the correlational system of humans.

Bogost, I. *Persuasive games: The expressive power of videogames*. Cambridge, MA: MIT Press, 2007.

Bogost details his theory that videogames are an expressive media that make arguments through procedural rhetoric. He describes procedural rhetoric as “the practice of persuading through processes in general and computational processes in particular” (pp. 2-3). According to Bogost, procedural computer representation differentiates itself from textual, visual, and plastic representation in that it is the only system in which process can be represented with process. He focuses on persuasive games, which he defines as “videogames that mount procedural rhetorics effectively” to influence players (p. 46). Bogost reviews in detail the persuasive capabilities of videogames in the realms of politics, advertising, and education from a theoretical and a game-design perspective.

Dyer-Witheford, N., & de Peuter, G. *Games of empire: Global capitalism and video games*. Minneapolis, MN: University of Minnesota Press, 2009.

Dyer-Witheford and de Peuter argue that videogames are a media of Empire—Michael Hardt and Antonio Negri's notion of a hypercapitalist sphere where the economic, cultural, and political issues of global capitalism take place in the same way as in the physical world. Dyer-Witheford and de Peuter's political critique of videogames assumes that “a media that once seemed all fun is increasingly revealing itself as a school for labor, an instrument of rulership, and a laboratory for the fantasies of advanced techno-capital” (p. xix). Drawing from Hardt and Negri, autonomist Marxism, and poststructuralist radicalism, the authors note the capitalist domination in videogames in the form of “network power,” with multiple institutional agencies shaping and participating in the video game space. Virtual games are examples of Empire that highlight its constitution and

conflicts, maintaining it and, at times, offering the space to challenge and rebel against it.

Feenberg, A., & Grimes, S. M. "Rationalizing play: A critical theory of digital gaming." *The Information Society* 25, no. 2 (2009): 105-118.

URL:

<http://www.tandfonline.com/doi/abs/10.1080/01972240802701643#>.

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Feenberg and Grimes propose their theory of socially rationalized games through an analysis of World of Warcraft. They suggest that the societal forms of motivation developing systemically out of MMOGs progressively diminish the "playfulness" associated with the discovery-based motivation intrinsic to these environments. Like Deterding et al., Grimes and Feenberg acknowledge their dependence on Caillois' distinction between ludus and paidia in developing their case for videogames as systems of social rationality which change the experience of play through the forms of standardization that occur in their large-scale use (p. 109).

Galloway, A. R. *Gaming: Essays on algorithmic culture*. Minneapolis, MN: University of Minnesota Press, 2006.

Based on the argument that "video games are actions" (p. 2), Galloway develops a four-part system that incorporates theoretical insights while treating videogames as a material object, regarding it as an active and material medium. Following these assumptions, Galloway differentiates between machine actions (by the computer software and hardware) and operator actions (by the players). Furthermore, he recognizes that games are made up by diegetic space (the sphere of narrative action) and nondiegetic space ("gaming elements that are inside the total gamic apparatus yet outside the portion of the apparatus that constitutes a pretend world of character and story") (pp. 7-8). Between these categories emerge four game actions that comprise Galloway's system: the diegetic machine act, the nondiegetic operator act, the diegetic operator act, and the nondiegetic machine act. Building on this structure, the chapters provide examples of videogames and other media and look at gaming practices to analyze videogames as a cultural form that is actively played rather than read or watched.

Hayles, N. K. “Hyper and deep attention: The generational divide in cognitive modes.” *Profession* 1 (2007): 187-99.

Hayles examines the differences in cognitive styles between deep attention and hyper attention. Deep attention, common in the humanities, concentrates on a single object for an extended period and ignores other stimuli. Hyper attention switches the focus of attention rapidly and requires stimulation. Rather than advocating for one or the other cognitive mode, Hayles calls for a change in education systems that allows for both types of attention. Hayles notes that hyper attention can still be focused on single activities for long periods of time, i.e. in videogames. Videogames, however, offer high levels of stimulation through the escalating series of rewards that players experience. As video game research has indicated, “stimulation works best [...] when it is associated with feelings of autonomy, competence, and relatedness,” which offers important insights for educators, especially when taking into consideration the digital space and how technology can be used in pedagogical environments (p. 195). Hayles offers examples of possible approaches to show that critical interpretation and practices common in the humanities can be taught to and applied by all students, whether they are more comfortable with hyper attention or deep attention, if presented in the right way.

McGonigal, J. *Reality is broken: Why games make us better and how they can change the world*. New York, NY: Penguin, 2011.

McGonigal’s book revolves around the bold statement that “reality, compared to games, is broken” (p. 3). Drawing upon her own experiences as an independent game designer (see worldwithoutoil.org) and building on definitions of games and utopia from the work of Bernard Suits, McGonigal argues that the global ascendance of videogames as a cultural form signals a “purposeful escape” from established societal structures. In McGonigal’s view, videogames are fulfilling genuine intrinsic human needs—teaching, inspiring, engaging, and building communities—in ways that reality is no longer able to. Games and game design are not just a pastime and a craft, but instead offer current ways of thinking and leading in order to effect real changes in the world. McGonigal contends that as “reality is broken,” video game designers must set out to recreate it.

Nakamura, L. “Don’t hate the player, hate the game: The racialization of labor in *World of Warcraft*.” *Critical Studies in Media Communication* 26, no. 2 (2009): 128-44.

Nakamura analyzes the racialization of informational labor in massively multiplayer online games (MMOGs) generally and *World of Warcraft* specifically. Chinese player workers, discriminately called “Chinese gold farmers” in the player community, are racialized and dehumanized by other *WoW* players. Nakamura analyzes examples of machinima that negatively present and attack Chinese player workers, such as the well-known machinima “Ni Hao.” She points out the many ways in which these user-generated videos produce racist narratives that rely on the game world and thus distance themselves from “real world” racism. Gold farming as a labor practice, Nakamura indicates, also shows the reality of the exploitative digital economy and informationalized capitalism. Immaterial labor that often gets treated as play in fact becomes pure, real work for gold farmers who work 12-hour shifts in factory-like settings for incredibly low wages. These worker players do not have the opportunity to “play” the game that they are experts in. While other players have the opportunity to fully engage in the games as a leisure activity and even produce additional game-related content — such as the racist, dehumanizing machinima that Nakamura analyses — for fun, the player worker does not have the opportunity to engage with the game in such a way. Instead, they become disliked, racialized, discriminated non-player characters.

Nakamura, L. “‘Words with friends’: Socially networked reading on Goodreads.” *PMLA* 128, no. 1 (2013): 1-11.

Nakamura looks at the shift toward electronic literature, noting not only the move from p-books (print books) to e-books, but also asking in what ways reading is changing in digital environments. Rather than relying primarily on the hardware contexts of digital environments, digital reading follows social media in claiming a more service-based nature. Nakamura points out that books have always promoted forms of social networking, and especially in the current digital generation she predicts a continuation of such social behavior. Goodreads provides a highly developed example of what a social, digital reading environment can look like: it contains social networking elements (an inbox, notifications, a status ticker), links to other social networks, includes invitation generators to add friends, and it can be used in

the format of different apps. Bookshelves are public and reading data is shared, allowing for a variety of social forms of engagement. However, Nakamura notes that this also turns users into “objects to be collected” (6) — by participating in an environment like Goodreads, users share their data and become objects in a database. Thus the reader becomes a labourer by engaging in activities that combine play and labour. Although Goodreads positions itself as a “passive conduit” that facilitates folksonomic creation and individual contribution, Nakamura highlights that reading is a social, economic, and cultural activity that is never passive.

Schenold, T. “The ‘Rattomorphism’ of gamification.” *Critical Gaming Project*, November 19, 2011.

URL:<https://depts.washington.edu/critgame/wordpress/2011/11/the-rattomorphism-of-gamification/>

Schenold offers a strong critique of gamification, using the notion of “rattomorphism” (termed by Arthur Koestler and applied by Alfie Kohn) to describe the common rewards- and incentive-driven conditioning. While such an approach may be effective in the short term, Shenold likens it to “digital meth,” arguing that the incentivized activities of gamification quickly become corrosive and any form of attentiveness or creativity that the user may have been engaged in falls apart quickly. Finally, Shenold points out that there is no game layer, because games cannot merely be stripped to assemblages of techniques. Instead, there are rewards layers or feedback layers that may draw inspiration from games, but merely “address our inner rat, not our inner ‘gamer’” (n. pag.).

Scholz, T. (ed.). *Digital labor: The internet as playground and factory*. New York, NY: Routledge, 2013.

This collection of essays examines the current digital space as a labour site or factory, and what implications this structure—dominated by profit-driven, oligarchic owners—has on the digital worker today. The authors recognize a continuation of traditional economies in the digital space, which enables free labour that may not seem like labor at all. While the social web may appear free, users pay through their participation and with their data, ultimately being sold as the product that they also consume. This raises the question of the difference between work and play, since digital activities often make it difficult to differentiate between nonproductive leisure activity

that consists of play and productive activity that is part of the workplace. Playbor (play/labor) is an aspect of the gift economy, where users do something for nothing for fun. Notably, McKenzie Wark cautions against the rhetoric of gamification, arguing that it is a simulation of the gift economy, since it extracts labor in the form of play within a reciprocal structure that is not driven by the players but by the business requirements.

Suits, B. *The grasshopper: Games, life and utopia*. Introduction by Thomas Hurka. Peterborough, ON: Broadview Press, 2005.

This philosophical dialogue, originally published in 1978, has been recognized as a highly relevant work on games from the twentieth century. The book suggests that Wittgenstein's conception of games as sharing certain "family resemblances" is insufficiently clear. Suits conceives playing a game as "the voluntary attempt to overcome unnecessary obstacles" (p. 157). A game is comprised of a goal, means of achieving the goal, rules, and what Suits calls the "lusory attitude," or the acceptance by players of "rules which prohibit use of the most efficient means for reaching a prelusory goal" (p. 52). To play a game, according to Suits' complete definition, "is to attempt to achieve a specific state of affairs [prelusory goal] using only means permitted by rules [lusory means], where the rules prohibit use of more efficient in favour of less efficient means [constitutive rules], and where the rules are accepted just because they make possible such activity [lusory attitude]" (pp. 54-55).

Wark, M. *Gamer theory*. Cambridge, MA: Harvard University Press, 2007.

Wark engages in a theoretical discourse of the gamespace of our everyday by discussing concepts of meaning, space, nuanced thinking, the work/play dichotomy, subjectivity, and resistance or social change through examples of videogames. Wark regards the "real world" as divided into games, thus deeming it a "gamespace" that exists everywhere. Because of this spread of the gamespace, play has become work and work has become play. In order to engage in a critical theory of action, Wark presses for play from within the game against gamespace. Wark encourages an active approach to theory that overcomes social binaries such as work/play by engaging in gamer subjectivity to "[go] further and further into gamespace [until we] come out

the other side of it” and get beyond it (p. 224). Thus, Wark encourages a form of play in and against gamespace that conceives of new concepts.

6. Game-design insights and best practices

Game design became a point of contention for literary scholars who first sought to assess electronic games and hypertext-based literature as artistic forms. By the late nineties, discourse had largely polarized into a camp of narratologists who followed Janet Murray in evaluating video game design as a type of storytelling, and ludologists allied with Jesper Juul who considered interactivity the principal hallmark of the new art. Bridging this divide, Aarseth (1997) examined electronic hypertexts and virtual games taxonomically, as a novel, computational, branch of “ergodic literature”—texts demanding non-trivial effort from the reader to construct meaningfulness. The following selections cover game-design approaches, best practices, models, and how-tos. Salen and Zimmerman’s *Rules of Play*, Bjork and Holopainen’s *Patterns in Game Design*, and Galloway’s *Gaming* offer extensive overviews of video game studies and game design, providing insights to practices from game studies and the gaming industry. The entries specifically discussing gamification have been selected based on impact, reception, and critical perspective. Gamification should not consist of the mere addition of game elements into existing platforms, but must be approached from a game-design perspective in order to be successful. Thus, the selections below aspire to provide a broad overview of examples, instructions, and approaches to inform practitioners of the possibilities of game-design thinking in social knowledge creation tools and environments.

Aarseth, E. “A narrative theory of games.” *Proceedings of the International Conference of the Foundation of Digital Games, ACM, FDG’12, 2012, 129-133.*

URL: <http://dl.acm.org/citation.cfm?id=2282365>

Aarseth considers the foundational debate that took place in game studies between “narratorologists” who followed Janet Murray in approaching videogames and electronic texts as stories, and “ludologists” who contended with Jesper Juul that the computer game is not simply a narrative medium. Aarseth sees videogames as a combination of games and stories through software, one that can result in a variety of ludo-narratological constructs.

This ludo-narrative designspace consists of four dimensions: world, objects, agents, and events (130-131). Interestingly, Aarseth sees agents/characters as the most important one of these dimensions in videogames, which offers a key difference from other narrative environments.

Anthropy, A. *Rise of the videogame zinesters: How freaks, normals, amateurs, artists, dreamers, dropouts, queers, housewives, and people like you are taking an art form back.* New York, NY: Seven Stories Press, 2012.

Anthropy calls for more people to make videogames in order to broaden the perspectives communicated through videogames and thus push against the exclusive nature of current videogame culture. She argues that the current videogame scene and the history that has led to it is highly dominated by a small group of people – educated men who have grown up playing games and then decided to become game designers. Because of this, most games communicate stories and experiences from that male perspective. Thus games lack diversity. Since games are particularly good at exploring dynamics, relationships, and systems, Anthropy defines games as “an experience created by rules” (43-46). The player must play the game in order for it to take place, thus it is through the player interaction with the rules that it becomes a game. Based on this requirement for interaction, the game creator tells stories not just through the content, but also through the design and the system of the game. Highly personal, complex stories can be told in this way, which is why Anthropy highlights the importance of bringing in more perspectives. In order to facilitate this, Anthropy describes different forms of hacking, modding, and game development that do not require any coding knowledge or particular design skills. Game design tools are becoming increasingly available and accessible for wider audiences. Thus Anthropy calls for the rise of videogame zinesters — hobbyists, makers, and players who express their stories in the form of videogames.

Bjork, S, & Holopainen, J. *Patterns in game design.* Hingham, MA: Charles River Media, 2005.

Bjork and Holopainen outline an approach to game design that considers elements of games as game design patterns that can be analyzed and applied. This toolset offers game designers and scholars a language to talk about the elements of gameplay, which is currently lacking. The book is organized into

types of game design patterns. Bjork and Holopainen explain that design patterns are useful for analytical purposes of existing games or prototypes and for game design during the creation of games, since they can help at the stage of idea generation and structure the development of game concepts. The authors aim to construct a language based on interactions, rather than narratology, as has been common in game studies in the past and used concepts from narrative fields like film, theatre, and literature.

Bogost, I. *How to do things with videogames*. Minneapolis, MN: University of Minnesota Press, 2011.

Bogost provides an overview of the many different applications of videogames. He demonstrates that combinations of applications reveal that the medium of videogames is much broader, richer, and more relevant than generally acknowledged. The extensive scope of videogames indicates that they should not be simplified and regarded as a medium for leisure or productivity, but recognized as a medium that offers a wide range of potential uses.

Caillois, R. *Man, play, and games*. Chicago, IL: University of Illinois Press, 2001.

Roger Callois' influential *Man, play, and games* assesses social practices as rule-bound games that serve to limit freer forms of play within cultures. Structures of games culturally acknowledged as such (e.g. chess) derive from outmoded social practices. Caillois' work on games has been particularly significant in defining play and games. He defines gameplay as that which is free, separate, uncertain, unproductive, governed by rules, and make-believe. Furthermore, Callois argues that all games contain one or a combination of the following categories: *agon* (competition), *alea* (chance), *mimicry* (simulation), and *ilinx* (vertigo). The distinction between *paidia*, which is "active, tumultuous, exuberant, and spontaneous," and *ludus*, which represents "calculation, contrivance, and subordination to rule" (p. x), is still used frequently by game scholars.

Deterding, S. “Gamification: Designing for motivation.”
Interactions 19, no. 4 (2012): 14-17.

This forum in *Interactions* offers multiple perspectives relevant in the discourse on gamification by Sebastian Deterding, Judd Antin, Elizabeth Lawley, and Rajat Paharia. Antin asserts that online gamification participants do not work for free, but are paid with good feelings. Gamification mechanisms such as badges have a bad reputation, not because they do not work, but because they are frequently implemented inappropriately for the audience and purpose. As Lawley points out, successful gamification applies game design, not solely game components. The forum urges practitioners to recognize the value of gamification beyond the stock features commonly implemented.

Ferrara, J. *Playful design: Creating game experiences in everyday interfaces*. Brooklyn, NY: Rosenfeld, 2012.

Ferrara structures his book as a guide for UX designers to apply game design as part of their approach. While critical of the buzz around gamification and the imprecise application of the term, Ferrara stresses that game-design approaches can be highly successful if focused on the player experience. The book offers an extensive and insightful overview introducing the reader to game design approaches that may be relevant to general UX design. The first section, “Playful thinking,” explains the ways in which games can be effective when applied to the everyday or the real world, defines games and their relation to everyday experiences, and outlines aspects of player experience and player motivation. “Designing game experiences” addresses more practical aspects of building user experiences based on game-design approaches. This section outlines tips for building game concepts, creating prototypes, play testing, behavioural tools, and the potential of rewards in games. The final section, “Playful design in user experience,” looks in more detail at how games can be used as methods for action, learning, and persuasion in the everyday. Ferrara concludes with speculations on future trends.

Gamification Wiki. Gamification. URL: <http://gamification.org>.

This wiki offers an array of resources related to gamification and game mechanics. The wiki contains general information on gamification as well as

links to books, examples, presentations, and videos. Specific areas of gamification include education, marketing, government, social good, and design.

Høgenhaug, P. S. “Gamification and UX: Where users win or lose.” *Smashing Magazine*, April 26, 2012. URL: <http://uxdesign.smashingmagazine.com/2012/04/26/gamification-ux-users-win-lose/>

Høgenhaug outlines the ways in which gamification can improve the user experience of websites and applications. Høgenhaug begins by defining four key actions that comprise games: play, pretending, rules, and goals. Practitioners who plan to use gamification should not consider it an add-on, but include it in the design process itself. Game models and approaches that work well in UX design include tangible user interfaces, constructive and helpful feedback, storytelling, and Easter eggs. Gamification should not be overused but rather considered a tool to improve user experience by complementing the content and structure of a site or app. Høgenhaug also suggests what to avoid when using gamification.

Kim, B. “Harnessing the power of game dynamics: Why, how to, and how not to gamify the library experience.” *College & Research Libraries News* 73, no. 8 (2012): 465-69.

Kim acknowledges that gamification of the library experience is becoming increasingly common in academic libraries. She recognizes the strengths of gamification in terms of motivation, engagement, and increased achievements of tasks towards a goal. Kim also outlines tactical opportunities and approaches to avoid when gamifying the library experience.

Liu, Y., Alexandrova, T., & Nakajima, T. “Gamifying intelligent environments.” *Proceedings of the 2011 International ACM Workshop on Ubiquitous Meta User Interfaces (Ubi-MUI '11)*. New York, NY: ACM, 2011, 7-12.

Liu, Alexandrova, and Nakajima review the ways in which digital designers apply gamification methods in the design of intelligent environments in order to improve user engagement. They provide two case studies to

determine the effectiveness of this approach: a crowdsourcing application called UbiAsk and a persuasive application to reduce CO2 emissions called EcoIsland. The authors conclude that gamification approaches are only effective in driving participation when they are implemented as additional components supporting an otherwise functioning app or environment and that game-actions must be initiated by a deeper game structure throughout the environment.

McGonigal, J. “The engagement economy: The future of massively scaled collaboration and participation.” In J. Hemerly and L. Mumbach (eds.), *The institute for the future*. Palo Alto, CA: Technology Horizons Program, 2008.

URL:

http://www.iftf.org/uploads/media/Engagement_Economy_sm_0.pdf

McGonigal contends that the current economy of engagement is no longer just about competing for attention, but about engagement based on interaction and contribution by users. She claims that innovative organizations need to tackle the challenge of “participation bandwidth” and ought to learn “from the world of play” to do so (p. 2). McGonigal explains that the digital environment contains more and more mass-collaboration and crowd-sourcing platforms and networks, which makes it increasingly difficult to encourage and maintain engagement. She asserts that gaming approaches can help to optimize participation bandwidth because of the importance of emotional incentives in today’s social mindset. McGonigal infers that designing for positive emotional goals will keep users of all levels of participation more engaged. Finally, she suggests that the most effective way of ensuring a continuous engagement lifecycle is to structure platforms that “empower the community to invent their own tasks” (p. 18).

***Play the Past.* [website]. URL: <http://www.playthepast.org>.**

Play the Past is a collaboratively authored and edited website that looks at the intersections between cultural heritage and games (not just digital games, but all kinds of games). The authors write about diverse topics related to culture and games, including theoretical approaches, philosophical reflections, and practical considerations.

Salen, K., & Zimmerman, E. *Rules of play: Game design fundamentals*. Cambridge, MA: MIT Press, 2003.

Salen and Zimmerman's seminal text on games and game design offers an analysis of games as designed systems and outlines key concepts for the creation of games, thus establishing a critical discourse for game design. The book begins by defining core concepts, such as play, games, design, systems, and interactivity. As the authors explain, all games have rules, and the rules of a game are what distinguish it from other games. Thus, players accept the rules and limitations defined by a particular game when they play it. The second section of the book looks at game rules in detail by defining rules, explaining different rule levels, and looking at various rule systems. The next section looks at another key component of game design: play. As Salen and Zimmerman note, "the play of a game is the experiential aspect of a game. Play in a game occurs as the game rules are set into motion and experienced by the players" (p. 311). The book outlines three phenomena of play behaviour (game play, ludic activities, and being playful) and then walks the reader through the details of different categories of play type. The final component of game design that the book looks at is culture. Salen and Zimmerman outline the social relationships, player roles, and community aspects of gameplay as well as the structure, environment, and social contracts that are required for the culture of a game to flourish.

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