The Poetics of Reflection in Digital Games

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Abstract

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The Poetics of Reflection in Digital Games explores the complex relationship between digital games and the activity of reflection in the context of the contemporary media ecology. The general aim of the project is to create a critical perspective on digital games that recovers aesthetic concerns for game studies, thereby enabling new discussions of their significance as mediations of thought and perception. The arguments advanced about digital games draw on philosophical aesthetics, media theory, and game studies to develop a critical perspective on gameplay as an aesthetic experience, enabling analysis of how particular games strategically educe and organize reflective modes of thought and perception by design, and do so for the

purposes of generating meaning and supporting expressive or artistic goals beyond amusement. The project also provides critical discussion of two important contexts relevant to understanding the significance of this poetic strategy in the field of digital games: the dynamics of the contemporary media ecology, and the technological and cultural forces informing game design thinking in the ludic century.

The project begins with a critique of limiting conceptions of gameplay in game studies grounded in a close reading of Bethesda's *Morrowind*, arguing for a new a "phaneroscopical perspective" that accounts for the significance of a "noematic" layer in the gameplay experience that accounts for dynamics of player reflection on diegetic information and its integral relation to ergodic activity. The next two chapters zoom out to consider systemic challenges to reflective thought and perception in the contemporary media ecology generally, and the ludic century particularly. Synthesizing Hartmut Rosa's theory of social acceleration with critical discourses on the digital in the humanities, I identify a general problem of speed in the digital media ecology resulting from its increasing synergy with historical processes of social acceleration, arguing for the development of an idea of "slow media" to supplement the existing cultural and technological strategies of deceleration. Returning to the domain of digital games, I criticize Eric Zimmerman's characterization of the "ludic century" through expansion of Paolo Pedercini's argument that "videogames are the aesthetic form of rationalization," using close reading of Molleindustria's *Every Day the Same Dream* to discuss critical aesthetic strategies in game design as necessary supplements to the existing critical developments of the ludic century. The final chapter develops the poetics of reflection in a technical direction through close readings of four exemplars: Giant Squid's *ABZÛ*, The Chinese Room's *Dear Esther*, Richard Hofmeier's *Cart Life*, and Playdead's *INSIDE*. These readings identify specific design strategies, such as

design for musement or an aesthetic of slowness, that educe and develop reflective activity in gameplay and actively disrupt habitual and instrumentalized modes of attention and perception. The project concludes with reflection on the significance of the "videogame avant-garde" identified by Brian Schrank.

Table of Contents

List of Figures

Dedication

To my wife Katy and daughter Elora.

Introduction:
On the Transformation of Digital Games into "Thought-Things"

> Art therefore, which transforms sense-objects into thought-things, tears them first of all out of their context in order to de-realize and thus prepare them for their new and different function.
>
> - Hannah Arendt, *The Life of the Mind*

> Art without reflection is the retrospective fantasy of a reflexive age.
>
> - Theodor W. Adorno, *Aesthetic Theory*

§0.1 | Digital Games and Reflection

This project is about the complex relationship between digital games and the activity of reflection in the context of the contemporary media ecology. While digital games are commonly considered *en bloc* as a popular entertainment medium characterized by pragmatic and instrumental forms of interactivity, I identify specific design strategies and explore critical exemplars that engage in what I name and describe as a *poetics of reflection*. Drawing on insights from philosophical aesthetics, media theory, and game studies I develop a perspective on digital games that focuses on the details and development of gameplay as an aesthetic experience in order to analyze how specific games educe and organize reflective modes of thought and perception by design, and for the purposes of generating meaning and supporting expressive or artistic goals.

The arguments advanced about digital games and their poetics in the following chapters have implications for understanding the dynamics of gameplay as an experience, how digital

games express and develop ideas and generate critical perspectives, and the unique place they have in the digital media ecology that increasingly shapes the quality and practices of contemporary life. The general aim of the project is to create a critical perspective on digital games that recovers aesthetic concerns for game studies, thereby enabling new discussions of their significance as designed mediations of thought and perception within the contemporary media ecology. The focus on poetics and the aesthetic and experiential aspects of digital games is not only important because it addresses an underdeveloped area in the field of game studies, but also because it connects them directly to important ongoing conversations about digital poetics, the dynamics of the contemporary media ecology, and the challenges and opportunities these present to reflective thought.

§0.2 | The "Obsolescence" of Discourse on Digital Games

Reflecting on the state of discourse on aesthetics in his own time Theodor Adorno lamented its "obsolescence," arguing that "it scarcely ever confronted itself with its object" (*Aesthetic Theory* 333), instead turning to the "unwavering asceticism of conceptualization, doggedly refusing to allow itself to be irritated by facts," or simply retreating to immediate experience, "the unconscious consciousness in the midst of the work itself" (334). Today, the critical discourse on digital games seems to suffer from a similar problem. In the case of game studies, it has primarily been a formalist enterprise, taking games seriously as a unique *medium* and cultural *form*, with criticism and analysis of particular games as aesthetic objects and instances of expressive media getting lost in the requisite abstractions. Meanwhile, the popular discourse on digital games that lives online in game reviews, forum and comment threads, Let's Play video

commentaries, and live stream discussions is often impressionistic, connoisseurial, and underdeveloped.

In the roughly two decades of game studies discourse[1] we have succeeded in theorizing (and re-theorizing) games and play, and have developed a rich critical language and conceptual resources for discussing the technical and formal aspects of games as well as the significance of gaming as a general cultural practice, and yet the interaction with and influence on game design practices and popular game culture has been minimal. Furthermore, developments in the academic study of digital games have largely failed to register in critical conversations in the humanities about the ongoing digital revolution and its significance, despite the fact that they dominate the digital media ecology. One possible reason for these disconnections is the legacy of abstraction from the complexity of gameplay of individual works−the "experience of the aesthetic object" that Adorno identifies as "scarcely ever confronted." Confronting the details of the media experience organized by individual games and their poetic strategies is both the crucial bridge and most productive and accessible ground for reconnection to these other contexts and concerns.

I am convinced that this problem is largely a consequence of the historical conditions in which academic discourse on digital games emerged. Game studies grew directly out of the early attempts in the humanities to theorize and establish critical discourse on hypertext and the "new media" at the turn of the century.[2] In order to legitimize itself and enable specialization the

[1] While academic study of games and play reaches back into the twentieth century with Johan Huizinga's *Homo Ludens* (1938) and Roger Caillois's *Man, Play, Games* (1958) as seminal early examples, it is not until the turn of the twenty-first century that it really develops into an organized scholarly discourse. Scholars often use the inaugural issue of the online journal *Gamestudies.org* in 2001 as a convenient referent. The subsequent decade saw the explosion of publications on digital games in the form of anthologies and scholarly monographs, extending into the present.

[2] This moment was marked by a sharp rise in humanities scholarship on digital media oriented by the descriptor "new media." (e.g. Lev Manovich's *The Language of New Media* (2001), the *New Media Reader* (2003), Mark B.N.

emerging discourse emphasized the differences between game media and other media forms and organized itself through formalist arguments about what a game is, how it contrasted with other art forms,[3] and what resources from existing theory discourses were relevant and should be incorporated in scholarship.[4] These early dynamics resulted in limiting conceptions of gameplay and interactivity that marginalized analysis and detailed discussion of non-instrumental interpretation and reflective activity as aspects of gameplay.

My first chapter, "After Ergodics," seeks to recover some of the complexity of the "experience of the aesthetic object" lost in the focus on typological and "actionist" approaches to gameplay that grew out of the powerful framing and resources provided by Espen Aarseth's "ergodic perspective" in his seminal book *Cybertext* (1997). Acknowledging the significance of ergodics and the "extra-noematic work" performed by the player interacting with digital game media, I argue for a post-ergodic perspective that also considers the role of "noematic work"−various modes of interpretation and reflective activity−in organizing ergodic activity in gameplay. To demonstrate the importance of this extension I focus on the figure of the computer roleplaying game (CRPG) to show how the dominant approaches to gameplay marginalize significant aspects of the CRPG experience and disregard the integral function of diegetic

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Hansen's *New Philosophy for New Media* (2004) While some early writing in this discourse discussed continuity with other media forms, the use of "new" facilitated a critical focus on medium types and formal and functional differences.

[3] The early debates about whether hypertexts and digital games are best approached as new forms of narrative or rule-based simulations was a perfect example of this focus. The "Narratology vs. Ludology" discussions were largely sustained by obfuscation created by the general lack of detailed analysis and criticism of specific games as aesthetic objects with particular design strategies and expressive goals. It was largely an invisible, unacknowledged battle of assumed archives, expressed as conflicting formalisms. More recent work is finally beginning to stress media continuities and the importance of drawing on resources from both the study of narrative and ludic systems to understand digital games. For example, see David Ciccoricco's *Reading Network Fiction* (2007), *Refiguring Minds* (2015), as well as Astrid Ensslin's *Literary Gaming* (2014).

[4] It is interesting to note that proto-game studies texts, written by women, such as Brenda Laurel's *Computers as Theatre* (1991) and Janet Murray's *Hamlet on the Holodeck* (1997), did not focus on isolating and theorizing medium differences but rather aesthetic/experiential and expressive potentials, stressing continuity with other media.

information in their design. Through a close analysis of Bethesda's *Morrowind* (2002) and its approach to quest design I identify how diegetic information functions as a catalyst for reflective activity, providing a window into digital experiences driven by aesthetic reflection and non-instrumental player perception and action. Adapting Charles Sanders Peirce's unique version of phenomenology, I conclude by positing the need for a "phaneroscopical perspective" on gameplay as a counterbalance to the historical emphasis on ergodics and action in discourse on digital games, a perspective inclusive of the dynamics of imaginative and reflective activity in gameplay experiences.

§0.3 | Contemporary Technogenesis and the Challenge to Reflection

The recovery of reflective activity in the conception of gameplay not only enables more insightful discussion of how specific games engage players in various forms of "noematic work" through their digital designs, it also reconnects the critical study and criticism of digital games to ongoing critical conversations in the humanities about digital media and culture in general, and the various challenges presented by the contemporary media ecology and the digital revolution. In my second chapter, "Slow Media and the Problem of Reflection in the Contemporary Media Ecology," I zoom out to consider the contemporary media ecology (CME) as a context for human thinking. Extending the work of N. Katherine Hayles in *How We Think* (2012) on "contemporary technogenesis" and its relation to digital media, I identify a broader systemic challenge to reflective thought and the cognitive mode of "deep attention" (Hayles 2007) posed by the interaction between the dominant aesthetic conditions of the CME − the "basic conditions

of mediation" (Galloway, Wark, Thacker 7) − and the ongoing historical dynamic of "social acceleration" (Rosa 2013).

Through a critical look at what I term the "macro-critical" perspectives on the CME I show how both optimistic and pessimistic orientations in the existing discourse on the digital fail to acknowledge a general media-based *problem of speed* that has consequences for the development and practice of reflective thought. The conceptualism of these perspectives creates a kind of antinomy of the digital in which judgments about the problems and potentials of digital media largely reflect reasonable differences in focus and value. I argue that the problem lies in the pervasive abstraction from the details of digital mediation and the atemporal view of the CME, both of which hide the systemic challenge to reflective activity. Just as rethinking gameplay in the previous chapter required attending to the aesthetic, temporal, and developmental aspects of the game experience, I argue that approaches to the CME and contemporary technogenesis must reintroduce consideration of historical and temporal dynamics, both at the macro-cultural level and the level of aesthetic experience of media objects.

Combining Hartmut Rosa's theory of social acceleration with these insights, and incorporating neuroscientific views on human attention, I then develop a new critical perspective on the CME, identifying a general problem of speed reflected in media conditions that are increasingly antagonistic to reflective modes of thought and "deep attention." Adopting a "micro-critical" perspective focused on the aesthetic experience of mediation, I then describe dynamics of the CME that function as amplifiers of the problem of speed. While existing responses to social acceleration and the experience of speed in the CME focus on developing "deceleration" strategies through systemic cultural and technological interventions, I draw on John Dewey's philosophy of experience and Marshall McLuhan's media poetics to formulate a supplementary

response based on an idea of "slow media," grounded in a "poetics of reflection" and exemplified in artworks as expressive media.

§0.4 | "Anti-Environments" of the Ludic Century

In the remaining two chapters I return to digital games, first to identify a native problem of reflection specific to the domain of digital games, and then to explore and develop a more technical view of the poetics of reflection through readings of specific games. Together these chapters provide a critical perspective on digital game media as consequential aesthetic objects in the twenty-first century, media with the potential to amplify and reinforce the dynamics of the CME, or to function as "slow media," affecting new patterns of attention and educing reflective modes of thought and perception. For digital games to transform into "machines to slow down," as I suggest in the conclusion of the previous chapter, they must actively seek to perform the function of "art" in the specific sense that McLuhan identifies: they must become "anti-environments." In a revised introduction to *Understanding Media* he remarks: "As our proliferating technologies have created a whole series of new environments, men have become aware of the arts as "anti-environments" or "counter-environments" that provide us with the means of perceiving the environment itself. . . . Art as an anti-environment becomes more than ever a means of training perception and judgment" (14). McLuhan's framing here focuses attention on a strategic relation between the aesthetic experience of digital games as "art," and the "basic conditions of mediation" of the CME as the primary "environment," highlighting the importance of media poetics and critical design. Thus these final chapters can also be understood

as making the case that the pursuit of the poetics of reflection is an important strategy for transforming digital games into "anti-environments."

In "The Ludic Century and the Problem of Rationalization" I show that the domain of digital games is both an important and problematic site to explore ideas of slowness and the poetics of reflection in digital media. My starting point is a thorough critique of Eric Zimmerman's conception of the "ludic century," a view of the twenty-first century that identifies games as the emblematic cultural form and source of a generalized "gaming literacy" integral to understanding and creating in the contemporary world. Drawing on McKenzie Wark's theory of "gamespace" I develop a critical appreciation of the congruity between digital games and contemporary society that identifies the problematic nature of the dominant forms of "ludic phronesis" in the ludic century, the accrued habits of perceiving, patterns of thinking, and ethics of action generated by interactions with digital games. I argue that Zimmerman's optimism about contemporary ludic phronesis is sustained through its formalism and disregard for important cultural and technological dynamics of the ludic century in the domain of digital games on the one hand, and the aesthetic aspects of digital game experiences on the other.

Adapting Lev Manovich's concepts of "softwarization" and "metamediums" to the conditions of contemporary digital game design, I identify technological factors that indirectly shape contemporary forms of ludic phronesis, noting the problematic forces of convergence between digital gamemaking tools and platforms and the digital systems and technologies that organize the CME. Turning to cultural factors, I provide a critical survey of the ideologies of the "gameful world" mapped by Walz and Deterding (2014), arguing the dominant approaches to the "ludification of culture" and the "cultivation of play" in gameful design reveal a bias toward instrumental strategies that reproduce rather than subvert the "standing order" and the dominant

dynamics of the CME. Finally, I address the general disregard for the aesthetic aspects of digital games, arguing that it is a fundamental problem given that the abstraction from the details of contemporary gaming experiences is what conceals a general *problem of rationalization* in the field of digital games.

The remaining sections of the chapter focus on Paolo Pedercini's argument that digital games are the "aesthetic form of rationalization" and his call for a "new game aesthetic," expanding on his critique of dominant game designs and translating his insights into resources for understanding the poetics of reflection in digital games. Pedercini's argument that prevailing goal-focused, action-centric game designs privilege economization of action and reactive, habitual, and instrumental patterns of thought and perception based on relating to the game as a system to be solved, completed, optimized, or conquered. Comparing Pedercini's critical view with designer Frank Lantz's adulatory description of games as the "aesthetic form of instrumental reason," I argue that the apotheosis of "problem-solving" not only marginalizes the significance of non-instrumental forms of thinking and perceiving in gameplay, it also ignores the critical function and expressive potential of exploring more strategic relations in game design to both the "cybernetic bias" of the computer medium and the dominant forms of ludic phronesis.

Finally, I perform a close reading of Molleindustria's *Every Day the Same Dream* (2009), analyzing its aesthetic strategy of "problem-making" as illustrative of design for reflection that strategically counters the dominant aesthetics of rationalization in digital games. I conclude by arguing that Pedercini's aesthetic strategy is a crucial supplement to other critical developments of the ludic century, especially the "games for change" and "serious games" movements, constituting what I characterize as an "experimentalist model" which contrasts with the existing "activist" and "education" models.

My last chapter, "Musement and the Aesthetics of Slowness in Digital Games," is devoted to developing a more technical view of the poetics of reflection through close readings of critical exemplars. While each of the four games engaged in the chapter have unique design strategies and expressive goals, I identify their common design for the experience of *musement,* a unique mode of aesthetic reflection described by Charles Sanders Peirce, as the sine qua non of the poetics of reflection in the domain of digital games given the problem of rationalization, and their development of an *aesthetics of slowness* as a critical response to the general problem of speed in the contemporary media ecology.

Beginning with a detailed explication of Peirce's conception of musement and a discussion of its significance as a special mode of aesthetic reflection and mental play, I then focus on its complicated relationship to ideas of purpose, reasoning, and goals. I refine and develop these insights on musement through a critical comparison with Gaston Bachelard's various ideas of "reverie," indentifying the inclusion of reasoning and logical analysis in musement as a crucial difference, as well as its emphasis on effortful attention and sustained connection to active perception of experience. Ultimately, I argue that it is the qualities of provisionality and openness in musement, which define its complex relationships to reasoning, ideas of purpose, and goals, that constitute its significance for the problem of rationalization in gaming.

The next two sections explore in detail the designs for musement in Giant Squid's *ABZÛ* (2016) and Chinese Room's *Dear Esther* (2012). I demonstrate how these exploration games actively disrupt the efficiencies of interpretation and action drawn out by typical game designs through narrative and aesthetic strategies that move musement to the center of the gameplay experience. These games take a minimalist approach to ergodics and non-diegetic feedback,

emphasizing narrative immersion and feelings of presence in the gameworld over engagement with rules, systems, and ergodic problem-solving.

Finally, I return to the idea of slow media through close readings of two more games, Richard Hofmeier's *Cart Life* (2010) and Playdead's *INSIDE* (2016). I adapt Lutz Koepnick's formulation of the "aesthetics of slowness" in non-game artworks to digital games, arguing that slowness is not about the mechanical affordance of time for reflection and attentive perception within the flow of gameplay, but rather the creation of aesthetic experiences of time and the "production of the present," actively mitigating both the "restless anticipation" of instrumental modes of gameplay and the unreflective reliance on habitual "templates of meaning" shaped by contemporary forms of ludic phronesis. The subsequent readings show how complex ergodic design, mechanical challenge, and elaborate rule systems can also be leveraged for generating non-instrumental forms of reflective activity through aesthetic strategies that modulate or disrupt the habitual experience of time and the efficiency of narrowly purposive problem-solving in gameplay. In a short coda I conclude with some speculative remarks on Brian Schrank's theory of "avant-garde videogames," suggesting that a more active pursuit of what he identifies as the "formal avant-garde" will be crucial to countering the mutually reinforcing problems of speed in the contemporary media ecology, and rationalization in the field of digital games.

§0.5 | "AA" Games

In the popular discourse on digital games the term "AAA" is used to refer to those games that are developed with large budgets by major publishers, often carrying with it connotations of high expectations of quality and mass popularity. As a provocative contrast and mnemonic for the

constellation of ideas about design and experience with digital games explored in this project I offer up the term "AA" to refer to an alternative idea of games, with the letters referring to the "A" in the last names of the authors of the two epigraphs given above: Arendt and Adorno. In their reflections on Art in these epigraphs I find ideas that can easily be extended to the domain of digital games, each providing an insight that has an analog in the perspective I develop in the chapters below. In the case of Arendt, what is true of art and its transformation of sense-objects is true of the poetics of reflection and its transformation of gameplay as an experience. We might translate her statement in this way: *The poetics of reflection transforms gameplay itself into a thought-thing, tearing it first of all out of its habitual context in order to de-rationalize it and thus prepare it for its new and different function.* Adorno would no doubt resist an extension of his thought to what he would consider to be the aorta of the digital culture industry in the twenty-first century, the entertainment media whose designs and aesthetic styles flow to all parts of the societal organism. Yet adapting his view is even more potent, since the future is not only a "gamespace" for gamers alone: *digital games without reflection are the prospective fantasy of the Ludic Century.*

§0.6 | Acknowledgments

This project would have been impossible without the support of many others. I would like to thank them here despite knowing that this gesture cannot fully express the scope of my gratitude, much less the depth of my feeling of indebtedness to their understanding, kindness, and generosity. First and foremost, I would like to thank my chair, Brian Reed, the most serene and caring steward a scholar could ask for. His offered insights into my work always gently cleared

the path ahead and pointed to interesting and useful things along the way that became integral things in retrospect. Apart from academic guidance he also tended to my spirit, which in my life of the mind I value more. I would also like to thank the other members of my committee, Phillip Thurtle and Leroy Searle. A special thanks to Phillip who consistently saw what ingenuity I had and amplified it through sensitive conversation, and empowered me to teach the things I studied, catalyzing their growth. Also to Leroy, who had unending patience to walk me through material both central and peripheral.

I am also grateful to the Comparative History of Ideas department for their support, both moral and material. Thanks are also due to Kathleen Woodward and the Simpson Center for the Humanities for their early support for work on digital games. Finally, and most importantly, I would like to thank my family: my wife Katy, daughter Elora, and my mother and father, Bernadette and Jim, for their love and endless support during this quest, without which I would never have reached the final castle.

Chapter 1:
After Ergodics: Noematic Work and the Function of Diegetic Information in Computer Roleplaying Games

> But in acknowledging play you acknowledge mind, for whatever else play is, it is not matter.[5]
>
> - Johan Huizinga

> The new media are oriented towards action, not contemplation; towards the present, not tradition.[6]
>
> - Hans Magnus Enzensberger

§1.1 | Introduction: Ergodics and Noematic Work

After more than a decade of critical discourse on games we may finally be in a position to appreciate some of the consequences of the earliest concepts used to define and understand digital games.[7] Since the publication of Espen Aarseth's *Cybertext* in 1997 the term "ergodic" has been in wide use in critical discussions of digital games. Derived from the Greek *ergon* &

[5] This statement appears in *Homo Ludens*, 1938. At pains to distinguish the activity of play from biological instinct and purpose-driven, "rational" willing, Huizinga argues that "play only becomes possible, thinkable and understandable when an influx of mind breaks down the absolute determinism of the cosmos."

[6] This statement appears in *New Left Review*, no. 64, 1970, "Constituents of a Theory of the Media ," pp. 13-36. Alexander Galloway includes this as an epigraph to his 2006 book on video games, *Gaming: Essays in Algorithmic Culture*, in which he establishes a view of games that reflects Enzensberger's view.

[7] I am referring here to the discourse that has come to be known informally as "game studies" in the U.S., which is related to but distinguishable from game theory, media studies, platform studies and other social science research on players and games. I usually take Steven Poole's *Trigger Happy* as a good starting point. It was published in 2000 and is arguably the first book-length treatment of video games that had wide circulation. Of course there are earlier academic articles and books that discussed digital games, but it was not until the turn of the century that publication on digital games and games culture really began in earnest.

hodos - literally “work path,” the concept of ergodics describes a layer of a class of media that require “extranoematic,” “non-trivial" effort by the user to traverse them. Aarseth’s concept of the ergodic created a historically significant "function-oriented perspective" on media that helped to foreground the importance of games in the early 21st century media ecology. Although the concept was primarily formulated to distinguish ergodic media from non-interactive narrative texts, it has deeply influenced the common understanding of gameplay with its emphasis on user “intervention” and “interaction” over (and often against) interpretation and reflection.[8] The emphasis placed on the “extranoematic” quality of ergodics has unfortunately led to simplified views of gameplay that tend to translate the entire game experience into material actions and information exchanges, leaving "immaterial" or noematic activity on the part of the player such as looking, listening, reading, remembering, imagining, reasoning, reflecting, interpreting, etc. largely unanalyzed, especially in how these relate to ergodic action. While ergodics as a framework for understanding gameplay adequately accomplishes the goal of distinguishing the activity from reading texts or viewing films, it will be clear in what follows that it has consequences for how we understand gameplay and appreciate game experiences.[9]

The ergodic perspective informs and reinforces a pervasive conception of games as "action-based media": "gameplay" is primarily about what players *do* - the choices they make and actions they perform (input) that prompt changes (feedback) in the game as a cybernetic system. This view of gameplay passes over, or at the very least confusingly encapsulates or

[8] One of the many virtues of Aarseth’s work on the concept of the ergodic is that he resists the temptation to attribute it to the medium itself. Thus while he endeavored to distinguish ergodic media from other media he did so describing a *quality of their organization* rather than some essential nature of a new medium.

[9] Much of the early work on games by Aarseth, Markku Eskelinen, Gonzalo Frasca, Ragnhild Tronstad, Jesper Juul and others historically viewed as ludologists was devoted, quite understandably, to distinguishing gaming and games from literary reading and narrative texts. Their work, responding to the inadequacy of early applications of literary, film, and drama theories to game media constituted what became the ludology vs. narratology debates. For a thoughtful overview of the issues see Henry Jenkins's "Game Design as Narrative Architecture" collected in *Second Person*, 2007, or here: <http://web.mit.edu/cms/People/henry3/games&narrative.html>

obscures, much of what constitutes the *mediation* of extranoematic player action in the actual game experience.[10] One potential insight into this problem can be seen in Aarseth's schematization of four "user functions" in the following figure (Fig.1):

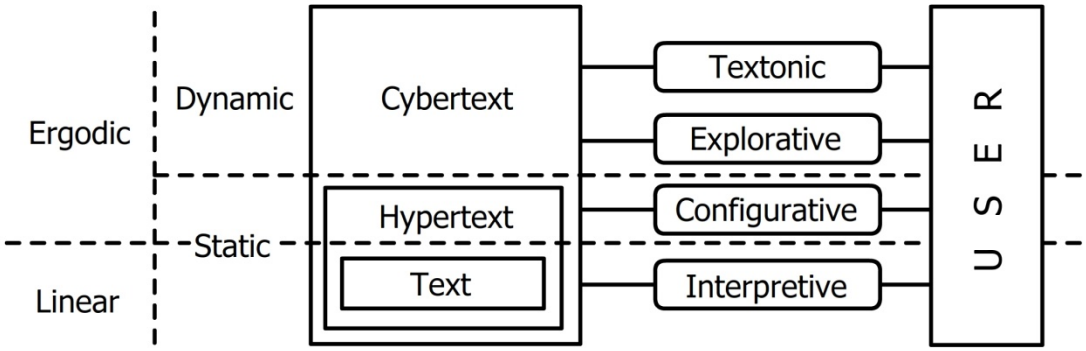

Figure 1 - Aarseth's User Functions

Reproduction of Espen Aarseth's "User Functions and Their Relation to Other Concepts" diagram bringing together medium-based insights. (*Cybertext* 64)

The ergodic perspective concerns the three user functions that are represented above as information flowing from the user (right) to the cybertext (left). The "explorative" and "configurative" functions, actions performed by the player such as moving an avatar through the game world and manipulating game objects, should be familiar aspects of our understanding of gameplay. The "textonic" function refers to any actions that result in information being added "permanently" to the cybertext, for example entering a character name.[11] In each case the user

[10] This tradition is not always explicit. Although game scholars and journalists may not use the word ergodic or write directly with Aarseth's technical language their implicit understanding of gameplay and interactivity conforms to the physicalism of the ergodic perspective, attending primarily to extranoematic player activity in characterizing the game experience.

[11] The other two functions, explorative and configurative, can also be textonic if the game system records input from their actions which affect further gameplay. For example, the activities comprising a quest - finding an object, defeating adversaries, etc. - are configurative, but they are also made textonic through the quest system which

(player) is doing "non-trivial" extranoematic "work," materially intervening by generating information for actual use by the game system as input. The fourth function, the "interpretative," is represented as "linear" and outside the conception of ergodics, though Aarseth is careful to represent all four functions as potentially present in the experience of cybertexts.

As a tool for making typological distinctions Aarseth's figure is very powerful. However, if assumed as a framework or point of departure for thinking about gameplay it can be misleading, even ruinous. For example, while the figure helpfully breaks down ergodic work into three user functions or modes of play, the remaining "legacy" function, the interpretive, must stand in for all the forms of reflective and imaginative work a game can inspire or demand of the player. This is certainly not a flaw in Aarseth's view so much as a difference in analytical emphasis and detail. Indeed, we can imagine an alternative figure that emphasizes analysis of modes of interpretation required of the user in detail:[12]

registers outcomes and adjusts later gameplay accordingly. Any game in which a player can save progress and alter the state of the world by moving objects, killing NPCs, completing quests, and so on has textonic user functionality. For Aarseth's discussion see p.64, section #7, "User functions."

[12] The left side of the figure shows Aarseth's explication of ergodic work required by cybertexts into four user functions, three of which are extranoematic. These three collapse into "ergodic action" in the right side which shows the possible noematic work involved in cybertextual traversal (or gameplay). Functions B1,B2, B3 are hypothetical modes and are not meant to be a definite or exhaustive list.

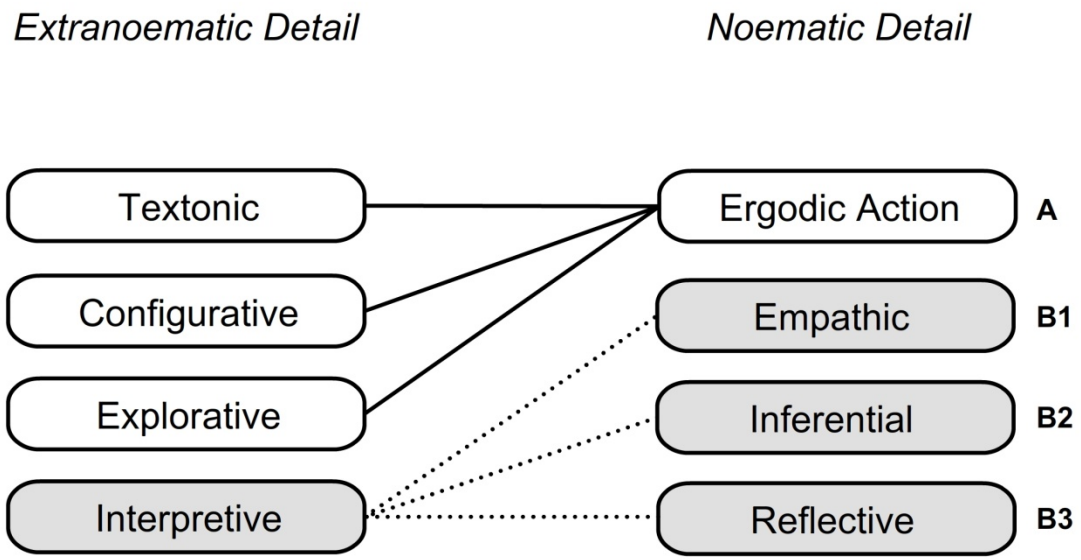

Figure 2 - Two Analytical Emphases of Gameplay

This diagram shows two analytical representations of gameplay. Aarseth's user functions (left), emphasizes the types of extranoematic activity involved in gameplay, while the other emphasizes noematic activity.

This alternative figure attempts to explicate the possible "noematic" work (B1-B3) encapsulated in the uncritical consideration of the role of interpretation in the purposive traversal of a game world, leaving "ergodic action" (A) to stand in for the three modes of extranoematic work Aarseth emphasizes in his figure (on left). This comparison shows how the ergodic perspective makes it difficult to see the significance (or "non-triviality," to adopt Aarseth's language) of *noematic work* in a particular game experience. Furthermore, what is most interesting about games and most needful of consideration is not that they require various forms of extranoematic work in order to function, but rather how this activity is *related* to the noematic experience or "interpretive" dimension of gameplay.

Therefore, understanding exactly how a focus on ergodics produces conceptions of gameplay that make it difficult to examine the significance of noematic experience will aid in

restoring some balance and continuity between thought and action in our discussions of games. The interpretation of the trajectory of the ergodic perspective explored below has implications for understanding digital gaming generally, but the limiting effects of the traditional focus on ergodics are most apparent and counterproductive to our understanding of gameplay organized by computer roleplaying games (CRPGs). As I will endeavor to show, the reason for this has to do with the increased importance and special function of *diegetic information* in the gameplay of modern CRPGs.[13] The diegetic information of a game refers to the audio-visual and textual information that constitutes and sustains the experience of a fictional world in gameplay.[14] Although all games contain diegetic information of this sort, not all of them strategically *use* it in design to prompt and organize reflective or interpretive activity, nor do they rely on such activity as a substantial resource in gameplay. Thus, in order to explore this in more detail I will develop a more subtle characterization of the various forms of noematic work in CRPG gameplay, primarily through close analysis of Bethesda's *Morrowind*, in order to expand the notion of ergodic experience in gameplay.

[13] Although I focus on the CRPG in my commentary for simplicity there is no virtue in limiting the ideas by genre. The challenge to an ergodics-based analysis of gameplay comes not from some discreet principle in the *concept* of the CRPG genre. It just so happens that games we label as "roleplaying" games also tend to use diegetic information in ways that absolutely undermine ergodics as a critical ground.

[14] More in depth discussion of "fictional worlds" in games can be found in Jesper Juul's *Half-Real*, chapter 4, "Fiction," pgs.121-141. Juul does not use the term "diegetic," yet his exploration of the role of fiction in games provides a good framework for thinking about the aspects of the game experience that do not have to do with the game as a technical platform or as a system of rules, and does so without consolidating these aspects into a problematic concept of "narrative." For more on adaptation of the term diegesis for game studies see Galloway, *Gaming*, p.7. Finally, one might add "haptical" to the forms of diegetic information in games with the introduction of force-feedback technologies into console controllers (e.g. Nintendo 64 "Rumble Pak," 1997).

§1.2 | From Ergodics to Actionism

Although ergodics provided a more technical and medium-conscious approach to studying games, a perspective that was sorely needed at the outset of game studies, its emphasis on the extranoematic dimension of user activity underwrites a more contemporary perspective that pertains exclusively to digital games that I call *actionism*. Actionism is characterized by a tendency toward materialist views of gameplay that understand the game experience as primarily one of explicit actions resulting in material changes in the game. It is an excellent candidate for the default perspective or natural attitude that organizes popular discourse about games by virtue of the fact that it is more commonly asked of games what they provide for players to *do* and *see* than what (or how) they ask and enable them to *think*. In academic discourse actionism can best be understood as a natural extension of the ergodic perspective and takes its most useful and developed form in Alexander Galloway's *Gaming: Essays in Algorithmic Culture*.

Nearly a decade after the publication of Aarseth's *Cybertext* Galloway elevates action to an ontological principle of games, framing his approach with the axiom: "video games are actions" (2). Galloway, like Aarseth, wants to focus critical attention on the "material specificities of the medium," arguing that in order to understand video games as different from other media, "one needs to understand how action exists in gameplay, with special attention to its many variations and intensities" (3). However, his approach to games as action-based media is not presented as a simple matter of critical emphasis, such as the privileging of intervention over interpretation in the ergodic perspective, but rather a paradigm change meant to axiomatically exclude aspects of player interpretation.[15]

[15] Galloway explicitly dissociates his ideas about and approach to video games from theories of "interactivity" and "active audience" because they bring with them a focus on interpretation. See "Gamic Action, Four Moments."

Galloway proposes that we analytically break down gameplay into four moments of "gamic action." Gamic action is organized by two distinctions, between types of action and actors. Actions can be either diegetic, which are concerned with constituting the “game’s total world of narrative action,” or non-diegetic, which are concerned with "elements of the gaming apparatus that are external to the world of narrative action" (7). These actions take place between two types of actors: operators and machines. Essentially, this approach takes ergodic activity as the starting point and extends Aarseth's logic of the user function to include the functions performed by game as a machine. The following grid created by Galloway acts as a summary, schematizing his view of gameplay and listing some common examples of each type of action:

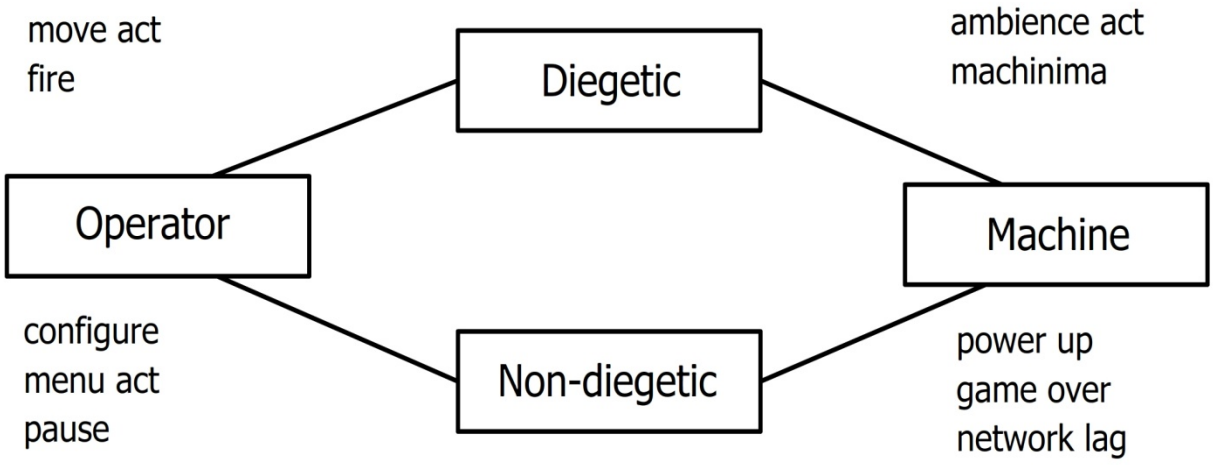

Figure 3 - Alexander Galloway's "Gamic Action"

Reproduction of Alexander Galloway's "Gamic Action, Four Moments" table identifying types of actions performed by operators and machines. (*Gaming* 37)

As a typology of explicit action this framework is tremendously useful for organizing discussion, but if we try to use it as a critical frame for understanding actual gameplay we inherit two

interrelated tendencies. First, the tendency to filter the experience of the player through the concept of the game as a cybernetic system ("machine"), such that what gets noted as relevant player ("operator") action must correspond to some affordance by the game as a simulation and registered by the game as a machine. Second, this tendency in identifying significant action also entails the related tendency to explain how player actions develop by reference to explicit information, such as information given by non-player characters in issuing a quest, or cues given by the game interface in setting and managing an objective.

These tendencies are more visible as problems if we *temporalize* gameplay, taken as a developing experience, and consider the proportionality and significance of “gamic actions” to what is excluded from this framework. Although games may not have “looking and reading” as their foundation, as Galloway argues, there are many that foreground these activities and indeed use them to mediate the "many variations and intensities" of gamic action that comprise them as experiences. Gamic action in early graphical adventures such as Sierra's *Quest for Glory* is overshadowed by extended periods of attentive looking for visual cues as well as inferential reasoning about previous reading, both of dialogue with NPCs and description feedback from the game system about the world. Player activity in the diegetic space of the game is overwhelmingly characterized by time spent in reflective inquiry and mental experiment rather than performing "move acts" and "expressive acts."[16] For example, one of the tasks the hero must perform in Spielburg is to acquire "flying water" for the creation of a dispel potion. Consider this account of action that comprises this game experience:

[16] This assumes a first play-through without the use of walkthrough material. It is instructive to note that adventure gameplay was often reduced to a fairly small list of actions by gamers and shared as "points lists." These lists described the *actions* that needed to be performed in order to complete the game. This act of concision makes palpable the outsized role for reflective thinking when compared with the actual time spent in the game. Put more crudely, if gameplay is framed as gamic action there is not much gameplay going on in these games because the majority of the game time is spent reading and reflecting, forming mental maps and remembering, and carefully scrutinizing the imagery and characters.

1. Hero explores, sees a fox caught in a trap
2. Hero frees fox: *learns about Elsa von Spielburg, the missing daughter of the Baron; she has been enchanted by Baba Yaga the witch and the Dryad of the forest knows how to break the spell*
3. Hero explores, sees a white stag and follows it to Dryad's grove: enlisted to help forest by retrieving a seed from the Spore Spitting Spirea plant
4. Hero explores, finds Spirea plants
5. Hero acquires seed by one of four means:
    a. climbing to plant and catching seed (Fig.4)
    b. climbing to plant and destroying it, taking seed
    c. throwing rock to knock seed out of air
    d. casting fetch spell to catch seed
6. Hero returns to Dryad, gives seed: *learns ingredients needed to make dispel potion, which includes "flying water"*
7. Hero quests for flying water: exploring areas and questioning NPCs
8. Finally, finding the waterfall and noting the appearance of water the hero secures "flying water" (Fig.5)

Figure 4 - Acquiring "Spirea" Seed in *Quest for Glory*

Hero climbs up and catches the Spirea seed. The player must recall the conversation with the Dryad and take care not to destroy the plants in the process of acquiring the seed.

Figure 5 - Acquiring "Flying Water" in *Quest for Glory*

This screenshot shows the description of water upon deliberate inspection of waterfall. The player must type the command "Look at waterfall" (or some variation) to receive this description.

As a series of explicit actions this quest is rather uninteresting, and their enactment by the player is not particularly complex or rich with meaning given the banality of the themes and simplicity of the simulation. By contrast, the noematic work that is involved in traversing this sequence of actions is significant and constitutes the majority of the gameplay experience.

What is hard to apprehend from the above list of actions are the demands made on the visual attentiveness of the player. For example, the screen in which the hero finds the Spirea (action #5) forces the player into an interpretive mode. First, the player must watch attentively to see the seed being passed between the spitting plants. Then the player must reflect on the best way to acquire the seed. If they have paid close attention to the Dryad and reflected minimally on

her purpose (to save the species by planting the seed elsewhere) they will avoid the most obvious action, to climb to the nearest plant and destroy it for the seed, by making a simple inference before acting. Furthermore, this situation forces the player to critically reflect on the capacities of their character as they must relate the skills of their chosen role (as fighter, thief, or magic user) to the given puzzle.

Once the player gives the seed to the Dryad and learns about the need for flying water (action #6) they must then conduct an extensive inquiry into what it is and where to find it. Since the game has no feedback system that manages player attention such as a quest journal or interaction indicators (e.g. the mouse icon changing when it hovers over viable objects), or tracking of quest progress, the player is forced to be both vigilant and reflective, paying close attention to the environment and game texts. The most significant "actions" the game is designed for are the visual and textual inferences the player can make at the waterfall screen (Fig.5). These inferences rely on player memory and reasoning about the diegetic experience of the character and game world.

Although the noematic work discussed here is painfully simple and the scenario commonplace the form of this experience as an example is significant. The bracketing out of "looking and reading" in the framework of gamic action renders appreciation of this example difficult because the designed eduction of noematic work,[17] whether in the form of speculation, visual or textual inference, or synthesis of and reflection on disparate experiences and information, cannot be captured in any detail by analysis or interpretation of the forms of gameplay when understood as gamic action by operators (or machines).

[17] I use the term "eduction" rather than more popular terms such as "affordance," "induction," "inducement," "prompting," "inspire," "elicit," etc. because it is more precise for describing the dynamics of the game experience. Some game designs "draw out" of the player imaginative work that also develops over time in relation to the unfolding of the game. Affordance seems too weak an assertion, induction too strong.

§1.3 | The "Brutal Simplifiers" of Actionism[18]

The trajectory from the ergodic perspective to actionism is marked by two simplifying conceptions. The first, as outlined above, is the simplified understanding of gameplay as a thematic discourse on extranoematic action and information exchange. Lev Manovich identified a similar quality in early discussions of "interactivity" and new media, warning against over-simplification of a complex experience:

> there is the danger that we will interpret 'interaction' literally, equating it with physical interaction between a user and a media object (pressing a button, choosing a link, moving the body), at the expense of psychological interaction. The psychological processes of filling-in, hypothesis formation, recall, and identification, which are required for us to comprehend any text at all, are mistakenly identified with an objectively existing structure of interactive links. (57)

The "psychological processes" Manovich lists above constitute forms of noematic work lost in the brutal simplifier of "gamic action." While the choice of focusing on the "physical" interaction and information exchanges in the experience of game media has many critical advantages, it also effaces the complexity and diversity of the noematic work players actually do.

In *The Aesthetic of Play* Brian Upon provides an excellent account of gameplay that avoids many of the simplifications that are common in game studies discourse, especially in projects that focus on developing a theory of digital games as a media form. Although Upton does focus on building a theory, his grounding focus is on understanding the dynamics of

[18] The idea of a "brutal simplifier" is taken from Richard Sennett's lecture of the same name given at *Haus der Kulturen der Welt* in 2011: < http://www.youtube.com/watch?v=-BjB6ox6CFY >. Sennett himself adapts Jacob Burckhardt's same phrase to describe the brutal simplification of sociality and ideas of human cooperation in the context of modern industrial economies increasingly mediated by digital technologies designed with overly simplistic ideas about social culture and human experience.

interactivity for design rather than the formal qualities of games for arguments about digital media and culture. Consequently, his approach acknowledges more complexity in the relation between player and game, developing a model of interactivity that accounts for the affective and noematic aspects of gameplay. In a series of figures Upton represents increasingly complex perspectives on the relation between player and game (Fig.6), building from a basic model that abstracts from all dynamics of interaction (A), to a more complex one accounting for player awareness, understanding, and intent, as well as active and potential constraints involved in structuring the game state (D). The first three models (A-C) represent the type of simplified conceptions of gameplay that support the actionist perspective on digital games.

The final model of interactivity (D) suggests a more dynamic experience that enables discussion of how aspects of game design may address player understanding and perception of the game world or the systems structuring its simulation and our ergodic actions within it. Upton also introduces concepts of *internal* and *external* to refer to both *constraints* and *states* of the game (27). The internal constraints on interaction in gameplay are those that exist in the player's mind, such as a self-imposed ethic or an understanding of codes of value in the game world that they may use to orient action (Fig.6, 1), while external constraints are those imposed by the game as a system. Similarly, external game states are manifest and immediately perceivable, while internal states are actively imagined by the player, such as a changing relation in the game or non-present consequence based on a given action (Fig.6, 2). These observations about gameplay by Upton help recover more of the experience for analysis, and as we shall see this is crucial for understanding how CRPG design, and important for thinking about ergodic experience in digital gameplay more generally.

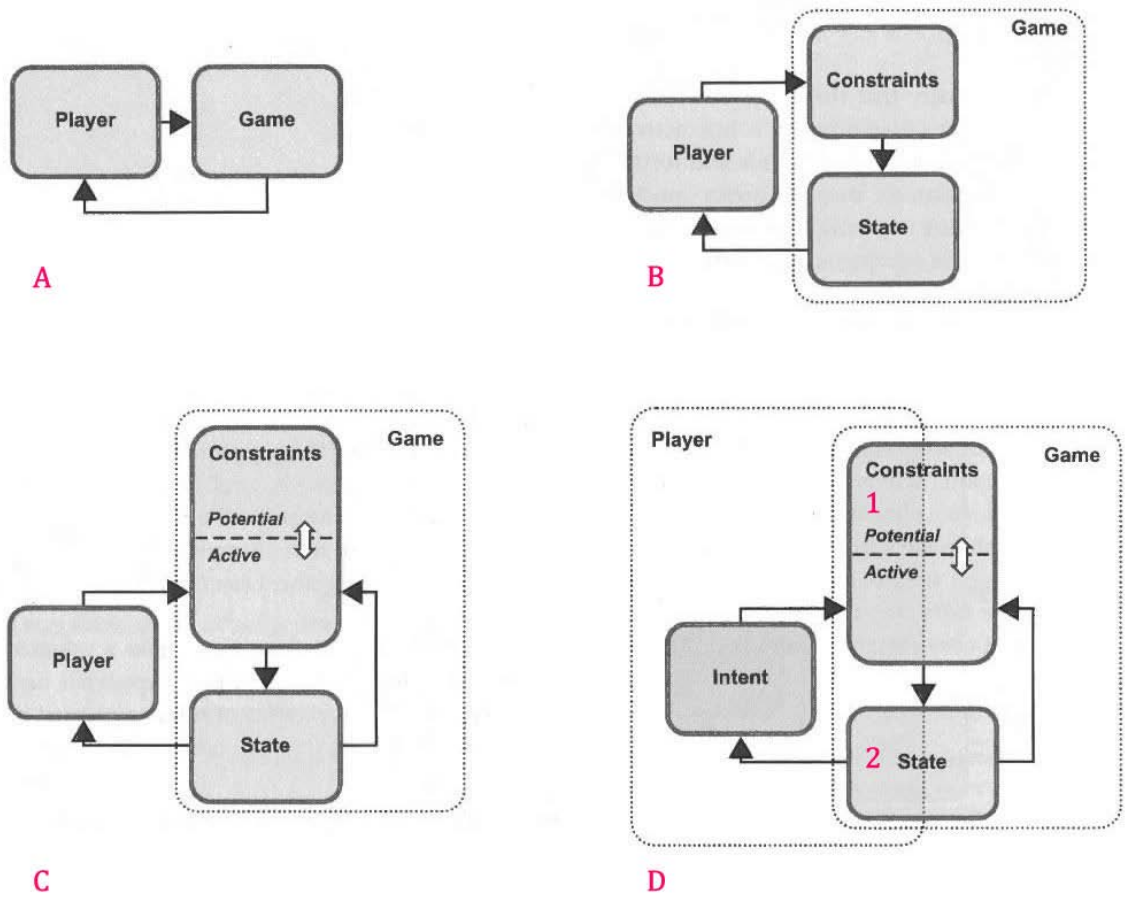

Figure 6 - Upton's Models of Interactivity

Reproduction of a series of models Upton uses to illustrate the complexity of the relation between players and game systems.[19] The final model (D) shows an overlap between the player and the game that represents an acknowledgement of the noematic aspects of gameplay as a more complete, co-created experience. (Upton 24-28)

The second simplification, related to the first, concerns the assumption that digital games can be approached effectively as a single, unique, action-based "medium."[20] This assumption

[19] In his chapter on interactivity Upton presents these models over the course of several pages in order to ground a discussion of how we can complicate out understanding of game interactions in order to understand how aesthetic experience emerges from gameplay. I have collected and arranged them here to show the process of productive complication in one image, adding the A-D, 1&2 labels for reference in my discussion.

[20] The most visible early example of this is Mark J. P. Wolf's *The Medium of the Video Game* (2002).

often involves a limiting theory of essential qualities that characterize or define the medium, which is then used as a basic framework (or worse, conceptual filter) for understanding particular media instances. The result is a short circuit in critical inquiry that ensures analysis rarely engages a complex understanding of particular media experiences or how they actually develop and become intelligible or meaningful over time during gameplay. In *Unit Operations* Ian Bogost characterizes this problem of simplification in a comment on ergodics, noting that, although "Aarseth argues that computational works are better understood as cybernetic systems than as new, electronic versions of the other kinds of texts, he scarcely acknowledges that an ergodic work might synthesize in a manner similar to a literary text" (99). The question of *synthesis* remains unacknowledged because it pertains to the temporal organization of an experience of a cybernetic system. This temporal aspect of gameplay experience is rendered invisible (or ancillary) by approaches that constrain understanding of gameplay by theories of a general game "medium."

The tendency to define and evaluate media objects based on material qualities that are identified as unique in relation to other forms of media hinders discussions of continuities *across* media. When taken together, these conceptual simplifiers of gameplay are particularly limiting for the study of digital games because they constitute a critical foundation that structurally inhibits appreciation of gameplay that emphasizes extensive noematic experiences of fictional worlds and relies heavily upon active interpretation and sustained reflection.[21] This casts CRPGs as the particular victims of actionism and the general focus on ergodics.

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[21] Furthermore, these brutal simplifiers of actionism are also what enable the rhetoric of gamification insofar as it is understood as adding a "game layer" to websites, environments, etc. The idea that there could be a "game layer" can only arise from an actionist perspective which abstracts from the understanding of a game as *designed experience* some typology of extranoematic actions that can be organized by psychological principles of motivation and the habits of contemporary gamer culture.

§1.4 | The Problematic Figure of the CRPG

The status and handling of CRPGs as a game *genre* in game studies discourse tends to be problematic, indicating that the current frameworks for understanding digital games need revision or expansion.[22] For example, in their seminal book *Rules of Play* Katie Salen and Eric Zimmerman consider RPGs, along with puzzles, to be the "limit cases" for their definition of games, which they define as "system[s] in which players engage in an artificial conflict, defined by rules, that result in a quantifiable outcome" (81). Although they acknowledge that puzzles fit this definition, they are identified as a limit case because they have a single solution and thereby severely restrict the freedom of play. Conversely, RPGs are considered limit cases because they are so open-ended, especially in their tabletop form, and undermine requirements of finality and resolution associated with "quantifiable outcomes" by design (Fig.7). This compels Salen and Zimmerman to characterize RPGs as large "systems" that "facilitate gameplay" (82), implying that they should not be understood as a coherent game genre but rather, in their computerized form, as world simulations that enable varied game-like experiences. Furthermore, their complexity and scope as simulations, as well as their incorporation of design techniques regularly associated with other genres, produces the diverse, multi-modal nature of gameplay typical of most modern CRPGs. This makes them particularly resistant to formalist insights grounded in and organized by general definitions of games and gameplay.

[22] My purpose for briefly discussing the problem with ergodics in the context of game *genres* here is not to argue that there is something essential to the genre that is of interest, but rather that the games that are labeled as RPGs tend to contain designed experiences that challenge the contemporary focus on extranoematic action in gameplay. In fact, my argument here implies that a more game-centric approach is needed to advance game studies.

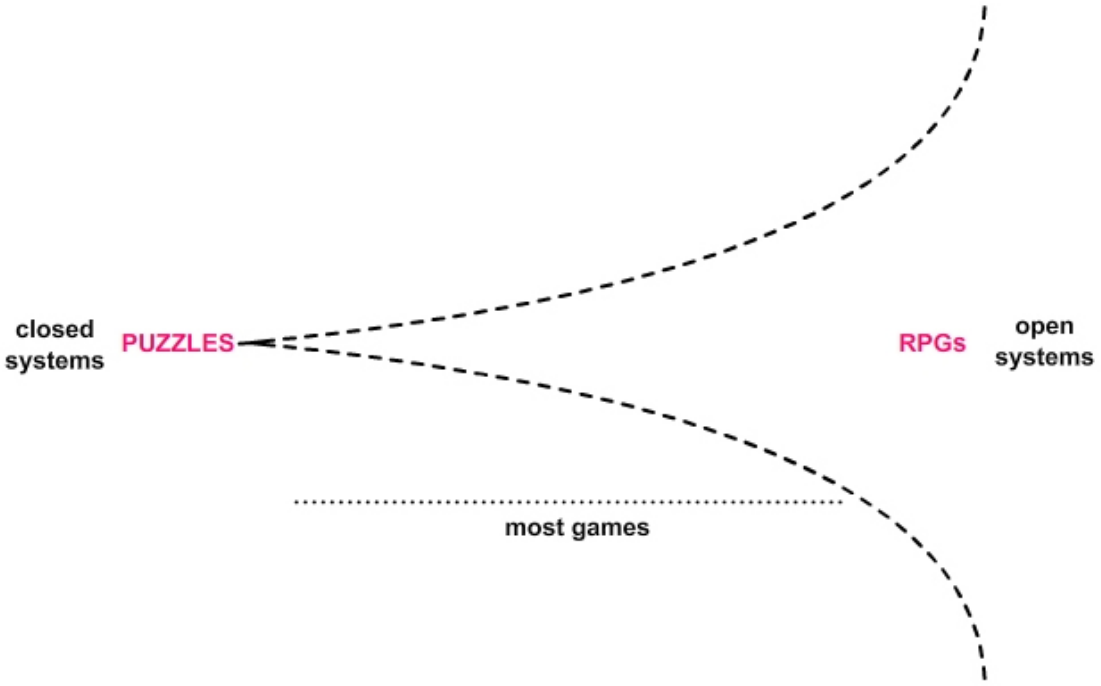

Figure 7 - Schematization of Limit Cases

Salen and Zimmerman's limit cases, puzzles and roleplaying games, occupy ends of a continuum of game experiences designed as closed and open systems, with most games in between these extreme cases.

Salen and Zimmerman's discussion of the status of CRPGs suggests that shifting critical attention to particular experiences within CRPG simulations and how they are "facilitated" and organized would be a more productive approach. In "Games and Design Patterns" Staffan Björk and Jussi Holopainen take a step in this direction by suggesting scholars attend to "design patterns" in games in order to avoid the obscuring generality of genre or medium-based analysis. This shift in focus not only enables greater continuity of analysis across different types of game media, it also turns out to be a better basis for approaching the field of games that we historically identify with the CRPG genre. For example, in *Dungeons and Desktops* Matt Barton develops an approach to the history of the genre by considering recurring themes in design and gameplay.

Instead of attempting to posit or deduce the essence of the genre through a typology of action or uniform principles of design, he offers a comparative characterization contrasting CRPG design patterns and gameplay qualities with that of adventure, strategy, and massively-multiplayer online roleplaying games. The result is a dynamic constellation of insights that takes the place of an explicit definition.

However, Barton's real innovation resides not in the focus on patterns in system design and qualities of play but rather in a much more problematic third aspect. This can be observed in the fact that Barton includes in his view not only a description of what CRPGs *are* through identification of design patterns and play qualities, which concerns how they are intelligible as *game media*, but also an interpretation of what "skills" they challenge players to exercise (and develop), which concerns how they are intelligible as designed *experiences*.[23] For example, while Barton notes that CRPGs often include "chance systems" in their design for character development, a design pattern that distinguishes them from adventure games, and tend to have an "empathic" perspective, a quality that distinguishes them from strategy games, he also posits that they tend to emphasize inductive and quantitative forms of reasoning, a characterization that can only be understood in reference to specific organizations of game information and ergodic design. Put another way, Barton's account of the CRPG includes an implied theory of the noematic experience organized by the design strategies and play qualities that he identifies.

[23] Barton actually addresses the topic of skills and CRPG play in two registers. First in relation to players, discussing skills used in typical activities found in the games, and then in relation to the contemporary economy, noting that CRPGs develop the four basic skills identified by Robert Reich (abstraction, system thinking, experimentation, collaboration) as the keys to 21st century workplaces. The problem, however, is that because Barton only considers the *non-diegetic* dimension of the gameplay experience his list of basic skills conforms to the audit-society model of learning which values calculation over interpretation, strategy over meaning, etc. This *narrows the scope* of the noematic work he can imagine as part of the gameplay experience. Significantly, Barton points out the role of time and development in CRPG valuation, indicating that they require players to imagine futures, not just react to problems and situations in the short-term of immediate action. Unfortunately, this insight does not inform Barton's consideration of CRPG skills in the second register, that of socio-economic value.

Barton's consideration of the modalities of thought evoked by particular game designs may be a means to form a more workable idea of the CRPG genre, but it also suggests that the problematic status of the idea of the CRPG could be related to a general difficulty with the noematic dimension of gameplay. This difficulty can be traced back to the expedient but limiting medium-centric conceptions of gameplay shaped by the historical emphasis on extranoematic activity established by ergodics and their further thematization in the framework of actionism. The figure of the CRPG appears particularly problematic against the backdrop of actionism because player actions are often the outcomes of relatively complex interpretations of diegetic information. However, in order to offer something more than the relatively trivial observation that some games design for more noematic activity than what is needed to facilitate ergodic action and the accomplishment of given goals we will need to explore how these two aspects of gameplay are mediated by diegetic and non-diegetic information through a detailed example.

§1.5 | Diegetic Information and Noematic Work in *Morrowind*

While all games obviously involve noematic activity, the earlier analysis of a simple quest sequence in *Quest for Glory* established the basic point that some game experiences are characterized by extensive time engaged in noematic *work*, specifically in the form of active reasoning about diegetic information and reflecting on diegetic experiences. To make this aspect of gameplay intelligible we had to move beyond a survey of the actions required for progress and the explicit information orienting the player to consider how the designed relations between information and ergodic action in actual gameplay foreground *specific forms* of noematic work. The indispensible point that requires further development is the importance of information

design and narrativity in understanding noematic experience in gameplay. What makes *Quest for Glory* a particularly helpful initial example in this regard is its minimal use of non-diegetic information, such as interface cues or quest logs, to orient and guide the player.[24] This forces the player to focus on interpreting and reflecting on diegetic information, which does not always directly indicate the necessary ergodic action, in order to orient themselves and effectively traverse the quest.[25] Thus the design of information within the given quest, including both the nature and measured availability of diegetic information as well as the absence of non-diegetic information, effectively foregrounds the noematic work of diegetic reasoning in gameplay. However, it is important to recognize that not all noematic work is framed and organized by explicit information (given quests) or performed to facilitate necessary ergodic activity.

The function of diegetic information in lore-based open-world fantasy CRPGs such as Bethesda's *Morrowind* is much more complex, and the noematic work much more varied and interesting. Of course, as with most CRPGs, *Morrowind* organizes player activity through an elaborate quest system that operates primarily through NPCs. The player is presented with a problem and given an initial task, and as tasks are completed new ones are given. These scripted quests in *Morrowind* involve more complex and detailed diegetic information than the example drawn from *Quest for Glory*, but the general character of the noematic work organized within a given quest is very similar. However, if we consider the function of diegetic information outside

[24] *Quest for Glory* has no formal quest system that tracks progress or reminds the player of their goals. The forms of non-diegetic information available to guide the player are minimal: a puzzle point system represented as a running score. When performing an action that is recognized by the game the only feedback given is an increase in score. This does not indicate progress within a specific quest nor does it suggest further action. This is in contrast to many modern CRPGs in which the activity is heavily managed by the non-diegetic information, both via the interface (sound alerts, visual cues, map and compass markers, etc.) and a quest or journal system (automatic entries providing synoptic accounts of action and objectives).

[25] Note that this claim mirrors Aarseth's claim about the cybertextual requirement of "non-trivial" effort by the user to facilitate traversal but changes the frame from extranoematic to "noematic": *Quest for Glory* requires non-trivial *noematic* effort to be traversed.

the confines of individual scripted quests we gain further insight into other forms of noematic work educed in its gameplay.

The first observation to make from a holistic perspective is that the richness of diegetic information in *Morrowind* opens up a new dimension of noematic experience in gameplay as the player's knowledge of the world inevitably expands *over time*. We can recognize this development as implicit in the design of the quest system as a whole once we consider how it organizes the player's experience of the wealth of diegetic information provided. In the opening sequence of the game the player is placed directly into an elaborate "main quest." This quest, which casts their character as the potential reincarnation of a legendary hero of the native people, the Dunmer, leads the player throughout the vast island of Vvardenfell in the province of Morrowind, the setting of the game. As the player progresses in the main quest their experience of diegetic information accrues and knowledge of a social world, its characters, cultures, problems, and history develops.[26] The questing player is directly exposed to a complex system of diegetic information and lore of the game world: racial tensions, local politics and social hierarchies, economic disparities, competing cultural traditions, businesses and guilds, and a legacy of military occupation. Consequently, in addition to leading the player to enact a vast story through typical ergodic work (exploring the land, developing and configuring their character's powers, combating enemies, collecting artifacts, etc.), the quests educate the player about the world by design.[27] That is, the structure of the main quest sequence requires the player

[26] This assumes, of course, that the player pays attention to the given information. Good quest design actually *requires* this attention, though most modern quest systems do not reflect this value. There is a great deal more to be argued about the overuse of "non-diegetic" information to train and "educate" the player in CRPG design, but one quick point is that non-diegetic information systems can have the effect of undermining development of diegetic knowledge.

[27] For example, because the main quest involves persuading the various communities of the Dunmer people (the three Great Houses and the four Ashlander tribes) that are scattered across Morrowind to recognize you as the prophesied hero, the player is exposed to the diversity of their cultures and traditions by design. NPC conversations

to explore the politics and cultures of the major houses and tribes of the Dunmer people, and learn the significance of their own character's prophesized role in the conflict with the central adversary, Dagoth Ur. In effect, the main quest design of *Morrowind* builds a significant diegetic resource that mediates ergodic action throughout gameplay.

This resource, embodied in the player's evolving understanding of diegetic information about the world, often imbues choices such as joining factions and carrying out quests for them with a more compelling political quality. For example, as the player learns about the Imperial occupation of the province of Morrowind and their own connection to Emperor Uriel Septim VII through service to the Caius Cosades and the Blades faction, the choice to join the Fighters Guild becomes a political, even moral expression. This is because the Fighters Guild is aligned with the Imperial Legion and the wealthy Great Houses of the native Dunmer, and their activities are often directed against the lower classes and minority races populating Vvardenfell. Furthermore, many quests given by the Fighters Guild involve undermining the Thieves Guild, which is comprised primarily of minority races that suffer enslavement and by the Imperials and Dunmer, and is in solidarity with the lower classes against the oppressive activities of the Great Houses and the Imperial Empire.

The necessary insight can be gained without further extrapolation from details: the faction-based quest lines provide differing perspectives on the Imperial occupation, local politics, and history of Morrowind, and these perspectives interact with the evolving understanding of diegetic information the player experiences in the main quest sequence. The fact that each player's trajectory through the game world and quest system (and hence their exposure to diegetic information) is unique does not diminish the basic observation about design.

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during the main quest sequence provide context not only for the objectives of the main quest (to repel Dagoth Ur), but also provides an image of the world of Tamriel and Morrowind's place in it, as well as its history.

The designed relation between the ergodic designs of the scripted quests and diegetic information about the world establishes the conditions for and invites the noematic work of reflection and empathic reasoning, specifically on consequences beyond those expressed by the information that organizes scripted quests in isolation. Accordingly, the complex of diegetic information developed across scripted questing in *Morrowind* functions primarily as a catalyst for noematic work rather than as a practical resource for effective traversal of the game through action.

All of this suggests that our conception of gameplay not only needs to take into account the noematic work generated by the organization of diegetic information within the design of a particular quest, but also how diegetic information is organized and developed within the broader ecosystem of quests included in the game world. Of course, because this aspect of design varies greatly in different CRPGs further generalization is counterproductive. In the case of *Morrowind,* its ecosystem is specifically designed to foreground noematic work and develop diegetic awareness and knowledge that are not instrumentally related to ergodic activity explicitly prompted and managed by the feedback systems of the game. Instead, the player's work of interpreting, synthesizing, and reflecting on their experience of diegetic information relates to *diegetic understanding* of the game world and provides context and resources for orienting ergodic action. It is this notion of diegetic understanding that renders the most interesting configuration of noematic work in *Morrowind* gameplay intelligible.

§1.6 | Questing as Inquiry in *Morrowind*

So far, we have explored noematic work in gameplay as it relates to experiences of scripted questing. Questing of this sort is guided by the game, often through journal systems or quest logs, and ergodic activity is directed either by diegetic or non-diegetic information, such as an NPC explaining a problem that requires action or the interface indicating an objective automatically. We might call this form of questing in CRPG gameplay "reactive" questing, since the noematic work that orients ergodic activity is a reaction to information. In reactive questing the role of the player's diegetic understanding is typically very limited, though as noted above this depends heavily on the particulars of information design within quests and across the quest system.[28] However, *Morrowind* also makes significant *use* of diegetic understanding outside scripted questing by designing conditions for experiences organized by the player's own self-initiated inquiry.[29] In these experiences, which are recognized by the simulation but not managed by the scripted quest system, the player's diegetic understanding serves as an essential mediating function, inspiring and organizing ergodic activity. We might call this "active" questing, which more thoroughly depends on the noematic work of the player. Contrary to reactive questing, which is guided by the quest *system*, active questing is guided by *player insight*.

[28] For example, *The Elder Scrolls IV: Oblivion* included default non-diegetic feedback systems, such as automatic objective mapping, which heavily managed the player's noematic experience. Diegetic understanding was not only ignored in the game's design, but its development was short-circuited, since the journal system interpreted and synthesized events for the player in terms that directly related what must be done and why.

[29] It is important to note that these experiences differ from instances in which players creatively assign themselves personal quests or engage in arbitrary experiment. Although ergodic activity is not explicitly prompted by the game in these instances they are still constrained by sincere interpretation of the purposiveness of diegetic information provided in the game.

The experience of slavery and the revelation of the Twin Lamps faction in *Morrowind* serves as an exemplary instance of design for active questing.[30] Throughout their travels in Vvardenfell the player will inevitably observe many instances of slavery, primarily of Khajiiti and Argonians, by the native Dunmer. Slaves are found in many places throughout the populated areas, working in mines and on plantations, sitting in cages at slave markets, or confined to servant quarters (Fig.8). Several scripted quests also develop the player's awareness of slavery from multiple perspectives. For example, players can free a slave from the Dren Plantation or put down a slave revolt at the Abebaal Egg Mine. The main quest also requires the player to confront Orvas Dren, the leader of the xenophobic crime syndicate Camonna Tong and central figure of the slave trade in Morrowind.

[30] Players have archived extensive research on slavery in The Elder Scrolls series games at The Unofficial Elder Scrolls Pages (UESP) wiki <http://www.uesp.net/wiki/Morrowind:Slavery>

Figure 8 - Slavery in *Morrowind*

Enslaved Khajiit bound to the worksite by magic bracers. Engagement with this aspect of the game requires the player to read recurring situations and social dynamics in the game world and act on their developing moral feeling and understanding.

Instead of including a scripted quest that identifies the theme of slavery in Dunmer society and compels the player to confront it, the game patiently develops it as a topic of interest and a potential focus of inquiry. Rather than presenting the players with *the* problem of slavery in Morrowind translated into a quest with clear objectives, the game provides ways for them to apprehend *a* problem, to formulate it themselves through self-initiated noematic work.

Furthermore, should the player decide to engage the theme of slavery the game provides opportunities for them to act upon their interest and continue to develop their understanding through inquiry. For example, if they decide to investigate the situation of slavery the game includes an interesting set of cultural and political realities to discover, such as the pervasiveness of xenophobia and racism among the Dunmer nobles, the politics and history of Morrowind's exemption from an Imperial law prohibiting slavery throughout the Empire, and the existence of an underground abolitionist group known as Twin Lamps.

The process of discovering the Twin Lamps not only requires the player's attentive and sustained consideration of diegetic information as they explore aspects of slavery, it also requires that they act on their ideas. If the player is seized by the idea to free a slave, the ergodic design of the game allows them to do so, but there is no feedback that signals this action is being registered and recorded by the game beyond the simulation and responses of the freed slaves in conversation. This is a minor yet important detail in the design, since it establishes the player's own fidelity to their imaginative investment in the game world as the ground of further action. In order to learn about the existence of the secretive Twin Lamps the player must first free nine slaves, at which point a topic appears in conversations with the freed slaves. Freeing about twenty slaves opens the opportunity for the questing player to learn the password of the group, which in turn gives them access to conversations with their leader, Ilmeni Dren. Finally, the player is offered a few scripted quests supporting the Twin Lamps through Ilmeni, though they cannot officially join the faction.

There are several qualities of the Twin Lamps experience worth noting. First, it reverses the logic of reactive quest design. Instead of explicitly presenting the player with a joinable faction that will provide them with quests, the player must actively quest to discover the faction.

Second, the function of diegetic understanding is also transformed. In reactive questing the player's diegetic understanding is secondary (even optional), since the ideology of the faction is given and the player is simply asked to identify with it in a single choice, potentially developing understanding afterward through a sequence of scripted quests. Conversely, the effort to gain diegetic understanding in the experience of Twin Lamps is primary, since the necessary ergodic activity (freeing slaves, locating faction members, etc.) is sustained by the player's interpretation of multiple situations and their reflection on their emergent diegetic understanding. The combined effect of these two qualities results in a third: the foregrounding of inquiry in gameplay.

The implicit idea orienting the design of the Twin Lamps experience is that questing need not be driven by given information and objectives, it can also be driven by the spirit of inquiry inspired by the organization and richness of diegetic information. The idea of questing as inquiry implies an approach to game design as a "modulation of experience" rather than configuration and management of ergodic action (Rodriguez).[31] Conventional or reactive quest design reflects the latter approach, tending to focus on creating sequences of interesting ergodic activity, appealing to what John Dewey identified as our general "zeal for doing." His characterization of the problem in general human experience comes close to reflecting the tendencies nurtured in the player in reactive quest design:

> Zeal for doing, lust for action, leaves many a person, especially in this hurried and impatient human environment in which we live, with experience of an almost incredible paucity, all on the surface. No one experience has a chance to complete itself because something else is entered upon so speedily. What is called experience becomes so

[31] Rodriguez reconsiders Huizinga's theory of play with the goal of clarifying how gameplay connects with learning. Central to his argument is the idea that play must be understood as a "modulation of experience." Implicit in this view is the idea that the player is not just as an agent of action but also as an active inquirer.

> dispersed and miscellaneous as hardly to deserve the name. Resistance is treated as an obstruction to be beaten down, not as an invitation to reflection. An individual comes to seek, unconsciously even more than by deliberate choice, situations in which he can do the most things in the shortest time. (44-5)

Unfortunately, the effect is often a trivialization of interpretative work that develops diegetic understanding. The design of the Twin Lamps experience in *Morrowind* mitigates this problem by focusing on creating a compelling diegetic situation and validating the noematic work of inquiry in gameplay by rewarding player pursuit of diegetic understanding. Thus the player is not only appealed to as an agent of ergodic action interested in the immediate "instigation of material change" (Galloway 4), but also as an agent of inquiry and reflection interested in and capable of noematic work. The player's effort to synthesize and reflect on their diegetic experience in Vvardenfell becomes *non-trivial*, an integral rather an incidental resource in gameplay.

§1.7 | Rethinking Gameplay

The forms of noematic work in *Morrowind* gameplay discussed above compel us to rethink our focus on ergodic design and player action. In particular, the details of how the experience of diegetic information is designed and diegetic understanding is developed and used as a significant resource for orienting ergodic action in gameplay point to the importance of Huizinga's comment about play in the opening epigraph. Although it may be simple for us to "acknowledge mind" in a general theory of play, it has proved more difficult to acknowledge and value in *game*play. As I have suggested, part of the allure and power of focusing on ergodics and player action is that the complex details of noematic work organized through game design can be

ignored. Exploring this noematic dimension of gameplay is difficult because it requires, at the very least, a broader understanding of gameplay as an *experience*, and this in turn demands we look critically at the particular ways a specific game and its designs attempt to organize player perception and thinking in addition to ergodic action.

Emphasizing the term "experience" helps expand our critical awareness because it tempers our focus on games as "designed objects" with some consideration of "player experience" (Sicart 15-16). This emphasis is prominent in the work of Salen and Zimmerman, Kurt Squire, Miguel Sicart, and Constance Steinkuehler, all of whom use the phrase "designed experiences" to describe games and facilitate their discussions of gameplay. However, while this strategy does indicate greater complexity in gameplay, avoiding the limitations of actionism by acknowledging the significance of player thinking generally, it still leaves the problem of details in its wake. Furthermore, the critical goal is not only to acknowledge mind in our abstract conceptions of gameplay, but to interpret how specific games can configure and educe noematic work and form unique relationships between thought and action in their design. That is, how particular games engage in the *poetics of reflection*. Exploring this topic will have far reaching implications for the expressive potential games as the emblematic aesthetic form of digital media in the contemporary media ecology.

Morrowind and modern CRPGs generally make the problem of acknowledging mind in gameplay particularly obvious because, as I have tried to show, many aspects of their design cannot be understood or appreciated without careful consideration of the function and development of player understanding. In formulating his theory of "unit operations" as a framework for video game criticism Ian Bogost highlights the role of understanding as a particularly important constituent of our larger experience of games:

> Videogames *require critical interpretation to mediate our experience of the simulation,* to ground it in a set of coherent and expressive values, responses, or understandings that constitute effects of the work. In this process, the unit operations of a simulation *embody themselves in a player's understanding*. This is the place where rules can be grasped, where instantiated code enters the material world via human players' faculty of reason. In my mind, it is the most important moment in the study of a videogame.
>
> (99, my emphasis)

Bogost's focus on the idea of player understanding serving as a necessary, mediating function within the experience of simulations can be seen as a more general expression of the specific point made above about the function of diegetic understanding in *Morrowind* gameplay. Although the developmental and narrative qualities of CRPGs make it difficult to adopt a unit operational approach to gameplay (Schenold 2008), its emphasis on *understanding* positions us to ask the kind of questions that are more apposite the experiences games of that genre explicitly design for. For example, what does the game ask us to understand about the world it simulates? About our role within it? How does it attempt to develop our understanding by design? What *follows* from particular understandings of the game world, its moral and aesthetic aspects?

Pursuing these questions requires more detail-oriented criticism of individual games, but *valuing* this kind of critical work will prove difficult without a felicitous approach to "gameplay." It is implied in what I have discussed above that phenomenological considerations (including developmental or temporal) are essential for rendering discussable certain kinds of noematic work many games explicitly design for in gameplay. Stopping with this observation we could comfortably adopt Miguel Sicart's admirably clear and concise conception of gameplay "as the phenomenological experience of interacting with a computer game, restrained by the

formal structure of the game and its technological layout" (35). The problem is that "phenomenological" in this definition is prone to the very kinds of simplifications driving actionism. What counts as relevant phenomena in the “phenomenological experience” can be (and often is) narrowly understood as that which appears to the senses, particularly that which can be construed, to recall Galloway, as "instigations of material change." However, it seems to me that it is crucial to understand "phenomenological experience" here as including the interpretive mental discourse of the player, equally creative and reflective, and to avoid narrowing our critical focus to the immediacy of extranoematic interactions between player and game system.

As a final attempt to aid game criticism in avoiding this recurring problem I would like to revive and adapt the term "phaneroscopy" which was developed by the philosopher Charles Sanders Peirce to enforce a more expanded view of experience in philosophical criticism and protect against an overly perception-centric understanding of phenomenology. Helpfully, this term is exotic enough to be remembered and thus affective even without heavy use, and it is cumbersome enough to be used only when needed. According to Peirce, “phaneroscopy is the description of the phaneron; and by the phaneron I mean the collective total of all that is in any way or in any sense present to the mind, quite regardless of whether it corresponds to any real thing or not” (1.284).[32] These notions of phaneroscopy and the phaneron can help us rethink gameplay in at least two ways.

First, because the phaneron does not limit itself to immediate events of action and perceptual experience, a "phaneroscopical" conception of gameplay can better account for speculations from game world lore, critical and creative inferences about characters and moral

[32] The parenthetical information consists of the standard volume and paragraph number used in all editions of Peirce's *Collected Papers.*

situations, empathic reasoning on social groups, and so on. The products of noematic work by the player that animate or facilitate their diegetic understanding and traversal of a game world are considered in *continuity* with events of action and information exchange, as well as the practical interpretive (and largely non-diegetic) thinking involved in ergodics. Second, Peirce's conception of the phaneron helps counter the natural impulse to ignore or devalue fictions and other images and ideas posited from player memory or reflective reasoning that do not correspond to immediate experience and obvious practical demands of the game situation but nevertheless mediate gameplay, including ergodic actions, and develop diegetic understanding. Put another way, the idea of the phaneron opens critical consideration to noematic work that is not confirmed or explicitly organized by the ergodic system through perceived feedback.

Salen and Zimmerman develop a "multivalent model of interactivity" that provides a convenient tool for seeing the implications and potential of Peirce's ideas (59-60). They identify four modes of interactivity that comprise gameplay as an experience (Fig.9): "cognitive interactivity," which is constituted by the various types of noematic work of the player in gameplay, such as interpretation of the diegetic situation or reflection on consequences of ergodic action (Fig.9, 1); "explicit interactivity," which is constituted by the "overt participation" of the player in gameplay and their performance of extranoematic work prompted by the game as a system of rules or simulation - this is the dominant understanding of "gameplay" in popular discourse and is the primary target of most game design (Fig.9, 2); functional interactivity, which pertains to the "structural interactions with the material components of the system (whether real or virtual)" (59), such as experiences with the physical interfaces, responsiveness of controls, legibility of text, etc. (Fig.9, 3); and "beyond-the-object interactivity," which involves

"interaction outside the experience of a single designed system," such as recollection of transmedial narratives and lore of the game world, productions of fandom, etc. (Fig.9, 4).

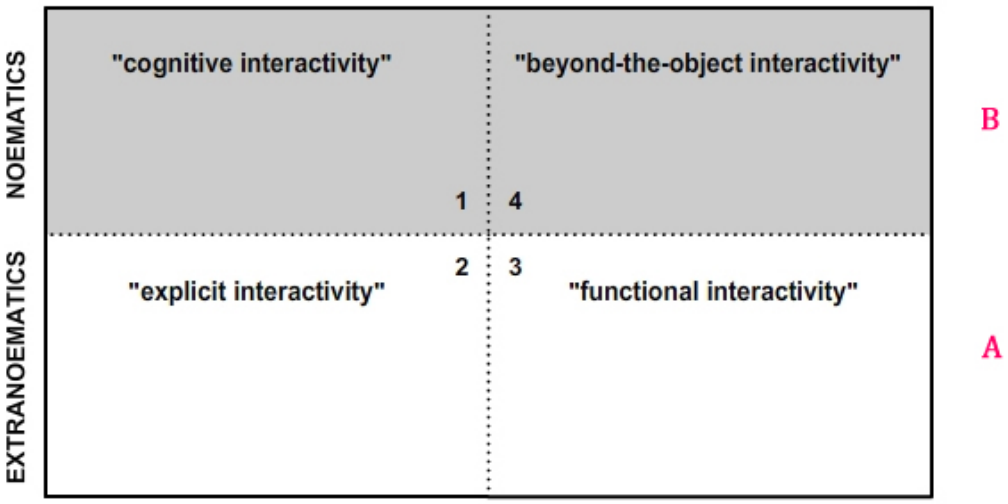

Figure 9 - Modes of Interactivity and the Phaneroscopical Perspective

In this schematization of Salen and Zimmerman's "multivalent model of interactivity" the extranoematic forms of interactivity (2+3) that are often accounted for in a narrow phenomenological perspective of gameplay (A) are included in the phaneroscopical perspective (A+B) that takes into account all forms they identify (1-4).

In schematizing Salen and Zimmerman's model in this way we can more clearly identify what a phaneroscopical *perspective* on gameplay entails. Explicit and functional interactivity are phenomena present to perception and mediated primarily by the game as an ergodic system. Cognitive interactivity and the *noematic* aspects of the "beyond-the-object" interactivity are often abstracted from our understanding of gameplay, yet in some games these modes are foregrounded by design.[33] The project of rethinking gameplay is aided by a phaneroscopical

[33] Salen and Zimmerman seem to be oriented by fandom production and the creation of online communities, resources, etc. in their thinking about "beyond-the-object" interactivity. However, it is also important to include interactions involving the interpretation, synthesis, and application of information and narratives outside the given

perspective because it acknowledges all these modes of interactivity as part of the organization of experience in gameplay. Historically, what it accomplishes is a needed counterbalance to the emphasis on ergodic form and actions in the discourse on digital games.

Although it may be natural, even convenient to affirm the distinctions expressed by Enzensberger in the second epigraph - that games as new media are oriented toward action rather than contemplation - we can do so only through an abstraction of gameplay that ignores the details of noematic work generally, and much of what makes CRPG gameplay unique in the contemporary media ecology. Gameplay experiences like the account of Twin Lamps and active questing in *Morrowind* above not only become more visible and discussable through what I have awkwardly called a "phaneroscopical perspective," they also become powerful exemplars of the imaginative and reflective aspects of gameplay so regularly lost in the apotheosis of ergodic action in popular and academic discourse on game media.

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game experience, especially in the case of CRPGs which often build lore and narratives across games and other media. For example, the novelization of the massively multiplayer online roleplaying game *World of Warcraft* creates a corpus of stories and lore that interact with the active game, affecting and informing the gameplay of players who read the novels. In the case of *Morrowind* and many other single-player CRPGs developed as a series gameplay is often mediated by understanding of lore that is developed across games, constituting a type of "cognitive interactivity" that goes "beyond" the activity Salen and Zimmerman associate with this term. In any case, it is helpful to make this kind of distinction since it enables more detailed discussion in the domains of media poetics and game design.

Chapter 2:
Slow Media and the Problem of Reflection in the Contemporary Media Ecology

> We would never invent a machine to decelerate, to slow down.[34]
>
> - Paul Virilio

> To high speed change no adjustment is possible. We become spectators only and must escape into understanding.[35]
>
> - Marshall McLuhan

> You can't depend on your eyes when your imagination is out of focus.[36]
>
> - Mark Twain

In the previous chapter I argued that although the concept of ergodics was historically effective at rendering interactive media experiences more distinguishable and discussable, it can also facilitate reductive ideas of digital gameplay that block appreciation and analysis of game media that engage the player in various forms of "noematic work." In order to explore how a computer game can design for empathic reasoning, creative speculation, imaginative schematization, narrative inference and other forms of reflective and imaginative work we had to attend to the temporal and developmental aspects of gameplay as an organized experience, in particular how diegetic information can modulate player action with various modes of reflective

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[34] This statement appears in "Perception, Politics and the Intellectual," an interview by Niels Brügger reprinted in *Virilio Live*, 2001.

[35] McLuhan in conversation with Clause Bissell, 1960.

[36] *A Connecticut Yankee in King Arthur's Court*, p.436

activity. In this chapter I expand these observations about noematic work and the organization of information in the context of computer roleplaying game design into a broader discussion of the activity of reflective thought, its challenges and its prospects, in the context of the contemporary media ecology.

§2.1 | Introduction: A "Slow Hunch" About Human Thinking

The turn of the twenty-first century is a convenient reference point for marking both the rise and growing prevalence of posthumanist perspectives as well as a basic working consensus in recent humanities scholarship about the centrality of digital media and computer-based technologies.[37] With respect to how we imagine the human activity of thinking, these developments are mutually reinforcing. On the one hand, posthumanism complicates any abstract notion of a completely autonomous human mind *thinking about* things with the acknowledgment that all thinking is mediated or co-created with an environment—that human thinking is always a *thinking with*. On the other hand, the humanities, accustomed to educating and thinking with print media, are being forced to acknowledge and adapt to (or resist) a contemporary media environment dominated by digital media.[38] The result has been an intense

[37] Defining posthumanism is very difficult and the primary subject of several book-length treatments. Definitions largely depend upon what aspects and values of humanist discourse are selected as contexts and the contemporary innovations or circumstances used as exemplars. For example, William Spanos articulates posthumanism in the context of education (1993), N. Katherine Hayles (1999) and Tom Foster (2005) via SF literature; Francis Fukuyama (2002) via biotechnology and politics; Bruce Clarke (2008) in relation to narrative and systems theory; Cary Wolfe (2010) in the context of theory and cultural studies. My usage here is not technical and only of meant to indicate the thematic acknowledgement of nonhuman factors in understanding human thinking.

[38] The emergence of the scholarship and curriculum initiative descriptor "Digital Humanities" (digital humanities) and the growth the Humanities, Arts, Science, and Technology Advanced Collaboratory (HASTAC) are two expressions of this development. For more, see Kirschenbaum (2010) and <http://hastac.org/about>.

focus on material mediations of human thinking and practices generally, and digital media specifically.[39]

Taken together these developments indicate a maturation of what Steven Johnson would call a "slow hunch," which he argues is a general quality of all human innovation. Johnson's notion of the "slow hunch" is useful because it stresses the slowness of invention as a cultural and historical phenomenon involving a constellation of factors, and it counters our natural impulse to search for a moment of epiphany experienced by a solitary genius as an explanation for new ideas or technologies. The slow hunch in question, stated crudely, is that what we understand as human thinking (its qualities, modes, etc.) is inextricably linked to and shaped by media—the various "tools of the mind" that pervade everyday life (Carr 39). We can identify many potential origin moments of this particular hunch, but it becomes directly intelligible in the previous century with new technologies proliferating as modern sciences develop and multiply, nations prepare for and engage in world-scale wars, and societies adapt to postindustrial information and communication technologies.[40] Perhaps the most concise, instructive, and amusing example can be seen in a brief comparison of two identically titled texts, both expressly about human thinking, published just over a century apart: John Dewey's *How We Think* in 1910, and Katherine Hayles's more recent book, which conveniently and revealingly includes the subtitle "Digital Media and Contemporary Technogenesis" (2012).

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[39] Or, less concisely: computer-mediated, networked hypermedia and digital games. There is also a feeling of historical duress and a sense that institutional and cultural understanding and adaptation have been too slow. For a general account of this problem as a significant historical situation see Palfrey and Gasser (2010). For an academy-focused account see Davidson (2012).

[40] I am thinking here of Norbert Wiener (1956) and what is sometimes called the "Second Industrial Revolution," which marks a change in focus from mechanization to feedback machines, as well as Manuel Castells and the notion of the emergence of "network society" (2009).

Dewey's text, which is about the nature and training of human thought, provides a powerful example of the kind of humanist approach to thinking that contrasts so sharply with posthumanist commonplaces. The focus is overwhelmingly on the individual thinker and the process of reflective thinking. For Dewey, training "reflective thought" is primarily a matter of developing techniques, habits of thought, and self-understanding: of using logical analysis, of understanding modes of thought and kinds of inference, how to consider experiences and facts, and so on. In addressing the topic of "how we think," both in training thought and recognizing sources of inspiration and error, Dewey makes no mention of media forms or technologies beyond language itself. Even in sections where a contemporary reader might expect some consideration of media, such as "Natural Resources in the Training of Thought," we find the focus is on methods (e.g. "orderliness"), ideas (e.g. "continuity"), and attitudes (e.g. "curiosity"). The only conditions of thinking directly addressed are exclusively social, having to do with the interactions of people in institutions and the communal nature of inquiry.

In contrast, Hayles begins her text by simply asserting: "we think through, with, and alongside media" (1). The contemporary context and emphasis of the discussion has changed significantly: the role of technology, particularly the subset comprising "digital media," is paramount. The question of how to train thought has changed to a concern for how thinking is informed by, and ought to respond to, the conditions presented in the current media ecology. While both approaches make education and educational practices primary reference points for addressing the problems of conceiving of and training human thought, Hayles's arguments reflect a growing consensus that any sufficient response must acknowledge and attend to the role technology plays, and digital media in particular.

At the core of this slow hunch about human thinking is the idea of "technogenesis," a term that foregrounds the view that humans and technics coevolve (Hayles 10).[41] This idea indirectly complicates our understanding of "how we think," and by extension all contemporary projects of training thought, by underscoring the increasing influence of technology in biological and social evolution. Furthermore, it provides a compelling conceptual ground for the rationale behind media studies and the increased focus on digital media. Drawing on work in paleoanthropology and evolutionary biology Hayles concisely summarizes the process of technogenesis and positions us to see the significance of media – and the media ecology as a system – in addressing human thinking:

> [R]ecent work in evolutionary biology has acknowledged the importance of epigenetic changes--changes initiated and transmitted through the environment rather than through genetic code. This allows for a second modification, the idea that epigenetic changes in human biology can be accelerated by changes in the environment that make them even more adaptive, which leads to further epigenetic changes. Because the dynamic involves causation that operates through epigenetic changes, which occur much faster than genetic mutations, evolution can now happen much faster, especially in environments that are rapidly transforming with multiple factors pushing in similar directions. Lending credence to this hypothesis is recent work in neurophysiology, neurology, and cognitive science, which has shown that the brain, central nervous system, and peripheral nervous system are endowed with a high degree of neural plasticity. (10-11)

[41] The notion of technogenesis has become a topic of interest in both popular and academic discourses: Kevin Kelly's *What Technology Wants* and Bernard Stiegler's multi-volume *Technics and Time* serve as particularly relevant examples, respectively, that explore the relation between humanity and technology (in general) in the context of evolution.

This passage takes us from a general recognition of the importance of environments in human evolution to the insight that engineered epigenetic changes, such as those facilitated by media technologies, can sync up and reinforce each other, forming subsystems that "accelerate" the evolutionary process by making certain genetic mutations (as well as practices, ways of thinking) more adaptive.[42] When considered together with ongoing insights into the scope and nature of neuroplasticity and limitation in the human brain this account of technogenesis suggests that large-scale changes in the media ecology, such as those identified with digital media, will have an outsized impact on our habits of thinking and perceiving.

The extent of the influence is impossible to determine, and the acknowledgement of Hayles's argument on the macro-cultural scale too often leads to reductive and unhelpful arguments about technological determinism. Rather, it is most helpful to work with the notion of an evolving and dynamic ecosystem of expressive and communicative media that subtly influences thinking practices (especially habits of reading) *en bloc* by discouraging, deemphasizing, or resisting some forms while encouraging, emphasizing, and enhancing others, continually prompting individual adaptation.[43] Hayles has intelligently constrained her approach

[42] Bernard Stiegler provides an even more complex framework for thinking about this dynamic in volume two of *Technics and Time* (2009). There he distinguishes between three types of memory, each operating at different speeds of change: genetic memory, epigenetic memory, and tertiary or epiphylogenetic memory. Tertiary memory is marked off from epigenetic memory to introduce a differential between the speeds of organic individual and cultural forms of memory and inorganic/technological forms.

[43] Historian and philosopher of technology David Nye offers the helpful term "soft determinism" to conceive of the complicated relationship between media systems in the aggregate and their influence on individual human practice. This concept identifies a kind of accrued cultural and economic inertia of a technical system (which we can easily extend to media), which is not determining but very difficult and costly (in the broadest sense of the word) to resist, oppose, or counteract directly by virtue of its pervasiveness and social integration.

by indicating the historical and the media-specific nature of the problem of *contemporary* technogenesis:[44]

> As digital media, including networked and programmable desktop stations, mobile devices, and other computational media embedded in the environment, become more pervasive, they push us in the direction of faster communication, more intense and varied information streams, more integration of humans and intelligent machines and more interactions of language and code. These environmental changes have significant neurological consequences, many of which are now becoming evident in young people and to a lesser degree in almost everyone who interacts with digital media on a regular basis. (11)

There are a few ideas in need of emphasis and further comment here. First, Hayles links the problem to digital media and their increasing mediation of everyday life, and especially communication. Taking this link seriously means that addressing any perceived problems of contemporary thinking entails developing an understanding of *digital media* and their influence in the contemporary media ecology. The animating concerns for Hayles's view are primarily the challenges a digital media-dominated process of contemporary technogenesis presents for humanities education, but the *ground* of those concerns are the complications the contemporary media ecology presents for Dewey's original goal of developing and training "reflective thought." Addressing this ground will require more critical focus on the activity of thought in relation to specific digital media forms (and all expressive media generally) than is suggested by Hayles here, where the tension between a conceptual notion of technogenesis shaped by the current media ecology together with the goals of educational institutions constitute the

[44] By focusing in on particular media forms *and* historical conditions Hayles avoids the perennial error of attributing the problem to technology generally, or a particular subset of technologies, as though their effects are universal across conditions.

significant frame. For while this framing enables interesting social commentary on media technologies and articulation of problems on the cultural and historical scales, it also reinforces our tendency to operate with reductive conceptions, in this case of both the thinking process and digital media, maintaining a problematic distance from the details of human experience and the individual media objects under analysis. Approaches starting from this frame lose critical value on the experiential scale where reflective reasoning and expression are organized, and we will have to descend or "zoom in" to this scale to improve our understanding of the problems fueling the popular and academic reactions to the issues of contemporary “technogenesis” and reflective thought.

Second, the claim that digital media “push us in the direction of faster communication” appears to be stating the obvious when considered at the historical and social scales of changing media environments and tendencies identified in the aggregate, but it becomes very problematic when we look to the details and poetics of individual media objects. In fact, part of my task in what follows will be to show that the issue of speed, which is closely linked to the topic of media and reflective thought, is not only more complex than has been suggested, but that uncritical acceptance of a correlation between digital media and speed underwrites popular reactionary arguments about the negative effects of digital media, and also severely inhibits development of insightful criticism and creative design strategies for digital media that could otherwise provide the very means that Hayles and others argue we need to survive, understand, and even benefit from the disruptive effects of contemporary technogenesis. This is not to argue that Hayles’s characterization of the situation is wrong – only that its power and value is propaedeutic. Indeed, the theme of speed and the contemporary media ecology is a particularly promising starting point because it requires more critical attention be paid to how media experiences unfold and develop,

which in turn protects against the impulse to work *entirely* thematically or conceptually on the scales of mediums and cultures.

Returning finally to the historical perspective, if we summarize the slow hunch about human thinking as a growing acknowledgment of technogenesis (or some variant of this idea) and the influence of the *general character* of the media ecology on human thought we might be tempted to dismiss Dewey's approach and his concerns for the training of reflective thought as outdated or obsolete.[45] However, although his strategy must be revised given the potent influence of the contemporary media ecology on thinking, his focus on the topic of *reflection* is more needful than ever before.[46] If we accept this slow hunch about human thinking, then any discussion of the activity of reflection—its development, prospects, and potential in the twenty-first century, calls for some critical formulation of the conditions provided by the contemporary media ecology (CME).

[45] In fact, this position is present in some form or another in recent discussions of education reform and underwrites many of the arguments for STEM initiatives, as well as some practices in digital humanities pedagogy. Perhaps the most notable example of this position can be found in recent writing by Cathy Davidson (2011).

[46] Dewey's work contains the insight that discussions of human thinking can be improved by attending to our understanding of "experience," and finally that this is actually required if we are to avoid arbitrary conceptual limitations on valuations of thinking and its products. This is a relatively unacknowledged idea across the various "turns" in criticism and theory. In the linguistic, historical, and cultural "turns" of the twentieth century most considerations of human thought were subordinated to conceptions of discourse and text. Later, dominant ideas of "discursive" thought were challenged by new attention to the body, media, and affect in the affective and posthuman turns wherein considerations of thought, especially reflective thought and reasoning, often function as a foil and details are often lost in an enthusiastic conception of immediate aesthetic experience.

§2.2 | The Contemporary Media Ecology[47] and the Macro-Critical Perspective

The most recent stage of technological development sometimes characterized as the "digital revolution" has prompted a healthy and wide-ranging multi-disciplinary discourse focused on exploring the significance of digital media and systems in just about every aspect of life. Making sense of this motley discourse is difficult, but grasping the broad contours helps explain not only why the arguments about the digital tend to read either as utopian enthusiasm or apocalyptic despair, but also why concerns for the activity of reflection cannot be advanced without a modified critical strategy.

There has been a surge of insightful work produced in roughly the last two decades that could be organized under the very general theme of understanding the cultural impact of digital media, information and computation technologies, networks, and the Internet. This includes work as diverse as Janet Murray's *Hamlet on the Holodeck* and Marie-Laure Ryan's anthology *Narrative Across Media* which consider narrative after the digital; the discourse on "new media" in the 2000's spanning early works such as Lev Manovich's *Language of New Media* and Bolter and Grusin's *Remediation: Understanding New Media* to Mark Hansen's *New Philosophy for New Media* and Anna Munster's *Materializing New Media*; work that focuses on the implications of the digital for identity and social experience such as Sherry Turkle's *Life on the Screen* and *Alone Together,* and Palfrey and Gasser's *Born Digital*; work that focuses on political economy and civic life such as Yochai Benkler's *Wealth of Networks,* Evgeny Morozov's *To Save Everything, Click Here*, Eli Pariser's *The Filter Bubble,* and Jaron Lanier's

[47] Even though the previous section makes it clear that the contemporary media ecology is dominated by digital media and systems I stay with the phrase "contemporary" rather than switching to "digital" to emphasize the point that the significance of media, at least on *the cultural scale* (macro-critical), is best framed as a complex historical interaction, between habits and practices and dominant qualities and tendencies of the media ecology.

Who Owns the Future? We could identify and list many other thematic dimensions and emblematic texts to this expanding body of work, but comprehensiveness, which would be impossible given that academic interest in the implications of the digital has been expressed almost universally - across all academic fields, is unnecessary for apprehending the first key point: this work is primarily concerned with the cultural scale – the problems and potentials writ large, in the aggregate of social experience.

This body of work, which we might identify as "macro-critical," has been the primary engine for development in both teaching and research on digital media in the humanities, providing themes for organizing courses and conferences, broad concepts for application and extension in analyses, and renderings of the critical ethos as the contemporary media ecology developed. As such, identifying some of its dynamics yields new insights into the limitations of the macro-critical frame, the most important of which is its tendency to reproduce intractable debates about particular configurations of the media ecology and its dominant media *forms*. As far back as we care to trace the macro-critical discourse we find polarization along an optimism-pessimism continuum.[48] This polarization dynamic was particularly visible in the discussions of hypertext in the 1990s and seems to have only increased in the last decade as the Internet and digital media moved toward the center of culture. The "digital turn," exemplified by the growing popularity and institutional influence of the digital humanities, is shaping up to be the most problematic and intense due to the force and pervasiveness of digital media, and it has resulted in new forms of optimism and pessimism. Understanding the informing concerns of both orientations will help show why the activity of reflective reasoning, usually emphasized as a

[48] I use the term "pessimism" in the narrow, critical sense of tending to see the negative aspects of phenomena, setting to one side the broader emotional sense of the term that includes fatalism and an apocalyptic sensibility.

topic by arguments that would fall on the pessimistic end of the continuum, cannot be addressed sufficiently from the macro-critical perspective.

Pessimistic and skeptical approaches to digital media and systems are frequently written for a popular audience, draw on scientific research, and tend toward the reactionary.[49] Nicholas Carr's *The Shallows* is a good representative example of this end of the continuum that manages to identify and explore negative aspects of the digital media ecology without being reactionary. Carr emphasizes the topics of reading, attention, memory, and the general quality of thought, and as the title suggests, is primarily concerned with a loss of depth in these capacities brought on by our necessary adaptation to the dynamics of the CME.[50] This is a contrast to what one tends to find on the optimistic end of the macro-critical continuum, of which Clay Shirky's *Cognitive Surplus*, Cathy Davidson's *Now You See It*, and the field-defining collaboration *Digital_Humanities* (Schnapp et al.) are good representatives. Where Carr and others have stressed cognitive experience and the quality of understanding, these optimistic appraisals of the CME have emphasized creativity, collaboration, and production.

For example, the authors of *Digital_Humanities* describe digital humanities, which is arguably the most potent and visible expression of the optimistic orientation, as a "*generative* practice" demanding an "*additive* pedagogy" (10, my emphasis). The digital humanities approach also moves "design—information design, graphics, typography, formal and rhetorical patterning—to the center of the research questions that it poses" (vii), and there is a general emphasis on "making" and "project-based" scholarship. Here the digital-centric CME, which

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[49] For example, consider the apocalyptic register of Sven Birkerts's *Gutenberg Elegies: The Fate of Reading in an Electronic Age* (1994) and Mark Bauerlein's *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future* (2008).

[50] We might further complicate the view of the macro-critical continuum by distinguishing between scholars focused on cognitive themes, such as Carr's work, or social themes. A good representative of the latter here would be the recent work of Sherry Turkle, specifically *Alone Together* (2011) and *Reclaiming Conversation* (2015).

simultaneously prompts and enables the work of digital humanities,[51] is celebrated as a new and fertile context for knowledge production and humanities work generally, marking a "major expansion in the purview of the humanities." Indeed, the authors speculate, "the Digital Humanities may well function as a core curriculum for the 21st century" (5).[52]

Although the discourse of digital humanities is not *primarily* concerned with the experiential and aesthetic aspects of digital media or the CME, making the comparison problematic, it is revealing that "cyber-optimist" discourse tends to stress the benefits of new media technology and practices in the abstract, in the register of culture and institutions, and in terms of what new things can be done. However, the authors of *Digital_Humanities* do address experiential aspects in situating digital humanities in relation to the CME when they acknowledge that "the technologies that give rise to the Digital Humanities push us—scholars, students, and citizens alike" into media environments that privilege specific cognitive styles:

> The nature of discourse and debate in networks, the reality of study in multimedia environments, and the inexorable splintering of attention that multiple windows and channels afford lead to pursuing “many ends.” This tendency toward multi-tasking and shortened attention has a multitude of detractors, of course, as well as the usual contrarian supporters of the “everything bad for you is good for you” variety. But the Digital Humanities can confront this reality on the ground (and in the ether) without either

[51] See the chapter "Emerging Methods and Genres" for an excellent list of the types of work associated with digital humanities. (Schnapp 31).

[52] It is unclear how the authors imagine digital humanities functioning as core curriculum. They describe digital humanities as "additive pedagogy" and must supplement traditional humanities pedagogies and learning outcomes, but simultaneously imagine an historical and institutional trajectory that demands an ever-increasing share for digital humanities learning outcomes. These learning outcomes, as noted, focus on critical design, making, collaboration, and literacy and analysis of digital forms of information (Schnapp 134).

> nostalgia for a reader's paradise that never was or the kind of hype over technology that we expect from industry. (97)

The apposite form of digital humanities, then, is a response to the CME and tendencies of contemporary technogenesis.[53] The experience of the "inexorable splintering of attention" and the structural "tendency toward multitasking," which are animating points of concern for the pessimistic and skeptical approaches to the CME, are conceded here but not addressed directly. Ultimately, any experiential concerns - psychological, aesthetic, cognitive - seem to be subordinated to the project of digital humanities as a historically needful and promising initiative.

It is also important to note that similar emphases, dynamics, and results can be found in Cathy Davidson's influential *Now You See It*, despite the fact that it builds its optimistic account of the CME from experiential considerations, specifically the phenomena of "attention blindness." Much like Carr on the pessimistic end of the continuum, Davidson draws on recent work in the behavioral and brain sciences to address the challenges presented by the CME,[54] yet her interpretation and appraisal focuses on cultural opportunity rather than experiential issues. The opportunity is almost always characterized as a social or institutional one: the challenge of the "digital age" to human attention prompts adaptive changes to institutions and pedagogy, which must be "rethought" (12). For example, where neuroscience sees attention blindness as a

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[53] The program of digital humanities the authors advocate for seeks to avoid the extremes mentioned here. See their commentary on "hedgefoxes" as a new figure of the student that combines the traditional cognitive style and disciplinary practices with those demanded by and associated with digital culture (96-98).

[54] It must be noted that while both Carr and Davidson cite scientific studies in their work in order to advance their argument, Davidson builds most of her argument on an interpretation of one particular study, whereas Carr many cites studies throughout his argument to support interpretations of as many phenomena in the experience of the CME, building his pessimistic view more inductively.

flaw or weakness,[55] Davidson sees an injunction to increase collaboration which, serendipitously, is an activity that has been greatly amplified and transformed by the CME. Acknowledging that "the age we live in presents us with unique challenges to our attention" - challenges that present themselves as effects of the CME - Davidson then claims that what is required is "a new form of attention and a different style of focus that necessitates both a new approach to learning and a redesign of the classroom and workplace" (10). Thus for Davison (and the digital humanities program generally) the problem presented by the CME is not its possible negative effects on individual experience, but rather our communal failure to engage in adaptive development in relation to it, and seize new opportunities it affords.

The problem with macro-critical approaches can now be restated differently in light of the preceding sketches. First, the preceding comparison should make it clear that polarization in the macro-critical discourse about the CME is the result of differing emphases rather than disagreements. Second, in both orientations the specificity of media objects is subsumed in a general appraisal of the CME, taken as a determining force in culture, with positive accounts tending to focus on creativity, collaboration, and making, and negative accounts tending to focus on changes in attention, memory, and cognitive activity. Digital media objects enter into this discourse as *mediums*, either as having tendencies that degrade the quality of thought and the experience of information (Carr), or potentials for learning and cultural production that must be

[55] For an extensive discussion of the limitations of the human brain and resulting systemic "flaws" in our thinking processes from the perspective of contemporary neuroscience, see Dean Buonomano's *Brain Bugs* (2011). In contrast to Davidson, Buonomano's solution to the exacerbation of "brain bugs" by the CME involves changing our environment and practices to take limitations and tendencies into account and compensate for them. At first glance this appears similar to Davidson's approach, which in the case of attention blindness calls for collaboration that leverages the digital tools of the CME. However, Davidson's solution is also animated by an adaptation to the environment generally and the transformation of educational institutions and practices in particular to be more responsive to the demands of the CME (she offers a "survival manual for the digital age"). Furthermore, by focusing almost entirely on one element of the picture of the brain provided by recent neuroscience, attention blindness, it cannot (and does not) occur to her that in solving one problem by means which draw on and amplify the tendencies of the CME, others are deepened.

seized through pedagogical and institutional change (Davidson, Digital Humanities). This medium-centric focus of the macro-critical discourse presents a problem for addressing the activity of reflection and its prospects in the CME because the process of mediation and the development of experience in relation to the organization of information in a particular media object is lost in abstraction. The conceptualism required by the macro-critical approach blocks opportunities to see and value how design strategies in particular media objects may challenge, subvert, counteract or transform the tendencies of both the medium being theorized and their expression or effects in the CME as an environment for reflective activity.

This limitation is articulated in the context of contemporary media studies by Galloway, Thacker, and Wark as an historical error in their recent collaboration, *Excommunication*:

> The field of media studies today generally understands media along two interconnected axes: devices and determinacy. On the one hand, media are understood as synonymous with media devices, technological apparatuses of mediation such as the phone, the file, or the printing press. And yet such technological devices are imbued with the irresistible force of their own determinacy. Media either determine a given social, cultural, or political dimension, or media are themselves determined by the social, cultural, or political. Media makers affect media consumers and thus establish hierarchical relationships with them, or media-savvy individuals express their own desires by way of the tools and machines that extend their will. For media studies generally, media are, in short, determinative devices, and they are thus evaluated normatively as either good influencers or bad influencers. (7)

Although the contrary positions described in this passage do not apply cleanly to any one exemplar, they do map the two polar orientations of the macro-critical discourse on the CME

generally, with pessimists tending to view media as a determining factor in creating negative cultural conditions,[56] and optimists tending to view media as privileged tools for affirming positive cultural determinations. Thus diagnoses of contemporary technogenesis and the evaluation of the CME *as an environment* for human experience from the macro-critical perspective lead to a comforting (to each orientation) and endlessly generative (in terms of discourse) polarization that fails to consider "the basic conditions of mediation" (7). Consequently, they do not provide the critical formulation of the conditions constituted by the CME that will, on the one hand, position us to see why reflection is a central problem and exactly how the activity of reflection is challenged, and on the other, create visibility for specific media objects that address the problem as a significant part of their design and expressive strategies (Ch.4).

§2.3 | The Contemporary Media Ecology and the Problem of Speed

The macro-critical perspective leaves us in an unhelpful place concerning the activity of reflection because the digital media experience is *codified* and the poetics of specific media objects are lost in the abstraction of "digital media" – cast as either a disruptive element or enabling tool - resulting in a negative view of the digital when the activity of reflection is privileged or brought into focus, or a positive view when collaboration and creativity are foregrounded. However, the solution to this problem is not to abandon the macro-critical

[56] Carr's view is particularly representative of this: "But if you take a broader historical or social view, the claims of the determinists gain credibility. Although individuals and communities may make very different decisions about which tools they use, that doesn't mean that as a species we've had much control over the path or pace of technological progress. It strains belief to argue that we "chose" to use maps and clocks (as if we might have chosen not to). It's even harder to accept that we "chose" the myriad side effects of those technologies, many of which, as we've seen, were entirely unanticipated when the technologies came into use" (47).

perspective entirely in favor of analyzing "the basic conditions of mediation," but rather to historicize and temporalize this scale – to take both the historical trajectory of the media ecology as well as the experiential temporality of the emblematic or epochal media forms into privileged consideration. It will do no good to turn to micro-scale concerns of the CME and engage with specific media experiences - as I have suggested we ultimately *must* do - if the articulation of their significance is confined to the cultural register of the macro-critical discourse summarized above. Before we can turn to the media experience along the lines suggested by Galloway, Thacker, and Wark, and on to the specificity of individual media objects, we must modify our strategy within this macro-critical frame.

We can identify a particular thread of the macro-critical perspective on media and technology that *foregrounds* historical and temporal dynamics that emerges in the late 1960s in response to the postwar technological imagination and the effects of its implementation.[57] Although accounts of the disruptive effects of new artifacts and technologies on society and human experience in everyday life go as far back as we care to look, this timeless concern finds a more generalized and publically visible expression in the postwar period, most notably in the writings of Marshall McLuhan and Alvin Toffler.[58] One of Marshall McLuhan's provocative comments of the era wondered how humanity may "get out of the maelstrom created by [its] own

[57] The "postwar technological imagination" I am referring to was emblematically captured by Vannevar Bush's famous essay "As We May Think," and developed in the writings on cybernetics by Norbert Wiener. Hallmarks of the postwar technological imagination are an emphasis on the application of new technologies to enhance human capacities and exploratory reflection on the social impacts of this application.

[58] Both McLuhan and Toffler were tremendously influential in shaping the popular discourse on media and technology during this period. McLuhan was a very visible public intellectual writing essays for popular magazines, doing television interviews, and publishing widely read books, including the canonical *Understanding Media* (1964). For a more detailed account see W. Terrence Gordon's biography *Marshall McLuhan: Escape into Understanding* (1997), and transcripts of interviews and public lectures can be found in *Understanding Me: Lectures and Interviews* (2003) or in digital audio and video forms in the *Marshall McLuhan Speaks Special Collection* <www.marshallmcluhanspeaks.com> (2015). Toffler's book *Future Shock* (1970) was a widely disseminated international bestseller that was also adapted into an award-winning documentary narrated by Orson Welles (1972).

ingenuity," a formulation that memorably captures a spirit of concern that orients era-defining popular works such as Alvin Toffler's *Future Shock* and extends into the present.[59] It is finally the "maelstrom of ingenuity" itself, the systemic or environmental quality of the contemporary process of innovation, that becomes the focus of reflection and criticism, particularly within a historical frame and trained on human experience. However, contemporary macro-critical perspectives often interpret this "maelstrom" by identifying (and speculating from) the qualities of dominant media and practices – in our moment, those associated with digital media – but as noted above this can lead to overly narrow, expedient, or obfuscating readings of the CME.

Part of the remedy for this problem can be found in these earlier, more speculative approaches that can be characterized as macro-critical perspectives on media but which still reference notions of *human capacity* as a element of their critical orientation (rather than ideas of culture, politics, or technological innovation), and contain broad historicist sensibilities.[60] Ironically, then, the dominant macro-critical perspectives on the CME that I have characterized above turn out to be not "macro" enough in at least two senses:

1. They imagine the potentials or problems of the CME *through a general conceptualization of the digital or "new media,"* never considering that a more apposite and effective approach would be *relational*, focusing on a critique of the relations of digital media within the CME, not just between technical objects and physical systems, but also in relation to culturally or historically important

[59] It should be noted that McLuhan's "maelstrom" comment was made in 1977, However, the concern it expresses about the human challenges posed by technology and the imperative to reflect on what Jaron Lanier and others refer to as the "human technological condition" is present in his earliest works and public remarks in the 1960s.

[60] I will not be pursuing arguments about *humanism* here, and the particulars of McLuhan's early humanism influenced by his literary interests, for example, or even Toffler's psychology-informed humanism are less important than their inclusion of *any idea at all* of the human in terms of capacity, especially with regards to limitation.

experiences and practices. This is the ecological sensibility McLuhan maintained in his work, particularly with his theory of figure/ground repurposed from the visual arts.[61]

2. They tend to consign to the background or outright ignore *the historical dimension* (beyond claims of epochal “turns” or "paradigm shifts") and temporal dynamics, failing to acknowledge, for example, cultural inertia or the speed *differential* between time scales at play in the human experience of the CME.[62]

Many of the reflections McLuhan and Toffler provide on media and technology are emblematic of the early speculative efforts to diagnose what will later be theorized and systematically studied in this century as the problem of “social acceleration.”[63] It is from this time-focused perspective – both in the sense of historical time (of cultural developments and trajectories) and

[61] For an accessible explanation of these key concepts in McLuhan’s work see (2010), pgs.1-28; and for their significance see Eric McLuhan’s edited volume *Essential McLuhan* (1995), part IV.

[62] This idea has been expressed in the form of a philosophy of memory by Bernard Stiegler in his multivolume *Technics and Time* (1998, 2009, 2010). His three forms of memory: genetic, epigenetic, and epiphylogenetic have different rates of change, suggesting that the temporal dynamics of their interaction are integral to understanding technology and its relation to life. This is helpful in drawing out problems hidden behind ideas of adaptability and the dynamism of culture often used to dismiss concerns about technological changes. Highlighted for the public imagination and amplified by recent brain science, the concept of neuroplasticity has become a favored reference to allay concerns about the effects of technological change, suggesting that negative effects are temporary, pending human adaptation. However, as cognitive neuroscientist Stanislas Dehaene reminds, there is no "infinite adaptability of the brain to culture" (6).

[63] For indispensible reading on the theory of social acceleration see the works of American political scientist William Scheuerman (2004) and German sociologist Hartmut Rosa (2005/2013). Scheuerman focuses on the “social experience of speed” and its acceleration by tracking changing dynamics in economics, technology and democratic institutions and practices with the goal of assessing the prospects of *democracy* generally. Rosa posits the phenomena of social acceleration as the new and most meta or comprehensive and consistent theory of *modernity*, developing the concept and systematically exploring it in relation to the four classical theories of modernity associated with Durkheim (functional differentiation), Simmel (individualization), Marx (domestication of nature), and Weber (rationalization), arguing that each are only part of a more general historical dynamic system of acceleration.

phenomenological time[64] (aesthetic experience unfolding over time) – that we can best make sense of and evaluate the CME and its relation to the "basic conditions of mediation." Pursuing this version of the macro-critical perspective will reveal that the urgent task is not an evaluation of the relation between digital media forms, digital culture (the main constituents of the so-called "digital revolution") and the activity of human reflection, but rather of systemic anti-reflection dynamics constituted by a more crucial and determining relation between the CME and what sociologist Hartmut Rosa describes technically as the general historical phenomena of "social acceleration" (2005). Acknowledgement of social acceleration as a primary historical factor will enable a more productive valuation of specific media environments and media poetics as they relate to the activity of reflection, and will suggest the need for a new *time-centric framework* for analyzing media that allows us to identify, discuss, and appreciate significant qualities of media objects that interact - even counteract - these anti-reflection dynamics of the CME resulting from its particular relation to social acceleration.

The formal theory of social acceleration concerns the "long-term yet relatively recent historical process consisting of three central elements: technological acceleration (e.g., the heightening of the rate of technological innovation), the acceleration of social change (referring to accelerated patterns of basic change in social units such as the workplace, family, etc.), and the acceleration of everyday life (e.g., via new means of high-speed communication or transportation)" (Scheuerman xv). According to Rosa, these three elements or "dimensions of

[64] I contemplated the term "psychological time" here for familiarity, but it is imprecise and potentially confusing depending on the scope granted to psychology. Toffler discusses both the physical and psychological "dimensions" of future shock, and this is roughly what is intended here: the aesthetic experience of individuals unfolding in time.

acceleration" form a *system*, mutually and perpetually reinforcing a "circle of acceleration" (xx).[65] In his translator's introduction Jonathan Trejo-Mathys summarizes Rosa succinctly:

> Simply put, technical acceleration tends to increase the pace of social change, which in turn unavoidably increases the experienced pace of life, which then induces an ongoing demand for technical acceleration in the hopes of saving time, and so on back around the circle. However, each of these forms of acceleration also has an external driver or "motor" that injects further energy into the circle of acceleration. When the effects of these external motors are combined with the internal interaction of the forms of acceleration, the result is a self-propelling "spiral" of acceleration that takes on a life of its own and does the lion's share in generating the experience of a "runaway world." (Rosa 2005 xx)

It is the *human experience* of this "circle of acceleration," conceptualized and systematically developed by Scheuerman and Rosa, that provides the crucial context for thinking about the CME and its relation to the activity of reflection.[66] The most relevant quality associated with the idea of social acceleration advanced by Scheuerman and Rosa is the "social experience of speed," and in the remainder of this section I will use the discourse on social acceleration to help characterize a general *problem of speed* presented by the CME.

Speed is a natural enemy of reflection, and it has been a perennial temptation of the macro-critical orientation to attribute speed specifically to digital media, but it is more accurate

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[65] For Rosa's detailed technical account see *Social Acceleration*, (71-78), and for a schematization see figure 7.1, (194).

[66] It is beyond the scope of my project to argue the reality of social acceleration, its details, or its morality. I accept Rosa's general account of the phenomena, setting aside the aspects of his argument having to do with a new theory of "modernity," and his account of the causes (151-210) and consequences (211-298). However, my approach is inspired and informed by Rosa's view that we need a "critical theory of acceleration" capable of "identifying acceleration-induced social pathologies without relying on the normative criteria of a now questionable philosophical anthropology or philosophy of history" (298). The poetics of "slow media" may be seen as a crucial supplement to a critical theory of acceleration.

and useful critically to understand it as an effect of the relation between the more or less immutable historical forces of "social acceleration" (viz. Rosa's "circle of acceleration," McLuhan's "maelstrom of ingenuity") and the dominant character and design tendencies of the CME in general rather than a quality of the media type itself. The problems or potentials of digital media actually have more to do with the relation between particular digital designs and the systemic tendencies of the CME under the conditions of modern social acceleration. Accepting this view means that the solutions to any perceived problems with human experiences of media will have to acknowledge that critical politics of media and culture, however ingenious, are certainly necessary but ultimately insufficient. The problem of speed, while obviously political in its effects, emerges precisely when the *aesthetic* dimension of media is foregrounded. It is this "aesthetics first" orientation that links early speculative approaches to “electric media” like McLuhan’s with contemporary neuroscience studying media effects.

Prior to its systematic characterization by Scheuerman and Rosa, the conditions of social acceleration were indirectly formulated by early speculative approaches to media, where problems of speed are identified at the level of individual human experience. For example, central to McLuhan’s approach to media is the idea of mediation of sensory experience by the media environment, as well as by individual media objects.[67] McLuhan argues that media "alter sense ratios [and] patterns of perception," and "configure the awareness and experience of each one of us," doing so “without resistance” (1964 18-21). The grounding of his approach in the experience of media and the idea of mediation lead McLuhan to focus on understanding the effects and significance of media in terms of alteration and relation, both at the level of culture as

[67] This is particularly the case for McLuhan's early and middle works before a sharper turn toward semiotics and biologism in his final work with Eric McLuhan, *Laws of Media*. However, the focus on interpreting the human experience of mediation gives way to a more "posthuman" goals of reading the "grammar" of media systems and more direct attempts to trace connections between contemporary biological understandings of the human to media.

well as the individual human being. Analysis of the former generates a commentary on media that highlights the cultural dynamics of transitioning to media environments dominated by new media forms, developing into the acknowledgement of "cultural lag": the speed of human adaptation to new media ecologies cannot keep pace with the "maelstrom of ingenuity."

Analysis on the latter, the level of individual experience, generates many perceptual and psychological insights about the overwhelming of human capacity, especially by the new "electric media": problems of speed manifest at this level as "autoamputation" and general feelings of stress and anxiety.[68] McLuhan highlights the quality of "electric speed-up" precipitated by automation (1964 461), and the collapse of understanding into "pattern recognition" as human senses are overwhelmed by the new complexity, quantity, and faster speed of information achieved in electric media forms (1988 107). This general theme is pervasive in the critical literature, finding expression in Lewis Mumford's arguments about "machine culture" and the radical changes in the "tempo and rhythm" of life (159), and Alvin Toffler's conception of future shock, wherein the adaptability of the "biosystem" is outpaced by accelerating technological development (304).

In these and many of the other speculative accounts from the period the theme of speed is pervasive, with a particular focus on the sensory experience of information via communicative media:

> Thus, as radio, television, newspapers, magazines and novels sweep through society, as the proportion of engineered messages received by individuals rises (and the proportion of uncoded and coded casual messages correspondingly declines), we witness a profound

[68] McLuhan appropriates the term autoamputation physiology to talk about the dynamic changes among the senses when one is "superstimulated" with information in the media experience: "The selection of a single sense for intense stimulus, or of a single extended, isolated, or "amputated" sense in technology, is in part the reason for the numbing effect that technology as such has on its makers and users. For the central nervous system rallies a response of general numbness to the challenge of specialized irritation" (42).

> change: a steady speed-up in the average pace at which image-producing messages are presented to the individual. The sea of coded information that surrounds him begins to beat at his senses with new urgency. (Toffler 148)

Toffler moves between the experience of individuals and the social sphere, emphasizing the relation between the aesthetic experience of the individual and the media environment as he does here, articulating the problem of speed in various descriptions of this interface in different contexts.[69] In the subsequent decades we find a shift to greater emphasis on the relation between the experience of time and cultural systems, most notably in the work of Paul Virilio. Virilio's *Speed and Politics* is emblematic of many other attempts during the 80's to understand and historicize the social effects of changes in the media ecology, adding new contexts for articulating the problem of speed.[70]

The significance of these early speculative accounts consists not in their accurate measurement of media effects or critical predictions but rather in their identification of the *temporality of the media experience* as primary focus as well as their *historical framing*. Despite their inadequacies and potential for ideological appropriation (e.g. serving as grounds for anti-modern or anti-technology arguments) these speculative approaches to the media ecology form a critical legacy that contemporary researchers of social acceleration acknowledge as comprising the "classical theories" of social acceleration, offering crucial provocations and heuristic concepts to our analyses. Virilio in particular is singled out by Hartmut Rosa as providing

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[69] For a full survey see Part II. "Transcience" (Toffler 45-162). Toffler glosses on changes in consumer economics and culture, friendship, individual and group identity, community, work life, etc.

[70] For example, Walter Ong's seminal *Orality and Literacy* (1982) and its reflections on the cultural and cognitive effects of changes in the media paradigm, or Jeremy Rifkin's *Time Wars* (1987) and its development of a "politics of time." Ong is actually an important precursor given his sensitivity to the media experience with respect to historical change, as his theory of "secondary orality" points to the importance of the relation between the dominant dynamics of the inherited media ecology and the experience of transitioning to new media poetics.

perhaps the most insightful yet painfully unsystematic appraisal of what is now understood and studied as the phenomena of social acceleration (2005 56).

Rosa's criticism of Virilio's account of the problem of speed generates some crucial insights. Rosa criticizes Virilio's narrow focus on the technological sphere as a means of understanding the emerging problem of speed, lacking any reference to existing social theories that could inform his criticism. In *Neuropolitics,* William Connelly expresses a related concern about narrowness, arguing that Virilio "allows the military paradigm to overwhelm all other modalities and experiences of speed" (178). In both cases the issue is that the problem of speed is interpreted with too narrow a frame: Virilio has already identified and isolated the primary agent of the acceleration (technology), and judged its effects negatively in reference to a single paradigm (military violence). We should understand this not as a flaw in Virilio's program but an implicit strategy, foregrounding a theory and history of "chronopolitics" at the expense of a stable basis for the more systematic conceptual understanding of social acceleration that Rosa and Scheuerman now pursue. The result is a provocative characterization of the *politics* of social acceleration within the technological sphere that inevitably frames the problem of speed as political, and also negative.[71] Consequently, Virilio functions as a great catalyst for critical reflection and source of concepts that nevertheless articulates a limited view of the problem of speed, the usefulness of which is more or less confined to the macro-scale discourse of technopolitics.

Scheuerman and Rosa's development of a rigorous, comprehensive and systematic theory of social acceleration in the last decade enables a more productive criticism of the CME by virtue of its critical scope and dogged refusal to collapse the problem of speed into a single domain,

[71] Connelly also argues that Virilio's approach blinds him to the positive aspects of speed, especially in its undermining of dogma and affinity with eccentricity, novelty, and pluralism. His project of "neuropolitics" is a contrast to Virilio's "chronopolitics," emphasizing the affective aspects of social acceleration.

namely that of technology and media. Although Rosa's theory is framed as an alternative theory of modernity, his characterization of social acceleration helps position us to see the topic of reflection and the concern for its prospects relative to media not as a problem pertaining to our politics *of* the CME, digital media and its uses, such as we found in the macro-critical perspectives addressed in the previous section, but rather as a more fundamental one pertaining to what Galloway, Thacker, and Wark identify as the "basic conditions of mediation," *in a historical frame*. Rosa's systematic theory of social acceleration is crucial to our criticism of media experiences because it provides a means of thinking the *dynamics* of these "basic conditions," offering a fresh context in which to evaluate the poetics of media from a macro-critical perspective. Perhaps more importantly, Rosa's perspective protects against a kind of reductive, ahistorical materialism that can emerge as neuroscientific accounts of media experiences increase in influence, while simultaneously acknowledging their relevance in understanding social acceleration given its experiential qualities which are produced not just by social structures and historical dynamics, but also by the dynamics of human perception and cognition in relation to media.

In fact, one important and instructive idea that cuts across early speculative accounts of social acceleration, Rosa and Scheuerman's systematic theory, as well as recent neuroscientific attempts to address human experience in the digital age is *limitation*. Where Toffler and McLuhan posited the experiences of "future shock" and "autoamputation," and Rosa and Scheuerman note that "acceleration might outpace our capacities for the successful integration of temporal experience as well as our ability to synchronize disparate temporal logics" (2009 13), neurobiologist Dean Buonomano places the problem in an evolutionary context:

> [T]oday we live in a world that the first Homo sapiens would not recognize. As a species, we traveled through time from a world without names and numbers to one largely based on names and numbers; from one in which obtaining food was of foremost concern to one in which too much food is a common cause of potentially fatal health problems; from a time in which supernatural beliefs were the only way to "explain" the unknown to one in which the world can largely be explained through science. Yet we are still running essentially the same neural operating system. Although we currently inhabit a time and place we were not programmed to live in, the set of instructions written down in our DNA on how to build a brain are the same as they were 100,000 years ago. Which raises the question, to what extent is the neural operating system established by evolution well tuned for the digital, predator-free, sugar-abundant, special-effects-filled, antibiotic-laden, media-saturated, densely populated world we have managed to build for ourselves?" (15)

This comment frames the research explored in *Brain Bugs*, in which Buonomano addresses neurobiological limitations for human adaptation to the modern social environment, especially the CME with its emblematic experiences of information through digital media. While popularization of neuroscience research in public discourse has tended to emphasize the wonders of neuroplasticity, reading in the academic literature provides more of a sense of limitation and obstinate tendencies in human cognition than an infinitely adaptable and extendable brain.[72] Here the problem of speed is expressed through the clashing of temporalities of evolution and human

[72] Interesting and relevant work that spans many areas of study often lumped together under the heading "brain science" in popular discourse, including neurobiology, behavioral economics, cognitive psychology, and evolutionary psychology is worth engaging to develop an appreciation for the role limitation and structure plays in the experience of information. See especially Stanislas Dehaene's *Reading in the Brain* (2009), Daniel Kahneman's *Thinking, Fast and Slow* (2011), and Daniel Levitin's *The Organized Mind* (2014).

culture, where the general historical condition of social acceleration Scheuerman and Rosa identify takes on a more dire character, for "even if we are capable of gradually increasing our tolerance for speed, there still seems to be no guarantee that we will do so in accordance with temporal requirements of specific social spheres of life" (2009 13). The "temporal requirements" foremost on the minds of Scheuerman and Rosa are those associated with democratic society, including - but of course not limited to - the practice of reflection and deliberative thought.

However, if we take recent developments in neuroscience into account as an important supplement to our understanding of social acceleration, the significance of the problem of speed is not only relative to "social spheres" but to human cognitive processes as well.[73] This idea is registered through familiar concepts addressing human attention and memory such as "information overload" and "decision fatigue" that have already entered popular discourse, and explored in more esoteric theories such as the "Yerkes-Dodson law" or the "neuronal recycling hypothesis."[74] Although there is no consensus and no great synthesis to be found of the insights the many fields engaged with neuroscience currently offer, there is an identifiable convergence on the dynamics of human attention and memory as they interact with the CME - both of which are integral to any conception of reflection as a cognitive process.

Returning finally to the question of speed and its relation to the CME, we can now see that the problem is constituted both from above and below. Scheuerman and Rosa provide an account of the historical process of social acceleration as a primary context for "understanding the human condition at the start of the new century" (Scheuerman xiii), arguing that the "social

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[73] The cognitive psychologist Daniel Levitin addresses this topic directly in *The Organized Mind*, connecting the experience of the contemporary media ecology to research on cognition. See especially "Too Much Information, Too Many Decisions: The Inside History of Cognitive Overload" (3-36).

[74] For an in depth discussion of neuronal recycling see Dehaene's *Reading in the Brain* (144-147).

experience of speed" is a universal quality of modernity that affects all cultural and cognitive processes. This view from "above" does not identify the problem of speed with media, but with an historical dynamic: "waves of acceleration" (the "digital revolution" being the most recent) propelled by more general economic, cultural, and sociostructural "motors" locked in a historical "self-reinforcing feedback system" or "circle of acceleration." Thus the CME takes on a new critical significance, and media objects new meaning, not in relation to the values circulating in the macro-critical perspectives and their thematic judgments outlined previously, but in relation to the historical force of social acceleration.[75] The primary lesson from "above" is that media interact with social acceleration, a historical dynamic which needs to be understood as part of the "basic conditions of mediation." Accepting this, the question of *how* specific media designs relate to or *modulate* social acceleration moves to the center.

The new neuroscientific perspectives on human experience, particularly those addressing attention and memory, inform our understanding of the problem of speed from "below," suggesting that the dynamics of social acceleration, mediated by the CME, are not exclusively a cultural matter pertaining to individual and institutional practices and values, but also a real challenge to human perception and cognition. Setting aside intractable debates about fixed ideas of the "human" and designating hard limits of our capacity, we can still acknowledge the danger of *assuming* the "infinite adaptability of the brain to culture" (Dehaene 6), and accept that, historically speaking, the pressure of social acceleration on our cognitive processes is real and

[75] Rosa notes that the issue of time cuts across the classical theories of modernity (modernization processes): Durkheim's differentiation; Weber's rationalization; Simmel's individuation, and Marx's domestication. Likewise, time cuts across the existing macro-critical perspectives on the CME and the digital that I have encountered, perverting the evaluation of media and generating the polemics we find in the discourse. For Rosa's analysis of the classical theories see "From the Love of Movement to the Law Acceleration: Observations of Modernity," especially figure 1.1 (Rosa 34-62).

demands critical focus, and creative energy should be devoted to creative mitigation.[76] The primary lesson from "below," arrived at somewhat indirectly, is that media poetics matter, and the aesthetic experience of media objects - especially how attention is organized and memory is addressed in specific designs - is of fundamental significance against the backdrop of social acceleration and not reducible to cultural factors.

In light of the general problem of speed, the modification of the macro-critical perspective on the CME called for at the beginning of this section must be informed by the theory of social acceleration - a move that recovers experiential considerations of time and historical dynamics, and suggests human reflection as a central issue (and not just relative to the digital revolution). Although the CME may be a hostile environment for reflective thought in general given the current conditions of social acceleration, "micro-critical" perspectives focused on media experiences present a more complex view. Now we can turn our attention to the "basic conditions of mediation" within the CME in order to identify dynamics that present challenges for reflective thought (§4-5), and to develop an idea of "slowness" (§6) in order to articulate how specific media mitigate or counter these dynamics in the CME and exemplify a "poetics of reflection" (Ch.3-4).

[76] For a full argument about the popular overestimation of neuroplaticity and a refutation of the infinite adaptability of the brain see Stanislas Dehaene's *Reading the Brain* (2009). Dehaene characterizes what he terms the "Standard Social Science Model" as the general overestimation of neuroplasticity in the social sciences, functioning as a means of dismissing neurobiological factors and justifying cultural relativism.

§2.4 | Slowness and Aesthetic Experience of Media

There are two aspects of the CME that function as amplifiers of the general problem of speed and the current media-based challenges for reflective thought. The first is the dynamism that characterizes the dominant information aesthetics of hypermedia and digital games, complicating the formation of what John Dewey refers to as "identifiable experiences" (35), experiences that constitute the object of reflection in aesthetic experience. The second aspect is pervasive ergodicity, or what Brian Massumi has referred to as the "soft tyranny" of interaction (77). Discussed extensively in the previous chapter, ergodic experience not only privileges action-oriented thinking within the media experience (see Ch.1.2), but complicates, and in some cases actively disrupts, reflective activity. How we engage these two aspects as media *experiences* and understand their relation to reflective activity should shape our critical response to the CME and digital media specifically, and inform our views of their potential.

By shifting the discussion to the experiential, to a "micro-critical" perspective, we enable a more effective response to the CME and the problem of speed than can be found among the macro-critical perspectives, including the ascendant broad institutional approaches associated with the digital humanities. Appreciation of the problem of speed in the CME from this perspective, in which the aesthetic experience of mediation is foregrounded, enables us to articulate the corresponding problem of reflection on terms that can be answered not only pedagogically, through changes in culture and institutional practices, but also poetically, through the creation and criticism of media objects. Furthermore, understanding the problem of speed at the level of aesthetic experience has the virtue of being more directly relatable to media poetics,

which in turn allows us to perceive, appreciate, and develop design and communication strategies that interact with the dynamics of the CME in creative and not merely reactive ways.

The first and perhaps most widely discussed thematic aspect of media experiences in the CME is the increasing speed of information flows. Within the macro-critical frame this theme is addressed as a matter of circulation and production, of the speed at which information travels and the rate of its generation. Toffler's classic notion of "information overload" was a response to the widespread perception of these information dynamics, and contemporary concepts from cognitive psychology that have entered the popular discourse on modern life, such as "overchoice," "decision fatigue," and "ego depletion," are attempts to characterize and render discussable aspects of our information experience in the CME. However, an even more basic and potent amplifier of the problem of speed consists in the lability and aesthetic complexity of many digital media objects. This experience of speed occurs at the level of mediation, and requires a phenomenological orientation to be fully appreciated.

As Friedrich Kittler argued in his famous essay "Gramophone, Film, Typewriter," the temporality of information at the level of mediation is an important structuring element of our cognition and our aesthetic experience of the world.[77] Time, Kittler claims, "is what determines the limits of all art. The quotidian data flow must be arrested before it can become image or sign" (34). The experience of "data flow" and the dynamism that characterizes ascendant digital media forms in the CME, such as videogames, virtual worlds, interactive streaming video, and VR environments (Fig.10) present a serious challenge to reflective activity given the complications

[77] Indeed, Kittler goes so far as to claim that "Media 'define what constitutes reality'; they are always already ahead of aesthetics" (34). This formulation places us in reactive posture, and the prospects for human understanding and reflection are, on the whole, hindered by media on this account (5). The important insight here, however, is that the experiential dimension of the media system, and of specific media forms, cannot be ignored via atemporal conceptualization in discourse. This insight informs Kittler's sense that Foucauldian discourse analysis is obsolete in the digital age and requires the update he undertakes in his work (10).

introduced into the process of forming an "aesthetic experience." For Dewey, aesthetic experience must be distinguished from the "general stream of experience," which is continuous and habitual (35). Aesthetic experience, in this formulation, is not something that happens *to* us, like a sudden event of affect, feeling of pleasure or wonder, but is the *fulfillment of a reflective process* and an experience of meaning organized by a media object (especially works of art and expressive media, though in principle extendable to any other identifiable unity we might take up in our "general stream of experience" and attend to as an "object" of reflective reasoning).

Figure 10 - Molleindustria's *A Short History of the Gaze*

Two screenshots from Paolo Pedercini's "experiential essay" about the violence of the gaze and the implications of a thoroughly machine-mediated activity of looking acclimated to VR. In this experience the flows of audio and visual information dynamically change depending on simple acts of looking.

In these examples the flow of information is multimodal and rapid (high frequency of change), with new sense data and information for interpretation presented continuously, and the demands on attention and perception increase as the information flows are paced by machine time. Consequently, the formation of an "aesthetic experience" of the media object takes place under a kind of duress of the temporality of very rich, varied, and often fast data flows. In extreme cases, such as realtime, action-oriented videogames or VR experiences and large-scale

interactive video streams, the immediate experience of information enforces a cognitive style that is antithetical to the reflective activity required in the formation of aesthetic experience. However, it is important to note that this problem is general: the conflict (and expressive differential) between the "general stream of experience" constituting our habitual perception in everyday life and the reflective formation of aesthetic experiences mediated by artworks or other objects taken up in effortful reflection is a constant. The point here is that the general problem of speed in the CME is amplified by the information aesthetics shaped by these dominant media forms, and the synthesis of experience in reflection is taking place under new and challenging conditions.[78]

Dewey argues that the meaning and insight we seek and often gain in an aesthetic experience (of media objects or life in general) integrally depends upon a productive balance between sensitive receptivity and effortful reflective reasoning in our appreciation of our experience. He imagines this balance can be threatened by conditions or practices which push us into either extreme, though it is the idea of an "excess of receptivity" that is relevant to our concerns here:

> Experiences are also cut short from maturing by excess of receptivity. What is prized is then the mere undergoing of this and that, irrespective of perception of any meaning. The crowding together of as many impressions as possible is thought to be "life," even though no one of them is more than a flitting and a sipping. The sentimentalist and the day-dreamer may have more fancies and impressions pass through their consciousness than has the man who is animated by lust for action. But his experience is equally distorted,

[78] Measuring this challenge is difficult, but the science of attention, especially recent work in neurobiology, cognitive psychology, and behavioral economics, provides important resources for appreciating just how acute the challenge given emerging accounts of our distinctly human limitations and capacities. See specifically Buonomano (2011), Levitin (2014), and Kahneman (2011).

> because nothing takes root in mind when there is no balance between doing and receiving. Some decisive action is needed in order to establish contact with the realities of the world and in order that impressions may be so related to facts that their value is tested and organized." (Dewey 45)

Perceiving meaning is the hallmark of a "mature" experience, transmuted by the "decisive action" or "doing" of reflective activity which relates and organizes the experience in thought, facilitating understanding, insight, new connections, and leading to new action. Although Dewey is not explicitly imagining that media objects or the dynamics of the media ecology as context for experience might induce an "excess of receptivity," his theory is felicitous to such considerations.

For example, this aspect of Dewey's theory of experience finds new articulations in contemporary scientific accounts of our "neuroattentional resources," which are finite and evolved to process different kinds and amounts of information than organized by the CME (Levitin xviii; Gallagher 9).[79] Similar to arguments referenced above about the overestimation of neuroplasticity underwriting many cyberoptimist arguments about our ability to adapt to the CME (§3, note 47), Daniel Levitin suggests there may be a kind of "speed limit" for human information processing:

> Our brains do have the ability to process the information we take in, but at a cost: We can have trouble separating the trivial from the important, and all this information processing

[79] Levitin argues that although our particular neuroattentional resources are not optimized for the environment of information we have created, "human knowledge" can overcome the historical condition of systemic cognitive overload by informing how we organize our information and thinking: "Our genes haven't fully caught up with the demands of modern civilization, but fortunately human knowledge has - we now better understand how to overcome evolutionary limitations" (xiv). The solution appears to lie in the reorganization of "external memory systems" (i.e. media), shifting from forms that follow the human brain's own organizational system (which is evolutionarily inapposite the information environment of the CME) to "reinventing" that system (remediating it) with design strategies and practices informed by the unfolding science of our attention and memory.

> makes us tired. Neurons are living cells with a metabolism; they need oxygen and glucose to survive and when they've been working hard, we experience fatigue. Every status update you read on Facebook, every tweet or text message you get from a friend, is competing for resources in your brain with important things like whether to put your savings in stocks or bonds, where you left your passport, or how best to reconcile with a close friend you just had an argument with. The processing capacity of the conscious mind has been estimated at 120 bits per second. That bandwidth, or window, is the speed limit for the traffic of information we can pay conscious attention to at any one time. While a great deal occurs below the threshold of our awareness, and this has an impact on how we feel and what our life is going to be like, in order for something to become encoded as part of your experience, you need to have paid conscious attention to it. (6-7)

Regardless of whether we accept the details from the recent science about this limitation, we find in this formulation of the general problem of speed the same key elements and basic insight found in Dewey's philosophical aesthetics: temporal perception of information, human capacity, and the formation of an identifiable experience. Furthermore, these scientific accounts bring together evolutionary time and the temporality of media experiences in the same critical frame, providing a new and underexplored reference for appraising the CME and the design of digital media objects.

The rhetoric of speed and time-based metaphors pervade both of these discourses, though the impetus differs in an instructive way. Focused on "how we think" and aesthetic reflection, Dewey imagines the problem as more or less methodological: we must recalibrate our thinking in relation to experience and artworks, acknowledging a process-oriented mode of "reflective thought" which requires a particular "rhythm" that is, among other differences, slower than the

temporality of "direct and unreasoned impressions" that dominate the "general stream of experience." Thus part of the methodological solution is to regulate the time of thought: "If we move too rapidly, we get away from the base of supplies of accrued meanings and the experience is flustered, thin, and confused. If we dawdle too long after having extracted a net value, experience perishes of inanition" (Dewey 56). Slowness, relative to habitual thinking and perceiving in the general stream of experience, is foregrounded as a technique of effective thought and a condition of possibility for forming an "aesthetic experience."

Focused on the nature of human attention and memory, Levitin (2014), Gallagher (2009), and especially Kahneman (1973, 2011) are led to considerations of speed and temporality through an acknowledgement of our human limitation relative to the information we must process in that *general stream of experience* Dewey posits as the contrasting background for *aesthetic experience*. The analog to "reflective thought" in this discourse is expressed in various concepts of "effortful attention,"[80] and the concern for speed is imagined as an internal problem of the temporal dynamics of attention and memory (both integral to the formation of "experience") as they interact with an information environment increasingly hostile to that particular "attentional style" (Gallagher 58).[81] Thus the imagined solutions include yet go beyond corrective techniques of perception and reflection. As Gallagher notes, it is "not only *how* you focus, but also *what* you focus on [that] can have important neurophysiological and behavioral consequences" (72). Levitin argues that countering what I have identified here as the problem of speed at the level of the basic conditions of mediation requires an intervention in the organization of the CME (and, I argue, individual media objects); nothing less than the

[80] See, e.g., Kahneman (1973, 2011) and Levitin (2014).

[81] Gallagher's "attentional styles" is synonymous with the more popular term "cognitive style" used by Hayles and other humanists leveraging science discourse on attention, memory, and cognition.

"reinvention" of the brain's own organizational system *through media* (xv).[82] Thus the idea of slowness that emerges from this perspective entails a strategic intervention at the level of media poetics. I hasten to add here that this is not a replacement for Dewey's solution; in fact, there is always a danger of using this media-based solution to our problems as an alibi for the training of reflective modes of thought. On the contrary, Dewey's formulation of the problem of aesthetic experience is a necessary stage (or aspect) and philosophical resource for developing a poetics of reflection in the CME.

Returning to the main argument, the second thematic aspect of media experiences in the CME that functions as an amplifier of the general problem of speed is the pervasive ergodicity of digital media, and what we might call an "ergodic layer" spreading over bodies of information and the environment in the CME.[83] In the previous chapter we discussed the *concept* of ergodics and its limiting effect on the appreciation and understanding of computer game experiences, arguing for a "phaneroscopical" perspective that acknowledges the significance of "noematic work" in our attempts to understand gameplay as an experience. Here we shift the focus to the *immediate experience* of ergodic designs, to the bare fact of "extranoematic" work and the logic of ergodicity imposed on the user by the media object in the context of the CME. While it is obvious that ergodic experience is foregrounded in digital games and expressive hypermedia generally, the trends of gamification, augmented and mixed reality design, and the "internet of

[82] Levitin uses the terms "external memory mechanisms/systems," but here CME stands in for the "systems" scale and "media" and "media object" stand in for the individual "mechanisms."

[83] Noted gamification scholars Steffen P. Walz and Sebastian Deterding identify twin processes of the contemporary moment related to play that extend and focus this insight about the media ecology: 1. a general "ludification of culture," which sees the application of game designs to cultural processes, and 2. an emerging appreciation for and "cultivation of ludus" - a nurturing of the spirit of play in all aspects of life (Walz & Deterding 2015, 1-9). The dynamics of the CME are particularly informed by the former process, as new bodies of information form they become new handles and targets for ludification.

things" exemplify its pervasiveness in the CME and suggest it may be a kind of metalaw of contemporary technogenesis.

Pervasive ergodicity contributes to the general problem of speed by placing our experience of information into action-oriented contexts, foregrounding the modes of thought associated with performing ergodic work (selecting, configuring, inputing, exploring, etc.) which presents new challenges for establishing the "rhythm" of reflective thought. Perception is put into a more direct and immediate relation to action - to the performance of ergodic work, a dynamic that is fertile soil for what Dewey describes as our general "zeal for doing" which, in the context of the CME, inhibits the formation of aesthetic experience and ends up framing reflective thought as waste as effective, goal-oriented action becomes the dominant ethic:

> Zeal for doing, lust for action, leaves many a person, especially in this hurried and impatient human environment in which we live, with experience of an almost incredible paucity, all on the surface. No one experience has a chance to complete itself because something else is entered upon so speedily. What is called experience becomes so dispersed and miscellaneous as hardly to deserve the name. Resistance is treated as an obstruction to be beaten down, not as an invitation to reflection. An individual comes to seek, unconsciously even more than by deliberate choice, situations in which he can do the most things in the shortest time. (Dewey 44-5)

Regardless of whether we accept Dewey's claim that we have a natural zeal for doing, a kind of default impatience to act, we can appreciate the logic of his concern, which is that the formation of experience, integrally connected to the temporality (or "rhythm") of reflective activity, is challenged by the temporality of decision making and material interaction - ergodic work. Of course, this will depend on the poetics of the particular media experience, and we might imagine

a kind of continuum of ergodic complexity and pacing, with extreme examples imposing continuous ergodic activity under various forms of duress and tending to synchronize with immediate perception.

Brian Massumi expresses a similar concern from the opposite direction, arguing that "there can be a kind of tyranny to interaction" (77), a "soft tyranny" that short-circuits or complicates the formation of experience. Although Massumi is not concerned directly with the development of reflective thought and its prospects in the CME, his commentary on interactive art and the historical trend to maximize ergodicity suggests an uneasiness about prospects of fully appreciating media experiences under such conditions:

> It is not enough to champion interactivity. You have to have ways of evaluating what modes of experience it produces, what forms of life those modes of experience might develop into, and what regimes of power might arise from those developments. [...] Simply maximizing interaction, even maximizing self-expression, is not necessarily the way. (78)

Thus pervasive ergodicity in the CME presents a double challenge: on the one hand, ergodic designs naturally indulge our "zeal for doing," and on the other, the imposition of ergodic work in the media experience defers reflective thought, or may even preclude it insofar as the ergodic experience is habitual or the designs are conventional. As ergodicity has increased in the CME and its forms standardize, catalyzed by the success of the "Web 2.0" design ideology and reflected in the dazzling growth of the videogame industry, interactive experiences become habitual and designs homogenized. This historical domestication process of digital media has enabled the conception and acquisition of relatively durable forms of "digital literacy" (in the narrow sense) as well as "best practices" in digital media design, but there has also been a

corresponding inflation of the demands on our critical imagination and our willpower to reflect on our media experiences in the CME.

§2.5 | Deceleration Strategies and the Problem of Reflection

We are now in a position to see and identify a new experiential, *aesthetic dimension* to the general problem of speed in the CME that both the sociological-historical (Rosa, Scheuerman) and neuroscientific (Kahneman, Buonomano) perspectives include but do not (and cannot) fully address. This dimension is shaped by the experiences organized by the dominant media designs in the CME which act as amplifiers of the historical process of social acceleration and its cultural effects. It is via this aesthetic relation to social acceleration that the CME, taken as a system, can be viewed as a disabling condition of reflection. Thus the pessimistic views found in the macro-critical discourse on the CME are correct, in a limited sense. However, the recurring error is in attributing the problem to the digital generally, or categorically mapping cognitive styles to media forms abstracted from their content and context.[84]

Although Rosa and Scheuerman's theory of social acceleration opens up a new perspective on the CME, one that places time and the media experience at the center, the solution space imagined in their analyses is limited to the cultural scale and register. This may be because their primary concern is not reflective activity or its formation into an aesthetic experience of the quality that Dewey describes, but rather the health and stable functioning of modern social

[84] This idea is expressed by Wark, Galloway, and Thacker in their critique of media studies, in which they argue against the dominant understanding of media as "determinative devices," noted in §2 above. The "determining" factor is the relation of the dominant poetics of the contemporary media ecology and the historical dynamics of social acceleration.

processes, especially democratic culture and institutions and the formation of social identity. In Rosa's view, the forms of "deceleration" we may pursue are matters of "purposeful political intervention" that target the de-synchronization of the "time of life" and the "time of the world" (2013 155).[85] However, the aesthetic dimension of the problem of speed calls for a supplement to the strategic deceleration of specific social and economic processes - an *idea of slowness* that addresses the cultivation of reflection in the CME generally, and in digital media objects specifically.

The necessity for this media-based, supplemental idea of slowness has not been acknowledged because the activity of reflection has not been taken very seriously in the critical discourse. Just as the conceptualization of the CME and digital media in the macro-critical discourse made the problem of reflection either easy to dismiss or difficult to productively discuss, the abstraction from the aesthetic dimension of the problem of speed in the current strategies of deceleration facilitates the illusion that structural changes in culture and changes in individual media habits and practices alone will suffice. This illusion is maintained by a double abstraction. On the one hand, there is an abstraction from what William Connolly refers to as the complex "geology of thinking," a layered view of human thought that acknowledges its "affective dimension." Channeling the discourse on affect, Connolly notes that:

> [A]ffective intensities of proto-judgment sometimes surge up from the lower strata, flooding slower and more refined layers of conceptual thought and conscious imagination, overwhelming them for a time or propelling them down new paths of exploration; how these movements sometimes throw thought into a tailspin or open up

[85] The cultural interventions that Rosa is imagining here are distinct from the various "slow" cultural movements (e.g. slow food, slow media, slow travel) seeking to inspire new behaviors and everyday ethics of living. For a survey see Carl Honoré's bestseller *In Praise of Slow: How a Worldwide Movement Is Challenging the Cult of Speed* (2004).

> possibilities of invention for an individual, group, or constituency; and how those lines of flight, in turn, pose questions about what tactics to deploy to educate thought-imbued habits below direct reflective regulation. (112)

This affective layer of our experience is one aspect of the "basic conditions of mediation" that is left unacknowledged which would point to media objects and the CME generally as key sites of intervention and experimentation. On the other hand, as noted at various points throughout this chapter, there is again an abstraction from the poetics of particular media experiences, their designs, expressive goals, narrativity, etc., such that the idea of slowness expressed by the aesthetic experiences of media objects is subsumed (and thereby hidden) in notions of media practices and dynamics of media culture that either facilitate a "deceleration ideology" (e.g. slowing procedures, technical mitigations of speed) or create strategic "islands of deceleration" (e.g. structural designs in media platforms, community regulation of communication frequencies). The temporality and form that thinking takes, including its channeling into forms of reflection and effortful attention, are connected to these two abstracted aspects of our experience of media and the CME in the critical discourse, and any idea of slowness organizing our response to the problem of speed ought to be informed by them.

Although Rosa and Scheuerman see the "digital revolution" as the primary driver of the "recent and yet ongoing wave of acceleration," the proposed goal of "resynchronization" is grounded in an idea of the "good life":

> Resynchronization [is] only possible at the cost of a (temporal-) cultural or (temporal-) structural "revolution." In this respect, I also understand the following reflections as a contribution to an as-yet-unwritten sociology of the good life. Unlike a philosophy of the good life, which would have to develop abstract ethical criteria for the conduct of life,

> this form of critical sociology wields the socially predominant ideas of a successful life, whether explicitly formulated or implicitly held, against the structural conditions under which those conceptions are pursued. (Rosa 32)

The novelty of this critical response to the problem of speed is its dynamism, its sensitivity to history and the temporal aspect of human experience of technogenesis as an ongoing process. The "cultural revolution" called for would consist of strategic interventions in the economic, sociocultural, and technical "motors" of social acceleration (Fig.11), guided by historical ideas of "successful life" (Rosa 194). Thus for Rosa, in the final analysis, deceleration ideologies and strategies alone are not the answer but rather elements of a macro-cultural strategy. But it is important to note that it is the internal "technical motor" (including, especially, the CME as the systemic result and representative of the "digital revolution") that ultimately prompts Rosa to abandon ideas of slowness and deceleration strategies as the *grounds* of the solution to the problem of speed, primarily because they are always pursued and never seem to succeed:

> Three systematic conclusions can be drawn from the history of cultural war over technologies of acceleration: first, the technological acceleration process does not run in a uniformly linear fashion, but comes in surges, continually encountering obstacles, resistances, and counter-movements that can slow it down, interrupt it, or even temporarily reverse it. Second, almost every surge of acceleration is followed by a discourse of acceleration and deceleration in which, as a rule, the call for deceleration and the nostalgic desire for the lost "slow world," whose slowness first becomes a distinct quality in retrospect, outweighs the excitement about gains in speed." [...] Third, even in the face of the discursive hegemony enjoyed by decelerators in high culture, every single

> one of these 'culture wars' has so far ended with the victory of the accelerators, i.e., with the introduction and entrenchment of the new technology. (Rosa 41)

Despite acknowledging here that discourse-based attempts to steer or reshape the technical dimension of social acceleration seem ineffective, the project of "resynchronization" - the needful temporal cultural revolution - is driven by yet another discourse. The replacement of ideas of slowness with ideas of the good life shifts the context from human desire ("nostalgia") to human need ("successful life"), but dynamics of the practical problem are left intact. Furthermore, if we are to take the recent insights from neurobiology, cognitive psychology, and behavioral economics seriously it seems clear that ideas of the "good life" lead in various ways back to slowness as a more fundamental idea for reform.

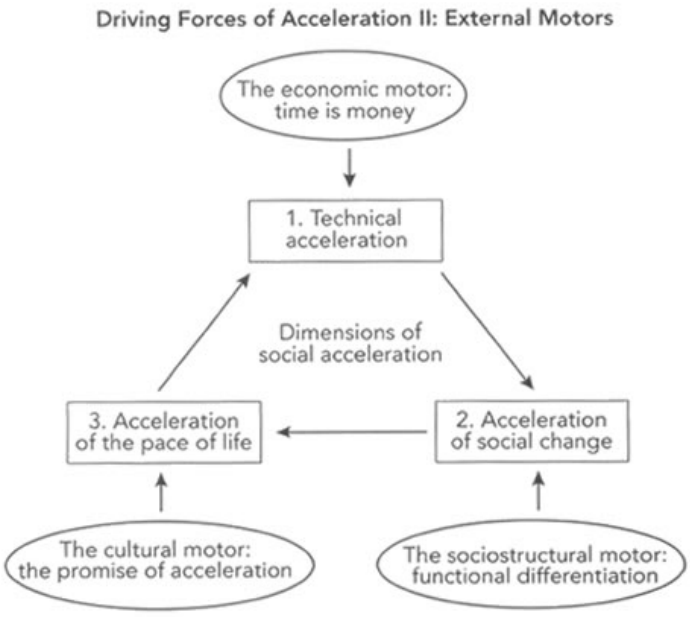

Figure 11 - Hartmut Rosa's External Drivers of Acceleration

A reproduction of figure 7.1 schematizing the relationships of the external drivers of social acceleration (Rosa 194).

Another important point to note is that the concept of "culture war" used by Rosa suggests that he imagines the conflict entirely in the domain of discourse and ideas *about* the new technologies *as given*. Yet there is another theater of this "war" pertaining to the mainstream design practices of technical systems, digital media objects, as well as the art practices of creating expressive digital media. These domains directly interact with the aesthetic dimension of the problem of speed outlined above and operate at a more fundamental layer "below" the "culture war," thoroughly mediating it via the organization of attention, flows of information, significant experience, and especially of meaning in the case of expressive media. Overlooking these domains as sites of intervention is common to what we might call the *adaptive approaches*, such as Rosa's "resynchronization" project, foregrounding the adaptation of culture, practices, and institutions to the processes of contemporary technogenesis.

These adaptive approaches to the problem of speed end up abandoning ideas of slowness altogether. For example, William Connolly acknowledges that the contemporary world is "composed of asymmetries of pace," but is ambivalent about the effects, noting that while speed "supports corporate colonization of new spaces inside and outside highly organized capitalist states" (142), the differential across cultural domains generates pluralism (143), and more crucially, undermines dogma (178).[86] Much like Rosa, Connolly was inspired by Virilio and his project of dromology, but whereas Rosa found it too speculative Connolly finds it too pessimistic and fixated on a narrow range of experiences and interpretations of speed:

[86] This assumes that the dynamics of dogma formation and reproduction are tied to the experience of the "asymmetries of pace" in everyday life, but high frequency differences and apparent pluralism may belie lower frequency patterns and regularity wholly resilient to effects of speed Connolly imagines here.

> Virilio allows the military paradigm to overwhelm all other modalities and experiences of speed. Virilio remains transfixed by a model of politics insufficiently attuned to the *positive* role of speed in intrastate democracy and cross-state cosmopolitanism. He underplays the positive role speed can play in ventilating dogmatic identities in the domains of religion, sensuality, ethnicity, gender, and nationality. (178)

Attuning to the positive effects of social acceleration *at the level of culture* leads Connolly to assert that the primary question is not "how to slow the world down, but how to work with and against a world moving faster than heretofore to promote a positive ethos of pluralism" (143). Here the project of promoting an "ethos of pluralism" replaces the project of resynchronization, and ideas of slowness are abandoned in the face of ambivalence about the effects of social acceleration. In fact, slowness loses its significance as a critical focus for Connolly not only because he reinterprets the social dynamics of speed, but also because his consideration of the aesthetic dimension of thought is focused on the non-cognitive "layer" of affect.[87] While Rosa's concerns about the "temporal requirements of specific social spheres of life" are allayed by his analysis of the positive effects of speed, particularly in relation to politics, Connolly does not seem to entertain that there might be "speed limits" of particular modes of thought, especially in the cognitive and psychological "spheres" of life. Even his compelling call for "reeducating" affect by "running existential experiments" on ourselves abstracts the role of reflective experience, implying a reductive view of media and the significance of poetics. So, although Connolly acknowledges the aesthetic dimension of social acceleration and thus positions us to

[87] Writing in the midst of the "affective turn" in the humanities in the early 00's, Connolly understandably emphasizes the affective dimension given the dominance of cognitivist approaches that focused on language, discourse, conceptualization, etc. at the expense of non-cognitive aspects of human experience. However, it seems important to note that the experience of reflective reasoning is abstracted from concepts and the formation of aesthetic experience here.

see the importance of media and the dynamics of the CME, the "problem of speed" is reframed as an opportunity for creative cultural adaptation.

This logic of adaptation also informs the project of the digital humanities, considered as a direct response to the digital revolution, and an indirect response to the problem of speed in the CME. However, as we saw in §2 above, the digital humanities approach to the CME is not informed by a critical appreciation of social acceleration as a significant context for strategizing about humanities education or understanding digital media experiences. Consequently, where concerns for reflection and ideas of slowness might prompt more robust strategies of intervention in the CME through critical design, the project is instead developing as one of creative pedagogical adaptation prompted by concerns for renewing the efficacy of the humanities in the context of the CME. This adaptation, currently underway, is certainly needful, but it must be made to grapple more directly with the structural challenges to reflective thought presented by the CME and the dominant practices, aesthetics, and poetics of digital media.

Prior to *How We Think*, Katherine Hayles acknowledged these challenges in a short essay entitled "Hyper and Deep Attention: The Generational Divide in Cognitive Modes," published in *Profession* in 2007. In a prescient commentary on historical changes in thinking and reading practices taking place as an adaptive response to the conditions of the CME,[88] Hayles provides a critical framework focused on human attention and "cognitive modes."[89] Hayles identifies an historical trend toward "hyper attention," a cognitive mode that is "characterized by switching focus rapidly among different tasks, preferring multiple information streams, seeking a high level of stimulation, and having a low tolerance for boredom" (187). This is the ascendant mode and

[88] Hayles uses the terms "networked and programmable media" and the contemporary "mediascape" in her essay rather than contemporary media ecology (CME).

[89] In the essay Hayles appears to use the terms cognitive mode and cognitive style interchangeably.

the one most often associated with digital media experiences in popular discourse. As the dominant "cognitive style," engaging in hyper attention can also be understood in the context of technogenesis as the human side of a dynamic coevolutionary process between humans and technology (2007 194).[90] Hayles contrasts this cognitive mode with "deep attention," which is often associated with the humanities and is "characterized by concentrating on a single object for long periods (say, a novel by Dickens), ignoring outside stimuli while so engaged, preferring a single information stream, and having high tolerance for long focus times" (187). While both modes are integral to human experience and learning, Hayles notes that deep attention is a "luxury" in an evolutionary context, and that changes in the human environment were required before it could develop and become part of everyday experience. This is a crucial observation because it not only acknowledges that hyper attention was the primary and dominant cognitive mode, but that the conditions for deep attention had to be created and developed. Furthermore, in light of the frenetic dynamism of contemporary technogenesis and the historical process of social acceleration, the conditions for deep attention must constantly be *re-made*. The perennial challenge is not only securing time for reflection in the routines of contemporary life, but in creating media and environments by which reflective thought is catalyzed and for which the temporality of reflection is integral.

To meet this challenge is not simply a process of adaptation but one of active, strategic experimentation with media, informed by a critical appreciation of the "basic conditions of mediation" afforded by the CME. Hayles's concern for sustaining and finding new ways to

[90] Hayles describes technogenesis as a process of adaptation between organisms and environments in *How We Think* (2012): "Contemporary technogenesis, like evolution in general, is not about progress. That is, it offers no guarantees that the dynamic transformations taking place between humans and technics are moving in a positive direction. Rather, contemporary technogenesis is about adaptation, the fit between organisms and their environments, recognizing that both sides of the engagement (humans and technologies) are undergoing coordinated transformations" (81).

develop deep attention given the dynamics of the CME is aligned with my interest in identifying and developing a poetics of reflection as a response to the problem of speed in the CME. In contrast to digital humanities, which is animated by desires to create new synergies between digital technologies and humanities work, to "expand the purview" of humanities education as well as the types of skills it develops (Schnapp vii), here Hayles is animated by a much more narrow desire to create new conditions for developing and practicing particular modes of thought, informed by a critical awareness of the dynamics of the CME and its tendency to call for and reward hyper attention. Where digital humanities might be understood as a kind of modernization project adapting the humanities to the given conditions of the CME, Hayles proposes an adaptation of the pedagogy and practices of the humanities to counter or reconfigure those same conditions.

These approaches are not in opposition, and we can imagine Hayles's view informing further pedagogical innovation in digital humanities. However, Hayles was an early responder on the scene, and her commentary in "Hyper and Deep Attention" appears in hindsight to be an unheeded moment of triage that ought to have informed the development of digital humanities initiatives responding to the cultural changes and leveraging technologies generated by the digital revolution. Hayles's attention to what I have termed the aesthetic dimension of the problem of speed in the CME is what makes her response critical in addition to practical. It also lays the groundwork for developing a micro-critical perspective and discourse on the CME, one that attends to the poetics of media objects, the modes of thought they invoke or educe, and the experiences they afford through strategic and critical design.

Unlike the other approaches surveyed above, Hayles's strategy is informed by a media-based acknowledgement of social acceleration and the problem of speed in the CME,

manifesting as a growing challenge to deep attention. Therefore, in addition to proposing adaptive pedagogical and institutional reforms, Hayles argues, perhaps counterintuitively,[91] that digital media are potential resources for enhancing the cognitive mode of deep attention and, more importantly for her, "building bridges between deep and hyper attention" (195). According to Hayles, this is achieved through comparative media study, forging creative connections across media experiences that emphasize contrasting cognitive modes. Digital media and the dynamics of the CME may privilege and develop hyper attention, but Hayles imagines that strategic use and recontextualization can lead to a "constructive synthesis" and rebalancing of cognitive styles. Of course, these activities will require that methods be developed with a close attention to how particular media experiences work and unfold, organize attention, and facilitate thinking through their designs. Furthermore, although the thrust of Hayles's thinking consists in how we might use digital media as an element in the larger educational project of creating new pedagogies informed by these critical insights into cognitive modes, her final comments on some example experiments in this direction open the door to the media-based idea of slowness that I identified above as a necessary supplement to the culture-scale strategies of deceleration or adaptation issuing from Rosa's critical theory of social acceleration:

> As these examples show, critical interpretation is not above or outside the generational shift of cognitive modes but necessarily located within it, increasingly drawn into the matrix by engaging with *works that instantiate the cognitive shift in their aesthetic strategies*. Whether inclined toward deep or hyper attention, toward one side or another of the generational divide separating print from digital culture, we cannot afford to ignore

[91] Counterintuitive, that is, to cyber-pessimists engaged in the macro-critical discourse about digital media and the CME and traditionalists in the popular discourse who codify digital media and culture as anti-reflection in the abstract.

> the frustrating, zesty, and intriguing *ways in which the two cognitive modes interact*. (197 my emphasis)

The move here to considering the "aesthetic strategies" of works is crucial for two reasons. First, it identifies the relation between the aesthetic strategies of a media object and cognitive modes as a point of interest. Second, it foregrounds the "work" itself, the media object, as a means by which we can understand and explore the "ways in which the two cognitive modes interact." Together these position us to see how poetics of media objects might be the basis of a new idea of slowness. However, because Hayles tends to treat media objects conceptually as instantiations of one mode, it does not occur to her here that this can also be an effect of experiencing digital media objects designed for reflection. Instead she is lead to the thought that it is primarily the effect of comparative media pedagogy and analysis that achieves the enhancement of deep attention or the synthesis of cognitive styles. That is, Hayles focuses on how the "two cognitive modes interact" *across* media objects and in particular pedagogical situations, but does not explore how they interact within media experiences. It will require an experiential turn within this kind of micro-critical framework to proceed further, since abstracting the temporal experience of media objects hides the ways in which digital media that are read conceptually as privileging hyper attention can actually facilitate deep attention and reflective thought through their particular "aesthetic strategies."

This return to early insights by Hayles completes a process of "descending" into a micro-critical perspective of the problem of speed in the CME. Rosa's theory of social acceleration provided a new critical ground for evaluating the CME, leading to the formulation of a general problem of speed. Analysis of the dynamics of the CME in the context of social acceleration foregrounded the problem of reflection and revealed an aesthetic dimension to social acceleration

that both the macro-critical discourse on the CME (§2) as well as the theorists of social acceleration fail to address (§3). This results in a blindspot in the available responses to both the historical process of social acceleration in general, and the problem of speed in the CME specifically. The effects of the blindspot are exemplified in the general limitation of critical intervention to the domain of culture (structural changes in institutions, cultural practices, policies, protocols, etc.), guided by various ideas of practical adaptation to the given dynamics of the CME. The domains of technology and media are significant as given conditions and resources, but their design and poetics are not a strategic factor.[92]

Furthermore, the blindspot for the aesthetic dimension functions as a means of dismissing or avoiding direct confrontation with the problem of speed (and reflection) in the same way the failure to consider consequential limits to neuroplascitity facilitated unbridled optimism about the CME and digital media: like the human brain, culture is thought of as *infinitely* adaptable. Thus we can always change culture or create new political ideas, practices, and ways of thinking and seeing to overcome any unwanted effects of the historical process of technogenesis. However, as I have tried to show, acknowledgment of the time-experiential dimension crushes this idealism. Rosa's concept of "desynchronization" addresses this at the macrosocial level: the widening speed differential between cultural adaptation and technological change creates dysfunction in the social system.[93] Rosa's own solution is to develop a "critical theory of social acceleration" to arrive at ideas that might orient the process of cultural intervention in a critical way. This much is surely necessary insofar as the dominant ideas orienting cultural processes are

[92] Digital humanities, interpreted as a response to the CME, acknowledges that design moves to the center of research and production in its approach, but the emphasis seems to be on practical design literacy and making, not on criticism and philosophy of design.

[93] See Rosa and Scheuerman, "Social Acceleration: Ethical and Political Consequences of a Desynchronized High-Speed Society" (2009); Rosa (2005 211-298).

not informed by a critical understanding of the dynamics of social acceleration in any meaningful way. However, as argued above, while Rosa obviously confronts the problem of speed directly, the blindspot for its aesthetic dimension gives him the impression that developing such a critical theory would be a sufficient deceleration strategy. To counter this problem will require adventuring into material domains that shape the aesthetic experiences of social acceleration in search of new ideas of slowness that might supplement cultural interventions.

The Center for Humane Technology (C4HT)[94] provides an example solution focused on the *technological* domain that might supplement Rosa's cultural interventions informed by a critical theory of social acceleration. Tristan Harris, a former design ethicist at Google, along with other technologists and industry professionals formed C4HT to raise awareness of the problems of the contemporary attention economy and the digital designs and systems that are being developed to monetize and exploit it. Although it is narrowly focused on the CME and addresses the problem of speed indirectly, as a subset of problems in the attention economy, C4HT is a response to a set of problems integral to the experience of social acceleration. The current activities of the organization are limited to interventions in the cultural domain (critical use practices, identification of problematic design, etc.), but the stated long term goals are to intervene in design culture and to compel the creation of digital systems and software that do not exploit human psychology and neurobiology.

Where Rosa imagines a strategy oriented by historically relative ideas about the "good life" and the functional health of social systems, C4HT supplements these with research-based ideas of human well-being and increased agency within everyday experiences of the CME and

[94] See <http://humanetech.com/>. This represents a technological strategy of deceleration that seeks to use understanding of human capacity and wellbeing to inform the design of digital systems. This would theoretically introduce a counterforce to the market-focused strategies that leverage the same understanding of capacity but for exploitative purposes.

digital media. This speculative project to "humanize tech" is fraught with philosophical problems (e.g. so much depends on how "humane" is interpreted), yet the details are less important than what it represents and its novelty as a strategy. C4HT stands out against the general cultural incapacity to imagine any meaningful critical intervention in the domain of technology, the primary dimension of social acceleration according to Rosa, which is directly driven by the primary motor: the economy (Fig.1 above). In their introduction to *High-Speed Society* Rosa and Scheuerman question whether pathologies of social acceleration can be overcome without attacking the central forces, including contemporary capitalism (18). Perhaps it is the strength of this link between the economic and technological systems, a link C4HT foregrounds in its diagnosis of the problem with the dynamics of the CME, that renders this strategy unthinkable, undesirable or futile. Regardless of its viability, developing more "humane" technological systems represents a strategy of responding to the CME that is actually informed by a critical appreciation of its aesthetic dimension - to the consequences of the dominant "aesthetic strategies" for human attention and well-being.[95]

Direct, experimental interventions in the domain of technology provide a necessary companion strategy, resolving the blindspot in Rosa's theory by addressing the aesthetic dimension of social acceleration at the level of culture; yet the fundamental problem of reflection remains, both in the specialized form identified by Hayles in the context of education, as well as the general form constructed by Dewey in his philosophy of aesthetic experience. Critical interventions in the dominant dynamics of the CME (e.g. information aesthetics, algorithms, access and publishing speeds, etc. at cultural hubs of digital experience) can certainly create

[95] For a speculative strategy in this direction that directly addresses the problems of speed and reflection in the CME, see Miguel Sicart's discussion of "slow technologies" in *Beyond Choices* (2013). Sicart advocates for a design ideology in technology that provides time for reflection, slowing the "flow of the interaction" to "create moments of awareness" and reflection (72-3). This is discussed at length in the final chapter (Ch.4.4).

more felicitous conditions for the "enhancement" of effortful, deep attention, and the "development and training" of reflective thought, but we must look to expressive media objects - namely, artworks - for the most deliberate and potent catalysts. That is, while such technological mediations may afford the time for reflection or help secure its temporality, they do not educe and train reflective thought by design, nor affect and nurture its development. The problem of reflection requires that we seek a new idea of slowness in the poetics of artworks, moving beyond (or below) deceleration ideologies and the interventions in the technological domain they might demand.

§2.6 | The Idea of Slow Media

A crucial thematic insight from the preceding analysis (§2-4) is that adaptive strategies shaped solely by the macro-critical perspective ignore the significance of media poetics in the organization of our experience of the CME, and the vital role they play in catalyzing reflective thought in the context of social acceleration. Therefore, Rosa's call for a "critical theory of social acceleration" must be accompanied by the exploration of an idea of "slow media," a micro-critical strategy of deceleration honed to media poetics. Hayles points the way with her emphasis on the relation between the aesthetic strategies of media and attention, but in order to develop an idea of slow media further we must:

1. Adopt a media concept that avoids the empty formalism of the sociological/"systems-theoretic" media theories as well as the abstraction from expressive content that McLuhan's conception of mediums recommends. Here the work of Matthias Vogel in *Media of Reason* offers an invaluable analysis of media theories that identifies the

unacknowledged strength and versatility of Dewey's media concept which he had developed in direct relation to aesthetic experience, and "in the context of aesthetic reflection" (Vogel 96). Dewey's media concept, as developed by Vogel, enables ideas of slowness in media to be grounded in the particular poetics of reflection in media objects approached as artworks, rather than in a formal/conceptual affordance or modulation of time for reflection by media forms approached as technologies.[96]

2. Temporalize McLuhan's understanding of the media experience. The amazing flexibility of McLuhan's philosophy of media comes from his creative abstractions of media, enabling him to engage in generative analogical reasoning about media forms, perceive interesting relations, contrasts, and dynamics that were hidden by an historical focus on the content, and focus critical attention on cultural effects and historical impact. The benefits of this approach to media are evident in McLuhan's perennial significance as a resource for new thinking about media - including the present extension of his thinking here. The costs, however, are the elision of important differences between tool use and experiences with expressive media, and a related blindspot for the developmental quality of our experience with such media. Although McLuhan was admirably attentive to historical time dynamics in his work on media, he was largely silent on the significance of time in media experiences. Adding time back into McLuhan's analysis of the experience of mediation by media forms enables appreciation of how poetic elements - designs, aesthetic strategies, expressive goals, narrative techniques, etc. - can draw out

[96] This connects back to the discussion of the significant function of diegetic information in understanding gameplay as an experience. There the "actionism" of dominant conceptions of gameplay informed by the ergodic turn in game studies discourse abstracted away the complexity of "noematic work" implicit in gameplay experiences, especially interpretive and imaginative work related to the diegetic information. This gives an alibi for actual game criticism, sanctioning varieties of formalism that marginalize or render unintelligible important aspects of the art of computer games.

the "slowness" of reflective thought *in a process* of forming what Dewey identifies as an aesthetic experience over time.

In this final section I do not endeavor to develop a formal concept of slow media forms or a highly technical definition. The term "slow media" may be misleading in the sense that it is not best understood as a category of media forms, but as a name we might use to acknowledge the presence of various poetics of reflection in media objects. The meaning of "slow" is relative to the dynamics of the CME (and thus historical) in the context of discussions of social acceleration, though within the narrower context of a specific media experience it also indicates a productive resistance to "fast," habitual modes of thinking and perceiving and the purposeful eduction of reflective thought in the designs of a given media object.

Acknowledging this, I instead focus on developing the conditions of appreciating "slow media" as a critical *idea* for thinking about media in the context of the CME through the discussion of the topics I identify above. The primary goal in this chapter has been to show the need for such an idea, and to indicate its significance for the discourses of social acceleration and media studies. The following critical engagement with Dewey and McLuhan on the topic of media provides some philosophical context for appreciating the techniques and strategies that constitute a poetics of reflection in the videogames taken up as examples in the final chapter. Digital games are the emblematic media of our time, and taken as a medium and imagined from the actionist perspective identified in the previous chapter, they function culturally as an accelerant in the context of the general problem of speed.

However, a perspective oriented by a modified Deweyan-McLuhanian perspective on media will help render strategies of deceleration within the experience of digital games intelligible as effective mediations of "slowness." This will have many implications for both

mainstream design culture in digital games and the status of what Brian Schrank identifies as the "videogame avant-garde" (2014). digital games aside, it is my hope that this initial formulation of an idea of slow media will provide some resources for media criticism and serve as a platform for extrapolation and refinement with other art forms. Notions of "slowness" in media are already developing in cinema studies (Jaffe 2014; Remes 2015; Luca & Jorge 2016), and as interest in the aesthetic (affective-cognitive) dimension of social acceleration grows I would expect further developments in other fields.[97]

The unifying theme in these emerging critical engagements with slowness is a focus on aesthetic experiences, variously theorized, organized through artworks. This is the general soil from which Dewey grows his media concept, and Vogel argues this is a crucial difference that sets his formulation apart. Vogel observes that sociological media theories, "connected closely with the rise of the conceptuality of systems theory" (80),[98] have a "distant connection to prominent everyday understanding of media as technical means of communication" (93). Media are defined functionally in relation to some larger system (of communication, information), and the aesthetic dimension and local use-experience is abstracted away.[99]

This is the very dimension that McLuhan takes up in his work, building (at least initially) from considerations of everyday mediums and focusing on the formal dynamics and their effects

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[97] Lutz Kopenick's *On Slowness: Toward an Aesthetic of the Contemporary* (2014), which develops a medium-independent aesthetics of slowness, will be addressed in the final chapter on digital games (Ch.4). However, while Koepnick considers a variety of arts, including photography, film, video installation, and literature, digital games are conspicuously absent.

[98] Vogel surveys three exemplary theories by Talcott Parsons, Jürgen Habermas, and Niklas Luhmann (80-93).

[99] In the case of Luhmann the media concept has many resonances with the concept of negentropy (negative entropy) in physics, or Kevin Kelly's concept of "exotropy" which he develops to discuss technological evolution. See *What Technology Wants*, 2010 (51-69).

within a humanist framework.[100] McLuhan famously argues that the "effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance" (*Understanding Media* 18). There is a welcome and productive acknowledgment of embodiment and sense experience in McLuhan's analyses of media effects, but the abstraction from "content" and corresponding considerations of cognitive communication presents a problem. In bracketing these the image of the media experience becomes a passive one, and the creative aspects of human perception and thinking in the engagement are lost, and the internal dynamism of our experience is subsumed in emblematic concepts of immediate sense experiences with the medium. McLuhan's strategy helps isolate for reflection and interpretation the "message" of the medium, but it also invites oversimplification of media "experience"; concepts of effects often stand in for media experience in this approach. However, it is not only the effects of the medium on "sense ratios" and its structuring of "patterns of perception" that we should consider, but also how those aspects of our experience *interact with and are modified by* our engagement with the "content" and its qualities and forms.

Dewey's more holistic understanding of experience as an organic system can provide a more vital image of and dynamic approach to media experiences. Here is Dewey discussing everyday experience as an interactive process:

> Experience is a matter of the interaction of organism with its environment, an environment that is human as well as physical, that includes the materials of tradition and institutions as well as local surroundings. The organism brings with it through its own

[100] Of course, it is very hard to generalize in this way about McLuhan. This reading of his media concept is surely true of early McLuhan, but he quickly extends his idea of mediums to cover techniques, ideas, etc. Ultimately, it is "mediums all the way down," given that his practice of identifying mediums for analysis shows it is a kind of heuristic idea that can be used to identify relations between the stipulated media within a system (seemingly *any* system), at any imaginable scale. This is exemplified in his theory of the Tetrad, a tool for media poetics from *Laws of Media* (1988), in which a refrigerator, hermeneutics, crowd, electric light, and Einsteinian space-time relativity are all media. McLuhan's late work on media is more posthumanist, focusing less on human experiences and scales.

> structure, native and acquired, forces that play a part in the interaction. The self acts as well as undergoes, and its undergoings are not impressions stamped upon an inert wax but depend upon the way the organism reacts and responds. There is no experience in which the human contribution is not a factor in determining what actually happens. The organism is a force, not a transparency.[101] (*Art as Experience* 246)

This dynamic image of experience formation helps shift the critical focus from *experience of effects* to the *experience of mediation*. Media objects, then, can be viewed as creating a designed "environment" for this process to unfold. Although McLuhan acknowledges that media "configure awareness and experience of each one of us" (21), he does not seem to imagine that such configuration can also be affected by reflective activity engaged in the media experience, and the development of understanding through active interpretation of *any* aspect of that experience which, through reflection, becomes an object of experience and potential catalyst for further interaction, interpretation, etc. By stressing the continuity of thought and sense in his concept of experience Dewey's media concept takes on the role of an enabling schema, a "machine to think with"[102] that organizes thought as well as sense, which are provisionally made distinct in a process of aesthetic reflection on the media experience. Whereas McLuhan's media structured thought and privileged particular forms (e.g. print and linear thinking, abstraction), Dewey's observes that media objects can organize thought in a process of inquiry into experience.

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[101] It is worth adding here that Dewey does not limit the "human contribution" to *cognitive* interaction. Although he stresses conscious, reflective thought in his pragmatist aesthetics, Dewey does not equate mind with human consciousness (273), leaving his conception of experience flexible and open to the domains of affect and what Hayles has recently termed "cognitive nonconscious" (*Unthought* 2017).

[102] See I.A. Richards, preface to *Principles of Literary Criticism*. Richards refers to books as such machines in general, identifying the loom with its weaving function as a favored metaphor for thinking about the kind of mediation books afford.

The first lesson to be drawn from this analysis of McLuhan's approach to media is that the "content" is an *integral* part of the media experience, and it has the potential to, in McLuhan's language, "configure awareness and experience," and shape the "media effects." Thus its abstraction has consequences for how we evaluate the potential of media experiences, especially in the context of the problem of reflection. The second lesson is that without an acknowledgement of temporality, like the one embedded in Dewey's account of experience, it is hard or impossible to observe the first lesson, see its significance for "understanding media," and finally, to avoid slipping back into the macro-critical perspective on the CME and digital media.

Looking back to Hayles, we can now appreciate her approach in a different context. In McLuhanian fashion, Hayles tends to associate hyper and deep attention with media forms, with digital media objects and the CME more broadly being identified with hyper attention. As noted in my initial discussion of Hayles above (§5), she reserves the sense of dynamism Dewey sees in the experience of media to the pedagogical process of comparative media study. Sensing and reflecting on the differences across media render the "cognitive shift" intelligible, discussible, and hence able to be strategically manipulated by pedagogical designs. This is all to the good, yet attending to the temporality of the media experience may complicate Hayles's strategy, especially insofar as all digital media may be coded as instantiations of hyper attention. As we saw in the previous chapter, the gameplay of computer roleplaying games, understood as a developing aesthetic experience rather than modes of ergodic action, is absolutely grounded in forms of "deep attention" and the slowness of reflective reasoning about the diegetic information (in all its forms: visual, acoustic, verbal, etc). The "noematic work" performed in phases of deep attention during gameplay are directly leveraged in the game by design to orient action ("ergodic work") and to imbue such phases of hyper attention with significance and affective force. There

the central problem of "acknowledging mind" in gameplay required a new "phaneroscopical" approach to gameplay as an experience; here, the problem is upstream: in order to further understand the media *experience* we must acknowledge time.

Returning to McLuhan, we find this very same problem in his theory of "hot" and "cold" media. In "Media Hot and Cold" he describes hot mediums as those which "extend one single sense in 'high definition'," noting that "high definition is a state of being filled with data" (*Understanding Media* 22). It is left to inference that cold mediums are low definition, offering less data for the senses interact with (he does not explicitly state this), leaving coldness to be defined in contrast to his formulation of hot. The examples of a high resolution photograph and a line art image as hot and cold visual media respectively render his thoughts on sense experience clear enough. Yet McLuhan proceeds to develop these ideas further, first by adding a concept of "participation," and next by applying these sense and participation dynamics to the content of media and the culture in which the media are experienced. Thus, hot media are low in participation, requiring less to be "filled in or completed by the audience," while cold media are "high in participation or completion by the audience" (23). Finally, having defined the concepts, he applies them beyond the medium, first to content, then to cultures.

He does not explore all the interactions of hot and cold one can imagine based on this scheme in detail, instead focusing on the combination of hot mediums with hot content, which he terms "hot media treatment" (30). He does not give a description of what makes particular content hot or cold beyond the implied reference back to sense data. So, this invites us to imagine the surface of that high resolution photograph (hot medium) filled primarily with line art or abstract figures (cold content), and so on. The ambiguity of "participation" leaves it open to creative interpretation; it can be noematic or extranoematic: the mental synthesis required by an

image made by the neo-expressionist technique of pointillism, or the ergodic actions performed in a videogame.

This formulation of hot and cold media is one of the most interesting and vexing aspects of McLuhan's media theory because the invention of these concepts to build on his thinking about mediums and the senses pushes him to expand the scope of his consideration of media - to bring "content" and culture/context back into his understanding as significant factors in the production of media *experience*. By thinking about how these aspects interact in an experience of media *over time* we not only have to acknowledge the role of reflective activity, we are invited to consider the particular poetics of the media object - how its "aesthetic strategies" and "content" work with the affordances and constraints of the medium to organize particular forms of experience. The concept of "participation" provides an opening in McLuhan's thought for a more dynamic understanding of media and is the bridge to thinking the relation between media poetics and the generation of reflective thought, and thus to identifying an idea of "slowness" in media addressing the aesthetic dimension of the problems of speed in the CME.

To do this we have to bring back a consideration of time - the developmental quality of media experiences that Dewey imagines. McLuhan's atemporal approach tends to produce a categorial system of media based on interpretations of their external effects; ideas of slowness developed from his media theory will always collapse back into deceleration ideologies of "slowing the world" by regulating engagement with media objects and the CME, or withdraw "upward" into programs of mechanically slowing down cultural processes and experiences at the macrosocial level through technological interventions. However, temporalizing McLuhan's hot/cold scheme inspires and enables different observations and interpretations of media objects, including considerations of how they organize sense experience by the modulation of "sense

data" flows and design moments of "participation." This idea also applies to Hayles's hyper/deep framework as well, which could be temporalized to facilitate critical work on how interactive media designs organize expressive synergies, orchestrations, or rhythms of these cognitive styles. This would also invite new and increasingly needful connections to research on attention, memory, and judgment in the fields of cognitive neuroscience, behavioral economics, and neurobiology.

These fields are already being leveraged by the mainstream technology and videogame industries to inform many of their digital designs. In the context of the attention economy the meta-goal of all these designs is to weaponize this knowledge for attention capture and monetization, doing so by channeling that attention into a habitual experience, not a contemplative one. Videogame media seem an unlikely place to search for and explore an aesthetic response to the problem of reflection in the contemporary media ecology given their emblematic status as a media form, but as Brian Schrank notes:

> Not only are videogames an advanced product of technoculture, they are also a major site on which culture naturalizes the ways in which we think and play with technology. In this way, each game becomes a microcosm of technoculture itself. Games teach players how to engage and optimize systems as well as how to manage their desire in a contemporary world. This makes the world of games a principal site to expose, unwork, and rethink the protocols and rituals that rule technoculture. (*Avant-garde Videogames* 4)

Videogames are *the* aesthetic form of contemporary technoculture,[103] and as expressive media they not only function as mediums of technoculture and desire, but also as artworks, as "machines" for thought and feeling.

§2.7 | Artworks as "Machines to Slow Down"

Despite their noted differences, Dewey and McLuhan actually converge on an idea of artworks as *the* media for affecting and reorienting our attention and perception. Dewey writes of artworks: "The moral function of art itself is to remove prejudice, do away with the scales that keep the eye from seeing, tear away the veils due to wont and custom, perfect the power to perceive" (*Art as Experience* 325). As Vogel notes in his own analysis, Dewey entrusts too much to the agency of art in the abstract (111), but I think it is reasonable to claim that artworks are a *special means* of doing these things. A novel or a videogame may not remove prejudice or perfect our perception, but they can render our prejudices and desires, our habits of thought and perception as *objects of critical and aesthetic reflection* through their particular mediation of experience. This is one interpretation of what Dewey means by overcoming the "inertia of habit" and the "quickened expansion of experience" in the forms of undergoing and doing demanded by artworks (270).[104]

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[103] This basic idea was expressed by Paolo Pedercini in "Videogames and the Spirit of Capitalism," emphasizing the relation of computer games to the dominant social logic of rationalization rather than to technoculture generally. His argument that videogames are the "aesthetic form of rationalization" in our time informs my view of mainstream digital game poetics in the following chapters.

[104] Vogel notes early in his own interpretation of Dewey that he "links the media concept with processes of learning and with the expansion of our scope of action and perception" (113). Later Vogel reformulates Dewey's media concept, concluding that "media are a means of individuating thoughts." This formulation emphasizes the mediating function the artwork performs that I would foreground here.

Although McLuhan did not directly claim a moral function for artworks, he did see them as integral to gaining critical awareness and agency over the habituating effects of our engagements with media and technology: "As our proliferating technologies have created a whole series of new environments, men have become aware of the arts as 'anti-environments' or 'counter-environments' that provide us with the means of perceiving the environment itself" (*Understanding Media* 14). McLuhan sees artworks as a special instance of media that render the media environment, normally invisible to our habitual patterns of perception, perceptible again. He later adds that art is not only crucial to "media study," but to developing "media controls" (16). We can extend these thoughts to bring them closer to Dewey by adding that this process of revitalization and expansion of perception is produced by the capacity of an artwork to render the "environment" and the medium itself as objects of aesthetic reflection. Thus while Dewey stresses the value of the catalyzing function of artworks in the development and growth of experience, McLuhan stresses their resensitizing and perceptual functions. This comparison reveals another related convergence. Both Dewey and McLuhan see artworks in general as special instances of mediation of our experience *that are a creative counter to the natural speed of habit*, of unthinking or desensitized perception, in the "slowing" process of aesthetic reflection. Returning a final time to the problem of speed in the CME, we can see that what this reinterpretation of McLuhan adds to Dewey's view is crucial. Slowness not only involves poetic strategies that directly educe various forms of reflective activity, but aesthetic strategies of re-sensitizing perception, expanding and focusing attention. Such strategies also lead to and inform the modes of reflective activity catalyzed by the media object.

The function of these reflections on media theory is not to aid in defining media types or constrain and "correct" the current readings of media, but rather to expand the scope of critical

attention; to, as Twain suggests in my epigraph, bring our imagination into "focus." Doing so will suggest new relations to think about and interpret in media theory, but more importantly media *criticism*. At the macrosocial level, in the context of the problem of speed in the CME, this perspective on digital media casts the cultivation of both the cultural visibility and experience of artworks as an important part of any contemporary "deceleration strategy." At the level of our everyday experiences of the CME, the individual artwork, the expressive media object, becomes the very "machine" Virilio imagined we would never invent: a "machine to decelerate, to slow down."

It is tempting to engage in what McLuhan refers to as an "escape into understanding," yet what seems most needful is not a *general theory* of slow media to supplement Rosa's "critical theory of social acceleration," but rather the exploration of *ideas* of slow media through the criticism of existing exemplars. This strategy will produce critical insights in the practical domain of media poetics, and this is the primary task in the remaining chapters which return to the field of digital games. However, in order to see how digital games can function as slow media, as effective catalysts for reflective thought and attentive perception, we must confront their pervasive tendency to create disabling conditions for aesthetic reflection, to instrumentalize thought and perception in gameplay through their design strategies. This is identified as the *problem of rationalization* in digital games, which will turn out to be the media-specific expression of the more general problem of reflection identified here, and it is the focus of the following chapter.

Chapter 3:
The Ludic Century and the Problem of Rationalization in Digital Games

> Thinking about interfaces is thinking too small. Designing human-computer experience isn't about building a better desktop. It's about creating imaginary worlds that have *a special relationship to reality* - worlds in which we can extend, amplify, and *enrich our own capacities to think, feel, and act*.[105]
>
> - Brenda Laurel

> We are only learning to speak of immeasurable qualities through videogames. It's a slow and collective process of hacking accounting machines into expressive machines. Computer games need to learn from their non-digital counterparts to be loose interfaces between people. A *new game aesthetic* has to be explored: one that revels in problem-making over problem-solving.[106]
>
> - Paolo Pedercini

In the previous chapter I developed a new critical perspective on the contemporary media ecology (CME) that reintroduces consideration of historical and temporal dynamics, arguing that the abstraction from the aesthetic and experiential aspects of media in the dominant perspectives on the digital revolution obscure a systemic challenge to reflective thought. Drawing on Hartmut Rosa's theory of social acceleration I argued that this problem of reflection is not attributable to the digital as such but rather is an emerging effect of the interaction between the complex historical process of social acceleration and the dominant dynamics of the CME. This interaction results in a general problem of speed reflected in media conditions that are increasingly antagonistic to reflective modes of thought. Finally, surveying the critical responses to the problem of speed in the CME which focus on developing deceleration strategies through cultural

[105] *Computers as Theater*, 1991. My emphasis.

[106] "Videogames and the Spirit of Capitalism," *Indiecade East*, 2014. My emphasis.

and technological interventions, I draw on the work of John Dewey and Marshall McLuhan to formulate one focused on an idea of "slow media," grounded in a poetics of reflection exemplified in artworks as expressive media. In this chapter I return to the domain of digital games to argue that they are a crucial yet deeply problematic form of expressive media for the development and exploration of a poetics of reflection in the twenty-first century. Extending previous insights into slowness in the context of the CME, I argue that the path forward in this domain requires both a critique of the complex dynamics shaping contemporary gaming and design, as well as a critical focus on the aesthetic experiences organized by the dominant design strategies of digital games.

§3.1 | Introduction: A Critical Look at the "Ludic Century"

In 2013 game designer and scholar Eric Zimmerman published his "Manifesto for a Ludic Century," arguing that the twenty-first century will be defined by games. Zimmerman identifies and describes a special relationship between games and the networked information society, arguing that the forms and dynamics of information shaped and mediated by digital technology have given games, and especially digital games, new significance. He imagines that both gameplay and game design contribute to a new kind of "gaming literacy" crucial for understanding and creating in our increasingly game-like world which is full of complex systems and information aesthetics that demand modes of thinking and interaction native to games. For Zimmerman, the concept of a "ludic century" is not simply about asserting that games have moved to the center of the contemporary media ecology, an increasingly common argument grounded in an acknowledgement of their economic and pop-cultural impact. Rather, his

argument for their importance as a specific form of cultural media is grounded in an appreciation of the congruity of digital gameplay and design with the contemporary sociotechnical conditions of living and working.

A critical appreciation of this congruity between digital game media and contemporary society is a crucial development since it compels us to think more deeply about the dynamics of this relationship, ultimately requiring the engagement with poetics that has been delayed and disincentivized by the historical fixation on a conceptual approach to games as a new medium (Ch.1), as well as appraisals of the growth of their economic impact, cultural visibility and influence in general. The turn of the century saw both the emergence of game studies and the amplification and transformation of the popular discourse on digital games by the Internet. This democratization of the conversation about digital games facilitated by online communities and publication platforms gave rise to new arguments for taking games seriously as a cultural form that broke from the familiar ones based on appreciating market size or rising mindshare in popular culture. Zimmerman's timely manifesto provides new reasoning that ties the significance of games directly to the digital revolution and character of the contemporary media ecology, and more importantly, grounds its argument in an appreciation of both the practices of game design and cognitive aspects of gameplay as media experiences.

The idea that videogames, their design, and play cultures are crucial touchstones for understanding the contemporary world is not new. McKenzie Wark previously argued that digital games are the emblematic cultural form of contemporary life, revealing by their juxtaposition with society the omnipresence of "gamespace" (2007). Wark's concept of gamespace names the pervasive cultural and socioeconomic dynamics interpellating us all as "gamers," regardless of whether we play videogames or not:

> The game has not just colonized reality, it is also the sole remaining ideal. Gamespace proclaims its legitimacy through victory over all rivals. The reigning ideology imagines the world as a *level playing field*, upon which all men are equal before God, the great game designer. History, politics, culture — gamespace dynamites everything which is not in the game, like an out-dated Vegas casino. Everything is evacuated from an empty space and time which now appears natural, neutral and without qualities — a gamespace. The lines are clearly marked. Every action is just a means to an end. All that counts is the score. As for who owns the teams and who runs the league, best not to ask. As for who is excluded from the big leagues and high scores, best not to ask. As for who keeps the score and who makes the rules, best not to ask. As for what ruling body does the handicapping and on what basis, best not to ask. All is for the best in the best — and only — possible world. There is — to give it a name — a military entertainment complex, and it *rules*. Its triumphs affirm not just the rules of the game but the rule of the game. (8)

Although Wark identifies a relationship of colonization between games and society here, a similar idea of congruity is implied in his analysis. Of course, Wark is markedly less optimistic about this relationship: the rhetoric about gamespace is suggestive of a Fukuyaman "end of history" (1992), a state of the world in which the rules of global capitalism and the market—both increasingly mediated by digital designs and systems that render cultural processes as algorithmic "games" of information abstracted from human context and lived experience—constitute an historical condition we might re-imagine as a new ludic version of Max Weber's iron cage.[107] For Wark, the problem lies in both the dynamics of the contemporary "gamespace," which are characterized by competition between atomized individuals, as well as our uncritical

[107] For an excellent analysis of the relationship between global capitalism and the videogame industry that develops Wark's concerns about the "military entertainment complex" further see Dyer-Witheford and De Peuter, *Games of Empire* (2009).

imagination of it as player-subjects. Videogames themselves, however, may offer a new kind of critical experience, since they function as idealized instances of the cultural logic of gamespace that give lie to notions of its justice and ineluctability in contemporary life. Wark's "gamer theory" thus attempts to exploit the formal congruity of videogames and contemporary culture by using videogames as crucial aids for critical insight and productive alienation.

Both Zimmerman and Wark interpret the prospects of a ludic century at the level of culture, grounding their perspectives on perceptions of significant congruity between the contemporary world and videogames. However, the crucial difference turns on the their contrary views of what Miguel Sicart calls "ludic phronesis," which he defines as "the moral wisdom that is developed as players experience games, which is used in evaluating the actions and dilemmas players are confronted with when playing and when being members of the community" (112). This play or game "wisdom" is accrued by players in their experiences, forming the habits of perceiving, patterns of thinking, and ethics of action that inform their interactions with games and game culture. Zimmerman interprets ludic phronesis generated by contemporary gaming, which he abstracts into gaming literacy, as a critical resource in the ludic century, suggesting new significance for games. For Wark, the core problem of the ludic century is precisely the default formation of ludic phronesis. Mainstream game designs and the game culture that structure contemporary ludic phronesis are complicit with the creation of gamespace and the "military-entertainment-complex," and it is only by rendering it critical through "gamer theory" that videogames can claim new relevance in the ludic century.

Zimmerman claims that "to be truly literate in the Ludic Century [...] requires gaming literacy," adding that "the rise of games in our culture is both cause and effect of gaming literacy." This cultural feedback loop of gaming and literacy seems to be considered an

unqualified good, yet Wark's earlier formulation of gamespace is crucial because it opens up a critical dimension, since the value of ludic phronesis is not intrinsic or justified by the congruities that constitute the ludic century in the abstract. Zimmerman's insights are formalist, and the energy of his manifesto springs from his perceptive identification of "systems, play, and design" as integral to the twenty-first century. However, while it is probably true that these aspects of experiences with digital games translate into increased agency and understanding in the contemporary world, the concept of a generalized gaming literacy abstracted from games hides several problems, each explored below (§2-4).

§3.2 | The Softwarization of Digital Games and Rise of Metamediums

The first problem concerns an unacknowledged fundamental dynamic shaping the congruity between digital games and the contemporary world valued by Zimmerman. Given that digital games, their culture, and development are inextricably linked to computers and networks, Zimmerman's view can be especially attractive and even compelling since these are the emblematic technologies of our time and structure so much of what happens in contemporary life. Lev Manovich's more recent thinking on media and digital culture in *Software Takes Command* offers another critical perspective on the twenty-first century that attempts to identify an emblematic technology that helps explain the cultural dynamics of the moment. The idea of the ludic century and the "ludification" of contemporary life that Wark and Zimmerman theorize can be understood as part of a more recent and perhaps embedded process of what Manovich described as the "softwarization" of culture between 1960 and 2010 (5). Softwarization names the ongoing process of cultural transformation facilitated by the rise of computers, networks, and

media software. Manovich imagines this as a new regime which supersedes the mechanization of culture brought about by the first and second industrial revolutions, adapting the phrase and core argument of Sigfried Giedion's *Mechanization Takes Command* from 1948. The idea of the ludic century acknowledges this ongoing remediation of culture through software while also asserting the increasing importance of digital games in shaping both the design and reception culture of digital media objects and systems.

While Manovich is primarily interested in media creation software, his argument about "metamediums" provides a crucial context for understanding one aspect of the ludic century that leads to the problems of gamespace criticized by Wark. Following Howard Rheingold's insights in *Tools for Thought*, Manovich argues that "computers and software are not just 'technology' but rather a new *medium* in which we can think and imagine differently" (13). Cultural software and the computer together form a "metamedium" that enables the endless remixing of media forms and art techniques, or what Manovich refers to as "deep remix" (46). While the emergence of this metamedium and the softwarization process have precipitated the amazing diversity of media forms in the contemporary media ecology they also exercise tremendous influence on design culture, effectively framing, channeling, and even constraining the expressive strategies of artists in significant ways. These dynamics can be and often are productive, especially when there is a strong experimentalist ethos and general medium awareness present in media creation and reception culture,[108] but as I will argue the creative struggle with digital mediums (and the dynamics of the metamedium) is increasingly neutralized by dominant game designs and gaming

[108] Marshall McLuhan identifies this quality of media awareness with the culture of art and the sensibility of artists in their engagement with media forms. Media we identify as artworks together form a kind of critical "technology," functioning as "radar" to sensitize us to media strategies as well as "anti-environments" counterprogramming our attention and "training perception and judgment." See McLuhan (2011 3-16).

culture currently driving the ludic century and shaping the "gaming literacy" that fuels Zimmerman's optimism.

Ian Bogost and Nick Montfort's creation of "platform studies" in 2009 was an important acknowledgement of the role hardware and software designs play in the creation of game media, and their concept of platform shares much of the reasoning that lead Manovich to the idea of the metamedium.[109] Their call for more attention to the design details of platforms that videogames are created for echoes Manovich's call for software studies at the layer of hardware. However, their focus on the hardware and software design of historical videogame consoles like the Atari 2600 or the Nintendo *Wii* is organized by a concept of platform that may be too narrow to address the emerging "metamediums" that structure much of contemporary game design practices. While there are certainly structuring effects of the hardware architecture of a gaming platform as a discreet system targeted in design, the industry practices of videogame "porting" (the conversion of a game designed for one platform for play on another) and multiplatform releasing (games initially designed to be played on multiple platforms from conception) have had homogenizing effects on games. There has also been a channeling of digital game design into the use of a set of turnkey game engines with creation toolsets, particularly in the contexts of education and independent development. For example, Unity Technologies "cross-platform game engine" *Unity* is not only used to create game media, but now widely used by designers to prototype interactive designs and create VR experiences, and has become the preferred tool in education settings for teaching digital gamemaking. *Unity* effectively functions as another kind

[109] For an overview and list of platforms in the MIT Press Platform Studies series see the website, platformstudies.com. The first book in the series, *Racing the Beam: The Atari Video Computer System* (2009) includes an argument for the significance of the field for game studies.

of metamedium within the field of videogames, with increasing influence in other media spaces.[110]

The computing power and capabilities of hardware - videogame consoles, laptops, tablets, smartphones, desktops; that is, the popular platforms of contemporary gaming - no longer present the same kind of design puzzles that might inspire the kind of constraint art we find in games on earlier platforms.[111] Instead the "metamediums" of modern game engines automate many aspects of the design process to create game media that operate seamlessly on multiple platforms.[112] This relatively recent development pushes the focus of design closer to the game engine and its capabilities, protocols, and functions, and away from the platform proper.[113] Furthermore, the market genres of videogames and their traditional mechanics and structures are made easier to produce through these popular engines, partly by convenience of popular resources (asset packs, code modules, plugins, how-to guides, etc.) and partly by automation within the software, reinforcing the patterns of mainstream design and forms of play.

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[110] At time of writing the company website claims that 50% of all mobile games are developed with Unity, 60% of AR (augmented reality) and VR content, and is the "most used real-time 3D (RT3D) development platform," with applications in architecture, film, and engineering in addition to games.

[111] This loss of practical, given constraint at the platform level means that critical conceptualization of the "medium" by the designers is that much more important, places a greater need to develop an experimentalist thrust to escape the gravity of monoculture.

[112] In addition, the rise of hardware emulation through software and backwards compatibility further erode this old dynamic. The modern tendency toward an "all games, from any time, playable on any machine" has shaped the imagination of designers who also realize that platform-thinking is dangerous given that economic viability of projects in the age of free cultural media require monetization across systems, present and future, anchoring them to metamediums and "best practices."

[113] There are interesting exceptions. For example, Nintendo has a history of experimenting with hardware and creating new play experiences that leverage the constraints and affordances of non-traditional controllers and peripherals, most notably the Nintendo *Wii* and its "Wiimote." Likewise, many artgames and avant-garde experiments in game media decontextualize mainstream habits of gameplay through novel control devices, refocusing design on the platform. For an extreme example, see the art group ////////////fur////'s PainStation <http://fursr.com/projects/painstation-2-0-even-more-enhanced-duelling-artefact>

This particular mode of softwarization within the field of digital games is important context for thinking about game media and the ludic century more generally. In the ludic century the design space of digital games and interactive experiences is heavily mediated by these metamediums which together function as a kind of robust tertiary memory of mainstream patterns of design. Moreover, these design-side systems are naturally compelled to sync up with new reception-side media and devices that capture the cultural imagination. For example, Amazon's new engine Lumberyard leverages its current virtual monopoly on live streaming of videogame play and esports by fully integrating with *Twitch.tv*, allowing designers to build into their games live stream audience interactivity.[114] Similarly, *Unity* has recently responded to the popular interest in VR and rising tech industry investment in VR devices by adapting their engine to this emerging emphasis in digital culture.[115]

Digital games seem to be undergoing a second order softwarization process that portends a subtle convergence, in the strict biological understanding of the term, between digital game media and the dominant digital platforms in the ludic century. This mode of convergence is distinct from Henry Jenkins's notion of "convergence culture," which refers to a cultural logic emerging with the digital revolution that describes the active consumption of information across many media platforms in participatory culture (2008). In the context of the contemporary media ecology and its dynamics (Ch.2), the emerging "metamediums" of games influence their material

[114] Amazon's *Twitch* platform and the emerging battle for the live interactive streaming market it has instigated looks to be a major factor in the shape of the ludic century. Amazon bought *Twitch* in 2014, the dominant network for broadcasting live gameplay, and is slowly leveraging its dominance in other areas like online retail and cloud computing services to create a near inescapable network effect for media consumption, and videogame media specifically.

[115] This trend will likely continue with these metamediums of gaming consolidating influence on interactive / digital design space by leveraging their dominance as tools and quickly moving to integrate features for use with any new network service or device that rises to some significant level of cultural visibility and use. For example, one can imagine the ludification of the Internet of Things, rendering "smart" homes, offices, and public spaces as new domains of gamespace.

evolution and draw them toward existing digital systems and forms. This convergence is subtle (relative to changes in cultural practices) and not identifiable as a cultural logic because it is more responsive to the interactions of commercial hardware and the softwarization dynamics of the moment than to players and game designers. Digital games have always reflected technological culture, not only for the obvious reason that they are developed on computers and digital networks, but also because they reflect the values and dominant practices of the communities who make them and their environments. Unlike the previous century in which digital games were almost exclusively made by engineers and programmers, rising digital media literacy, the proliferation of media creation software, and improvements in digital distribution present in the ludic century have removed many of the technical the barriers of entry to making games, opening up the field of independent game design (Anthropy 2012; Schenold 2013). However, the technological and commercial dynamics of "metamediums" in the field of digital games may effectively create a new center of gravity that narrows rather than expands the design space and expressive potential of digital games, even as the diversity of creators increases.

Although it is too early in this "softwarization" process to conclude anything, it is important to at least acknowledge that the ludic century that Zimmerman imagines will be heavily influenced by this convergence of the enabling metamediums of gamemaking with the dominant digital platforms and commercial technology industry. Put another way, we ought to be mindful of the fact that while the ludic century may be "defined by games" in the senses already discussed, digital games are increasingly framed by the design ideologies of the dominant technical culture, itself increasingly subject to the control and values of giant tech companies. Furthermore, if commercial digital networks continue to consolidate power and wealth through network effects, and platform functionalities continue to converge, the cultural visibility - and

hence popular imagination - of digital games, which has always been myopic, may become even more so.

The entrenched popular histories of digital games, which are oriented by commercial or technical milestones rather than aesthetic and expressive strategies, have sustained the dominance of the escapist model of thinking about games and play, effectively marginalizing design experiments, alternative aesthetic strategies, and the early critical framing of the potentials and significance of game media (Schenold 2016). While this cultural constant has directly shaped the reception history of digital games, it has also indirectly influenced design. Given the dynamics of the softwarization process within the ludic century, game culture and design practices are subjected to the principles of the contemporary attention economy created by network and metamedium designs. One effect is that popular market genres, which are persistently defined along mechanical or technical lines rather than expressive ones in popular and industry discourses (Blow 2012), increasingly inform the tools, platforms, and online resources central to making and distributing game media.

The crucial point to acknowledge here is not that these dynamics of the ludic century directly determine or completely circumscribe game design; artists and designers always find a way to express and to experiment. Rather, these dynamics represent a new technological complement to the familiar cultural discourse that has limited the popular imagination of game media since the eighties. This has important implications for discoverability and accessibility of games in the ludic century, which are both closely tied to recognition by a few dominant networks and seamless technical interfacing with their systems. While the new metamediums of gamemaking have crucially opened the field to new creators, the logic of convergence with the existing political economy and design ideology of digital networks and devices introduces a new

homogenizing vector into game culture. As I will conclude in the final chapter, this makes the cultivation and visibility of the videogame avant-garde and its experimental, critical ethos more important, even paramount if we fully acknowledge Zimmerman's claims about the ludic century (Ch.4.7).

§3.3 | The Ideologies of the Gameful World

Returning to Zimmerman, if this unacknowledged dynamic of softwarization in the domain of digital games represents an important blindspot toward technological forces shaping the generalized gaming literacy that informs his optimism about the ludic century, the next problem concerns cultural and institutional forces that influence its qualities and scope. Zimmerman constructs the idea of the ludic century with a historical narrative, claiming that the digital and information revolutions of the twentieth century gave the ancient cultural form of games "new relevance" in the twenty-first. This new relevance of digital games is imagined as an emergent cultural development, and given the congruity between digital games and dominant features of the world produced by these revolutions, Zimmerman's assertion of the importance of gaming literacy is a natural response.

This streamlined account is very effective at focusing our attention on important relations between qualities of digital gaming (playing and designing) and contemporary conditions. However, the rise of what Walz and Deterding refer to as the "gameful world" in the ludic century complicates this account, identifying cultural design practices that influence the form and quality of the gaming literacy generated by our experience of digital games as well as the cultural objects and systems informed by gameful or playful design. In the introduction to their

seminal anthology *The Gameful World* Walz and Deterding analyze the industry and academic discourses of gamification in order to provide a critical history and theoretical framework for appreciating the ways in which this initial idea of applying aspects of game design and gaming practices to other domains of work and life has grown and evolved into a kind of broad philosophical movement with different strategies and goals. Gamification emerged out of the "serious games" movement in the late 2000s (Deterding 3), adapting to the greater significance of the web as a central hub of cultural activity and mediating platform of everyday life. As myself and others have argued, the first wave of gamification was mostly a rhetorical marketing strategy and the application of tracking, feedback, and reward systems to motivate a targeted (usually commercial) activity (Juul 2011; Bogost 2011, 2014; Schenold 2011). However, the stated spirit of leveraging game design strategies for non-gaming purposes continued to evolve, informed by transformations in gaming and scholarly study in various fields. The contemporary result is identified by Walz and Deterding as the gameful world.

The phenomena that constitute the gameful world are varied,[116] but Walz and Deterding provide a conceptual mapping that identifies a "double movement" in contemporary culture (Fig.12).[117] These movements in contemporary culture can also be understood as ideologies insofar as they inform design activities, and their pursuit in the ludic century not only amplifies the significance of games, but more importantly, affects the formation, quality, and scope of the gaming literacy Zimmerman posits.

[116] For an example-driven overview and discussion of these four domains see "Videogames and the Spirit of Musement" (Schenold 2018).

[117] This is an unmodified reproduction of the Figure 1.1 from *The Gameful World* (Deterding 8).

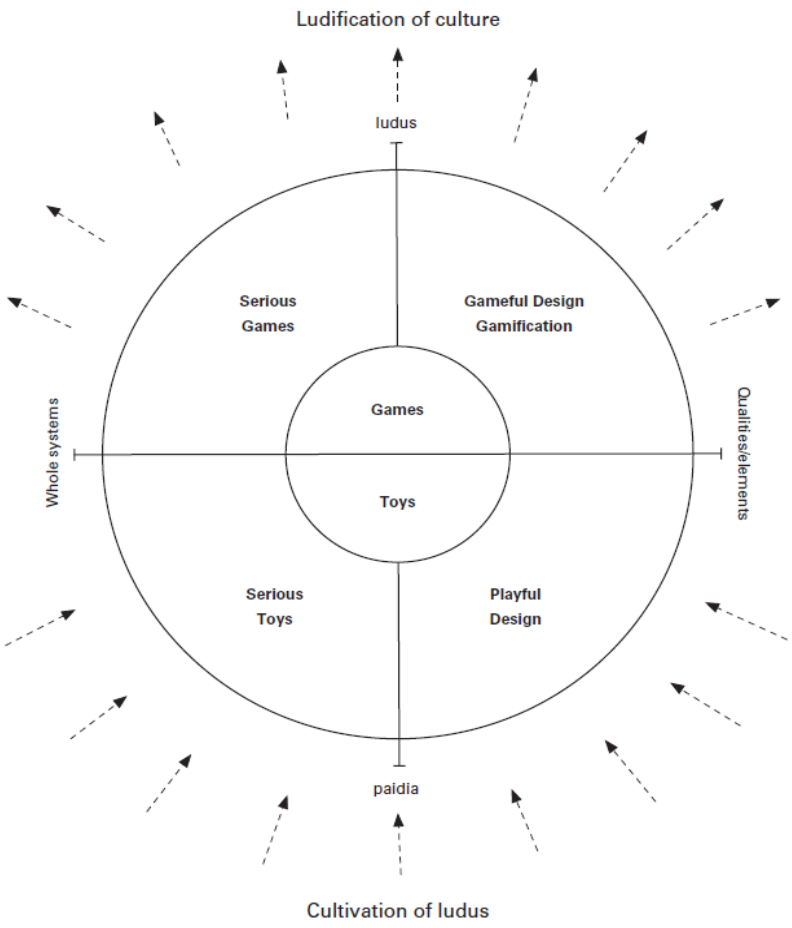

Figure 12 - Conceptual Map of the Gameful World

Reproduction of Walz and Deterding's schematization of the cardinal design orientations of the gameful world.

While Zimmerman notes that "the rise of games are both cause and effect of gaming literacy," the primary feedback loop in the ludic century may be between the cultural dynamics of the gameful world, which Walz and Deterding identify as the "ludification of culture" and the "cultivation of the ludus" (8), and gaming (on both design and reception sides) and digital culture generally. Not only will the ludic century be "defined by games," but also by the strategies of the gameful world. Just as the dynamics of softwarization in gamemaking shape design practices and influence the kinds of games that get made (and hence the dominant forms of ludic phronesis in

games that constitute "gaming literacy"), the dominant strategies of the gameful world inform these aspects of the ludic century as well.

This cultural dimension of the ludic century is crucial to acknowledge because the forms of gaming and play pursued as well as the orientations designers of the gameful world have toward the players are largely instrumental, subordinating aesthetic, experiential, or expressive goals to highly rationalized outcomes or ends. The ludification of culture is oriented toward the general play form of *ludus*, which is defined by explicit rules, systems, and goals. This is the main thrust of the ludification process oriented by serious games and gamification, represented in the upper half of the conceptual map (Fig.1). It is this aspect of the gameful world that resonates with Zimmerman's focus on systems thinking in his formulation of gaming literacy. However, Zimmerman also acknowledges a "need to be playful," which he links to creativity and innovation (21). This aspect of gaming literacy is also represented in the map by serious toys and playful design of everyday environments and objects in the bottom half. Walz and Deterding identify the "cultivation of the ludus," oriented by *paidia*, the play form characterized by spontaneity or playfulness, as a complementary cultural process to ludification.

There are details worth reflecting on here before moving on to the final problem presented by Zimmerman's formulation of a general gaming literacy. While the "double movement" in the gameful world is schematized abstractly for clarity of theory, it is important to note the historical dominance of ludification, and especially gamification. Similarly, Zimmerman appears to give equal weight to the aspects of system thinking and play in his valuation of gaming literacy and its appositeness to the ludic century, yet it is the advent of "digital technology" and the ongoing digital revolution that frame Zimmerman's perspective on the new relevance of games. As argued in the previous chapter, the conditions of the contemporary media

ecology are not favorable to reflective activity (Ch2.3-5), and everyday experiences with digital media and networks increasingly call for instrumental or habitual thinking about systems and information at the expense of playful or reflective exploration. Also, as Wark warned with his concept of gamespace, the contemporary social conditions encourage highly rationalized "gaming" (of the system) over play experiences. So, even though Zimmerman rightly acknowledges the importance of play in the ludic century in the abstract, the unacknowledged actual conditions of the digital culture we have inherited structurally marginalize it.

This problem is inadvertently expressed in the "compass" to the gameful world Walz and Deterding create to visualize the distribution of scholarly work in the anthology. I have reproduced it below with modifications to indicate the emphasis on ludus (Fig.13, left), and revealingly, the lack of focus on play as a means of sustaining the existing social order (Fig.13, bottom right).

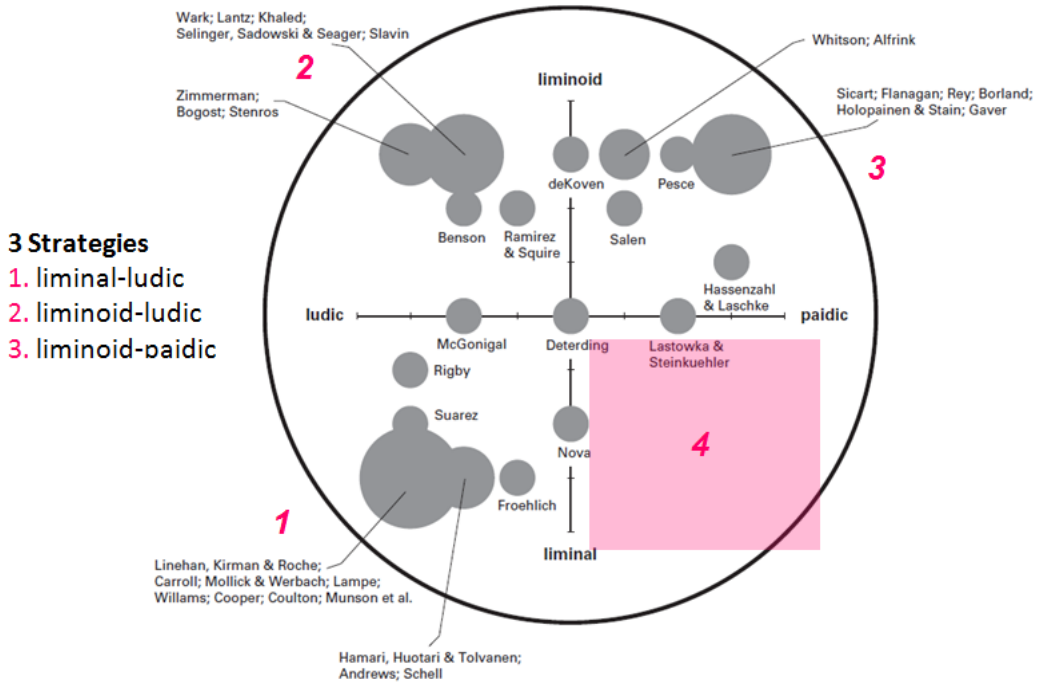

Figure 1.2

A compass to *The Gameful World*: Contributions by predominant form of play and moral politics.

Figure 13 - Compass of the Gameful World

A reproduction Walz and Deterding's compass of theorists and designers with an overlay (red) indicating three dominant strategies and highlighting the unrepresented fourth.

Walz and Deterding borrow the terms "liminal" and "liminoid" from Victor Turner's *From Ritual to Theatre: The Human Seriousness of Play* to indicate the "moral politics" of the role of play and games represented in the scholarly field. The "liminal use of games and play" functions as a "conservative perfection of the means toward the given goals of the existing social order," while the "liminoid" use aims at "progressive questioning and subversion of the standing order" (9).

First, it is important to note that there are, effectively, only three existing design strategies of the gameful world:

1. The *liminal-ludic*, which imagines game media and especially gamification as tools for amplifying or improving cultural processes and experiences, usually from the perspective

and to the benefit of institutions. This is exemplified most pervasively by the gamification movement, but also includes the long history of "edutainment" and "serious" games, more recent "advergames," and the "games for health" and "quantified self" movements.[118] This appeals most directly to commercial interests and the most evident aspect of the gameful world.

2. The *liminoid-ludic*, which imagines game media as catalysts for social change and cultural critique. This is exemplified best by the "games for change" movement,[119] appealing directly to the existing critical discourse in the humanities which tends to foreground explicitly political concerns and implications.
3. The *liminoid-paidic*, which focuses on playful design to re-contextualize and remediate experiences to be more play-centric and hence more meaningful, effective, or engaging. This is strategy is best represented in the work by the Institute of Play and is most often found in education.[120]

Second, the unrepresented fourth strategy (Fig.13, area 4), the *liminal-paidic*, is revealing because it renders visible what is likely felt in everyday experiences: play, at least in the idealized sense Zimmerman describes, is not a dominant feature of activities that facilitate the

[118] For early examples of edutainment and serious games recall the iconic The *Oregon Trail* (1985) and various typing and math games deployed in grade schools. For more contemporary examples see University of Washington's Center for Game Science, especially *Foldit* (2008) and *Mozak* (2017). Advergames examples are omnipresent as promotional web and mixed reality mini-games to hype films, brands and consumer products. For a brief and insightful overview see Bogost's (2007 145-230). For media and discourse on games for health and the quantified self movements, see Games for Health Europe <www.gamesforhealtheurope.org> and QS <quantifiedself.com> respectively.

[119] See Bogost's *Persuasive Games* (2007) for an exemplary scholarly account, and the Games for Change Festival website for industry-based discourse and media reflecting this orientation <www.gamesforchange.org/festival/>. See also Jane McGonigal's viral TED talk "Gaming Can Make a Better World" (2010).

[120] The work of the late Bernie DeKoven (1978; 2013) is seminal reading for this orientation, as well as recent work by Katie Salen (Institute of Play, Connected Camps), Mary Flanagan (2009), and Miguel Sicart (2013).

existing social order. This will be an important observation to keep in mind as we critically reconsider the notion of games as "emblematic" form of the ludic century below.

Acknowledging the gameful world as a cultural force in the ludic century creates complications for Zimmerman's notion that "games have a particularly direct connection with play" (21). First, we should note that the ideas, habits, and experiences of play informing any general gaming literacy are influenced by the media ecology and the movements of the gameful world. This insight is the cultural complement to the observations about the influence of softwarization and metamediums in gamemaking above. Second, in light of these dynamics of the gameful world, it places even greater significance on whether and in what particular ways our experience of digital games and their designs in the ludic century have a "direct connection" to the cultivation of *play*.

§3.4 | The Abstraction from Poetics and Aesthetic Experiences of Actual Games

This brings us to a final problem presented by Zimmerman's formulation of the ludic century. This problem concerns the abstraction of games into an emblematic cultural form that provides a literacy needed to "address our problems" (21). As noted, Zimmerman is right to point to productive congruities between digital gaming and the contemporary world as well as their dominance as a cultural form in the twenty-first century, but as I have suggested important dynamics shaping the "gaming literacy" he imagines are lost in the formalism that enables his insight and drives his optimism. This is also an effect of the abstraction from poetics, expressive strategies and goals, and aesthetic qualities of game experiences. If we accept that the ludic century will be defined by games, we must not only be mindful of the fact that games are

increasingly defined by and adapting to given systems, softwarization dynamics, and ideologies of the gameful world, but also the mainstream and experimental poetics of actual games and the modes of experience they target in their designs.

This problem is identified succinctly by Katherine Isbister in *How Games Move Us*, where she argues that we must go beyond "shadowboxing with a monolithic notion of 'games,' and delve into the elements that make up the game experience in all its facets" (xv). She correctly notes with appropriate frustration that too often in both popular and game studies discourses "[w]e talk about games as if they are all the same. We talk about how games could reenergize education without having a nuanced conversation about *which* games and *why*" (xvi).[121] This manifests in the discourse of game studies itself through its privileging of theory development over game criticism and scholarship, a dynamic that naturally results from publishing and curriculum design practices that reflect narrow criteria of relevance and legitimacy. For example, academic book projects and classes on digital games are usually justified and produced with reference to theory contributions to understanding games as a uniform medium, or to timely cultural and political issues they may thematically reflect. This situation suggests that we have only tended to take digital games seriously as a media form or as a resource for cultural commentary and not as artistic expression or significant aesthetic experiences.[122] As Ian Bogost has insightfully pointed out, adding reference to yet another over-determined abstraction like "art" accomplishes little: "We must look deeper, to the particularities

[121] This observation and perspective aligns with preceding arguments, especially my critiques of "actionism" as a perspective on gameplay (Ch1.2-3), and the macro-critical perspective of the contemporary media ecology (Ch2.2-4).

[122] Of course, there are some exceptions, though they tend to be by academic writers publishing outside of the university press ecology. Two emblematic examples are Brendan Keogh's *Killing is Harmless* (2013), a landmark book-length close reading of *Spec Ops: The Line*, a game inspired by Joseph Conrad's *Heart of Darkness*, and the Boss Fight Books series of monographs on single games. <https://bossfightbooks.com/>

of specific aesthetic trends in game development itself, in hopes of identifying their positions in relation to games and art alike. In other words, what we lack are discussions of the developing conventions, styles, movements through which games are participating in a broader concept of art, both locally and historically" (*How to Do Things With Videogames* 12).

The issues with game studies discourse and scholarship aside, the fundamental point is that the significance of gaming in the ludic century will not only be defined by abstract human capacities that address the practical demands of the contemporary world, but also by the aesthetic experiences created in actual gameplay. This demands that attention and analysis - indeed, *criticism* - be honed to the aesthetic qualities of ludic phronesis and how a general gaming literacy emerges and is constantly shaped and reshaped by these. One problematic assumption Zimmerman's view leads us into is that digital games and the activity of *play* are "directly" (integrally) related, yet critical attention to the conventional experiences of gaming in the ludic century increasingly undermines this belief, especially as we build back into our view all the complications identified above. Critical adaptation and creative intervention in the ludic century will not only require that we appreciate the forms of literacy games engender (e.g. systems and design thinking, problem-solving, etc.), but also how digital games, through their designs, imagine players differently and seek to organize their experience of those core forms Zimmerman identifies; and not only these, but also *alternative* forms that may turn out to be more needful in the ludic century by virtue of the very congruity that grounds his manifesto.

As I will argue below, the ludic century calls for more active development of existing poetics of reflection in digital games, and especially deliberate and sophisticated design for a mode of experience that the philosopher Charles Sanders Peirce refers to as *musement*. The twin forces of social acceleration, amplified by the problem of speed in the contemporary media

ecology (Ch.2), and the dynamics of ludic century as characterized above demand a countervailing force in gaming culture and design. Recognizing this will require attention to what we may identify as the "aesthetic dimension," adapting Marcuse (1978), of contemporary digital games in order to apprehend the marginalization of important modes of reflective activity in the ludic century (§5). In confronting the trivialization of aesthetic experience in classic Marxist aesthetics Marcuse writes:

> Art is committed to that perception of the world which alienates individuals from their functional existence and performance in society – it is committed to an emancipation of sensibility, imagination, and reason in all spheres of subjectivity and objectivity. The aesthetic transformation becomes a vehicle of recognition and indictment. But this achievement presupposes a degree of autonomy which withdraws art from the mystifying power of the given and frees it for the expression of its own truth. (9)

Setting to one side the claims about the emancipatory power attributed to art in general and a universal process of "aesthetic transformation," Marcuse's focus on the relation between artworks and the "mystifying power of the given" here is a helpful one. As suggested below, this relation is also present within the development of aesthetic experience in gameplay, constituted by the interaction between a mystifying "given" shaped by the dynamics of the ludic century and the aesthetic strategies and ergodic designs of the particular game, strategies and designs that have the potential to generate an "*estranging form*" (10) capable of catalyzing reflection and new perceptions outside (or "emancipated" from) the dominant forms of contemporary ludic phronesis.

The change in focus to this aesthetic dimension will enable discussion of the poetics of reflection in example games, leading to the identification of musement as the fundamental

experience pursued by their poetic strategies (Ch.4.1-3). As a fundamental mode of aesthetic reflection, musement is organized and channeled by subtle design strategies in these games into other modes of reflective thought, such as reverie, speculation, creative inferential and analogical reasoning, and aesthetic contemplation. The exploration of design for musement through key examples develops into the formulation of an broader "aesthetic of slowness," the native resistance to the problem of speed in digital games (Ch.4.4-6). Finally, returning to the context of the ludic century, the argument for musement and further development of the poetics of reflection in digital gaming translates into a call for active development of the "videogame avant-garde" (Schrank 2014), especially in the direction of aesthetics (Ch.4.7).

§3.5 | Ludosophia, Aesthetics, and the Problem of Rationalization

The pro forma optimism of the manifesto for the ludic century and the prospective hope of the emerging gameful world draw their energy from a perspective we might call *ludosophia*. Ludosophia is an informal philosophical perspective that sees games as an integral source of education and insight, based in a fundamental belief in "wisdom" accrued in gameplay. If we understand Sicart's conception of *ludic phronesis* as a reference to the "moral wisdom" and practical know-how developed in gaming experiences (112), *ludosophia* refers to a more general belief in the fundamental value and applicability of such ludic phronesis in other domains of life. Varieties of this general perspective can be found across time and cultures, from the Hindu concepts of "līlā "(divine play) and "rasa līlā" (aesthetic play) in Indic cosmology (Handelman 1997), to Plato's pedagogical system of "paideia" encapsulating various modes of play in ancient Greek religion (Lonsdale 1993). However, the contemporary form of ludosophia differs from

historical forms in two important ways. Recognizing these differences reveals a blindspot to a fundamental problem in the ludic century: the rationalization of play in digital games.

First, it is important to acknowledge that contemporary expressions of ludosophia are integrally linked to the contemporary media ecology and the digital. This represents a radical break from historical thinking about the activity of play which tends to articulate its value in metaphysical terms within a humanist framework. In developing his seminal theory of play in *Homo Ludens*, Huizinga consistently writes of the "play-spirit" and foregrounds "its significance, its expressive value, its spiritual and social associations" (27). Like Zimmerman, Huizinga argues that play and games have a "cultural function," but his understanding of their value derives from perceived roles in human meaning, expression, and the "amplification" of life and creativity. Indeed, the "play element" turns out to be the primary engine of human civilization for Huizinga. Writing under the specter of WWII, and bearing witness to the rise of Hitler and Nazification, Huizinga saw games and all forms of play as *the* countervailing human force to the growing mechanization of human activity and militarization of society.

Since Huizinga did not have a critical theory of technology, ludosophia could only be articulated in essential opposition to material and technological aspects of culture. Contemporary ludosophia, by contrast, acknowledges technology, the centrality of digital games and play forms mediated by digital technologies (e.g. augmented reality, virtual reality, mixed-reality systems), as well as the dynamics of the contemporary media ecology (Ch.2). This is reflected in the focus of Zimmerman's emblematic form of ludosophia, which has shifted from the "spiritual" and "social" constellation of relations between play, humanity, meaning, and civilization that occupied Huizinga, to a more functionalist and technological one concerned with "innovation," "systems-litera[cy]," design thinking, and creativity (Zimmerman 21) of individuals in the

specific context of the contemporary media ecology. This new focus in turn enables the positing of a general "gaming literacy" that can be imagined and valued as practical. The problem is that while this literacy may be practical and productive, it is largely uncritical. That is, the forms of ludic phronesis imagined in contemporary expressions of ludosophia have no strategic, critical relation to the dominant social and technical order of the ludic century.

This complicates the problem of the "military-entertainment complex" posited by Wark earlier (§1). In the ludic century, it is not enough to develop a "gamer theory" that acknowledges the logic of gamespace, thereby critically reframing the given forms of ludic phronesis - the modes of thought and action - associated with contemporary gameplay. The forms of ludic phronesis themselves need to have a critical, even *subversive* relationship to the dynamics of the ludic century. Without a critical approach to gaming in the ludic century, ludosophia becomes a an unwitting reification of gamespace. Furthermore, if the forms of ludic phronesis organized by mainstream digital game designs reflect and reproduce rather than challenge the dynamics of the contemporary media ecology, the "gaming literacy" Zimmerman imagines will not be a critical literacy.

The second difference in contemporary forms of ludosophia is the absence of expressive and aesthetic considerations. Although Zimmerman ends his manifesto acknowledging an aesthetic aspect, asserting that "games are beautiful" and need no justification (22), philosophical aesthetics do not significantly inform the imagined significance of games in the ludic century. Instead, games are abstracted for ahistorical appreciation as a source of "beauty and meaning." Huizinga commented on the "profoundly aesthetic quality of play" (20), noting that as an experience it provides both a contrast to and a disruption of ordinary life (40). Zimmerman, given his compartmentalization and approach to aesthetics, does not seem to seriously consider

how basic *aesthetic strategies* in games - design strategies pertaining to organization of attention, player memory, perception, and reflective activity - might interact critically with the conditions of the ludic century and the dominant forms of ludic phronesis he identifies as central to it. As I will discuss below, this marginalization of philosophical aesthetics is especially problematic in the context of the ludic century given the pervasiveness of behaviorist designs in mainstream gaming, as well as the general problem of speed in the contemporary media ecology (Ch.2).

Attention to aesthetic experience in digital games has been marginalized in part due to the brutal simplification of gameplay in game studies discourse previously identified in the critical reconsideration of ergodics (Ch.1), but also more broadly due to the formalism of contemporary ludosophia which tends to fixate on predetermined and pre-valued modes of thought (e.g. systems analysis, design thinking, problem solving, etc.) completely abstracted from semiotic and aesthetic aspects of games. While this formalism can be leveraged to identify value in gameplay and design in the ludic century given the congruities with contemporary conditions, it can also limit our awareness of their critical and subversive potential, both in changing the dominant forms of ludic phronesis in game culture, and shaping the dynamics of the ludic century generally.

However, the marginalization of aesthetics is the more consequential difference of contemporary ludosophia. On the one hand, there has been a turn away from the metaphysical, aesthetic, and humanistic values ascribed to play in Huizinga's anthropological-philosophical approach toward modes of thought practiced in digital gaming that draw their special value from the context of the ludic century (and especially its technological conditions). This turn enables the discourses and projects of the gameful world, particularly those associated with the "ludification of culture" (Fig.12). Furthermore, this reframing also helps rationalize institutional

interest in digital games not as cultural expression or artworks, but as practical technologies and emblematic media of an important new literacy. On the other hand, the bracketing of aesthetic concerns creates an alibi for critical engagement with the increasingly problematic relation between the aesthetic aspects of gameplay experiences and how they relate to the external conditions of everyday life in the ludic century.

It is this relation that is the most worrisome aspect of the ludic century. As I argued in the previous chapter, the aesthetic dimension of social acceleration, theorized as the problem of speed in the contemporary media ecology, shape basic conditions of mediation that are systemically hostile to reflective activity and the cognitive mode of deep attention.[123] Similarly, acknowledging the aesthetic dimension of digital gaming reveals more subtle, related problems: the dominant forms of ludic phronesis created by digital game designs are not only valued for their congruity with the given dynamics of the contemporary media ecology in the ludic century,[124] they also reinforce and render in aesthetic form the "cybernetic bias" of computers and the practice of instrumental reasoning. That is, digital games may function as an aesthetic compliment to the popular and institutional discourses of instrumentalism and "technological solutionism" (Morozov 2014). Of course, this all turns on the aesthetic and expressive strategies of games themselves as well as the dynamics of mainstream digital game culture.

This is the central thesis of Paolo Pedercini's indispensible talk, "Videogames and the Spirit of Capitalism," in which he argues that digital games are the "aesthetic form of

[123] This is a reference back to the discussion of Hayles on the contrast between "hyper" and "deep attention" as "cognitive styles" (Ch.3.5).

[124] This is mirrored in the adaptive logic of the digital humanities and the more practical pedagogical strategies focused on media creation and building digital literacies.

rationalization" in our time (2014).[125] Pedercini's approach is not only timely given the dynamics of the ludic century outlined above, but also an integral addition to the limited scholarship focused on recovering critical interest in aesthetic experience in the wake of all the formalisms that structured the discourse on digital games in previous decade, including hypertext theory, ergodics, ludology, and applications of narratology. The important work in this direction has been focused on identifying the value of aesthetic theory for understanding digital games (Kirkpatrick 2011), developing an aesthetic dimension to our theories of interactivity and gameplay (Upton 2015), or conceptual resources for understanding some specific domain of our aesthetic experience of games (Swink 2008; Collins 2013). However, Pedercini is alone in his *critical* focus on the implications of our aesthetic experiences with digital games for our habits of thinking and perceiving, specifically in the context of the ludic century characterized by Zimmerman.

Pedercini's focus on the aesthetic aspect of the ludic century as embodied in the dominant designs of digital games is what enables him to perceive and articulate a general problem of rationalization in digital gaming. This problem will turn out to be the media-specific expression of the problem of reflection (Ch.2.3-5) in the domain of digital games, and it is what gives the pursuit of a poetics of reflection in digital games its critical value and moral function in the ludic century. Pedercini's formulation and critique of rationalization in digital games concludes with a call for "a new game aesthetic ... that revels in problem-making over problem-solving." I will argue that design for "musement" lies at the core of this new game aesthetic, constituting the

[125] The term rationalization, taken from the work of sociologist Max Weber, refers to the subordination of traditions, emotions, desires and other experience-based principles of motivation for conduct to the logic of optimization through quantification and calculation. Pedercini emphasizes the logic of optimization in his application of this idea to the domain of videogames, expressed by the principle values of "efficiency and control."

ground of a critical strategy for digital games in the ludic century, as well as the problem of speed in the contemporary media ecology (Ch.2.3).

Pedercini begins his argument that computer games are the contemporary "aesthetic form of rationalization" with a vivid list of iconic experiences in digital games that highlight a problematic "compulsion" in mainstream game design:

> As she jumps over moving platforms, blows up barrels at the right time, collects glowing gems, looks for treasure chests, scores a head-shot, storms an alien base, perfects her racing line, upgrades her weapons, allots a perfect square of land, gets an extra life, recruits a companion, seizes mineable resources, invests in a new infrastructure, persuades a character, puts a falling block into place… as she learns by trial and error, wins, loses… as she does all of this, my fellow player may realize that all of her actions pertain to a specific mode of thinking and acting. If computer games, in their immense variety, have anything in common, that may be their compulsion for efficiency and control. ("Videogames" 2014)

This dramatic description positions us to recognize important dynamics of contemporary gaming. Goal-focused, action-centric game designs are dominant, and these forms tend to *privilege* economization of action and reactive, habitual, and instrumental patterns of thought and perception based on relating to the game as a system to be solved, completed, optimized, conquered (rather than a virtual world or diegetic space to be explored, understood, experienced, synthesized, critically reflected on, etc.). Furthermore, this quality of mainstream gaming is amplified by design conventions native to specific market genres (e.g. first-person shooters, real-time strategy, multiplayer online battle area, action-adventure, puzzle-platformer, etc). Videogames often indirectly instrumentalize the player's attention, thinking, and play strategies

by signaling and then conforming to genre codes of play in their designs. These codifications of gameplay are reinforced as market genres are popularized, refined, and subsequently integrated into the metamediums and softwarization processes that organize game design culture (§1).

Pedercini also argues that the computer medium itself is a contributing factor to this dynamic in contemporary design, noting that “from the eyes of a computing machine, everything is mathematically defined and susceptible to rational calculation” ("Videogames" 2014). Contrary to Zimmerman, Pedercini incorporates a critical perspective on the technological conditions of videogames in his view:

> Videogames are built upon technologies of control and quantification, and they are still by and large informed by them. When we produce artful depictions of our world using computers, we inevitably carry over a cybernetic bias that could reinforce certain assumptions and mindsets. ("Videogames" 2014)

Pedercini's concern here about "cybernetic bias" in games is framed specifically by his view of capitalism. He worries that "computer-assisted, cybernetically-biased variety, can cultivate the capitalist mindset and value system — regardless of what the specific games are intended to portray or narrate" ("Videogames" 2014). However, this cultural concern can be translated into its aesthetic counterpart: the logic of rationalization in contemporary game design and the tendencies of the computer medium educe and reinforce instrumental forms of reasoning and perception in gameplay regulated by the values of "efficiency and control."

For designer Frank Lantz the aesthetic aspect of the problem of rationalization is not recognized as a problem at all. In "Hearts and Minds,"[126] Lantz argues that "games are the

[126] It is interesting to note that Pedercini and Lantz gave their talks on games as a significant "aesthetic form" months apart at Indiecade and Game Developers Conference respectively. The differences are symbolic: Pedercini's discourse is critical, arguing for change, delivered to indie designers in Culver City; Lantz's discourse is in the

aesthetic form of instrumental reason," of "thinking and doing." Lantz interprets instrumental reasoning generously, associating it with everyday problem-solving or practical reasoning. Non-instrumental forms of thinking, such as reflective inquiry, reverie, and speculation, are absorbed into the activity of problem-solving. Much like Zimmerman, Lantz values the forms of thinking required in gameplay, yet games not only practice these forms, generating ludic phronesis, they also render them an object of aesthetic experience. Thus Lantz claims that "every game is a chance to have thought made visible to itself in experience" (Lantz 2014). As an *aesthetic* form of instrumental reason, we not only think and do in games, we "see" this activity, we become more aware and attentive to its development.

In discussing a central example, the game *QWOP* (Fig.14), a running simulator in which the player controls the calves and thighs of a sprinter using the keys in the title, Lantz develops an orienting metaphor and commentary that he extends to all games:

> [*QWOP*] is a microscope that magnifies the hidden operations of our mind as it struggles to think and do all of the thoughts and emotions that are normally invisible to us because they are the very stuff that we are made out of. It is thought made visible to itself, and this quality of games, their ability to give us a window into how our minds operate is something I think you will find over and over again if you pay close attention to what it actually feels like to play a game. This quality is central to my understanding of what games are. All games, from the most competitive rule-bound systems to the most anarchic freeform play spaces you can feel the same quality of thought made visible to itself when you start solving Sudoku puzzles or really any kind of puzzle. (Lantz 2014)

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apologetic mode, delivered to a more corporate crowd including developers, publishers, and technologists in San Francisco, near Silicon Valley.

Although Lantz uses the terms "visible" here and repeats it throughout his talk, and the metaphor is visual, he effectively means perceivable or felt. Hence in "[paying] close attention to what it actually feels like to play a game," we can perceive this reflexive quality of thought in gameplay. Stated differently, games are a medium by which we perceive and take pleasure in our practice of instrumental reasoning.

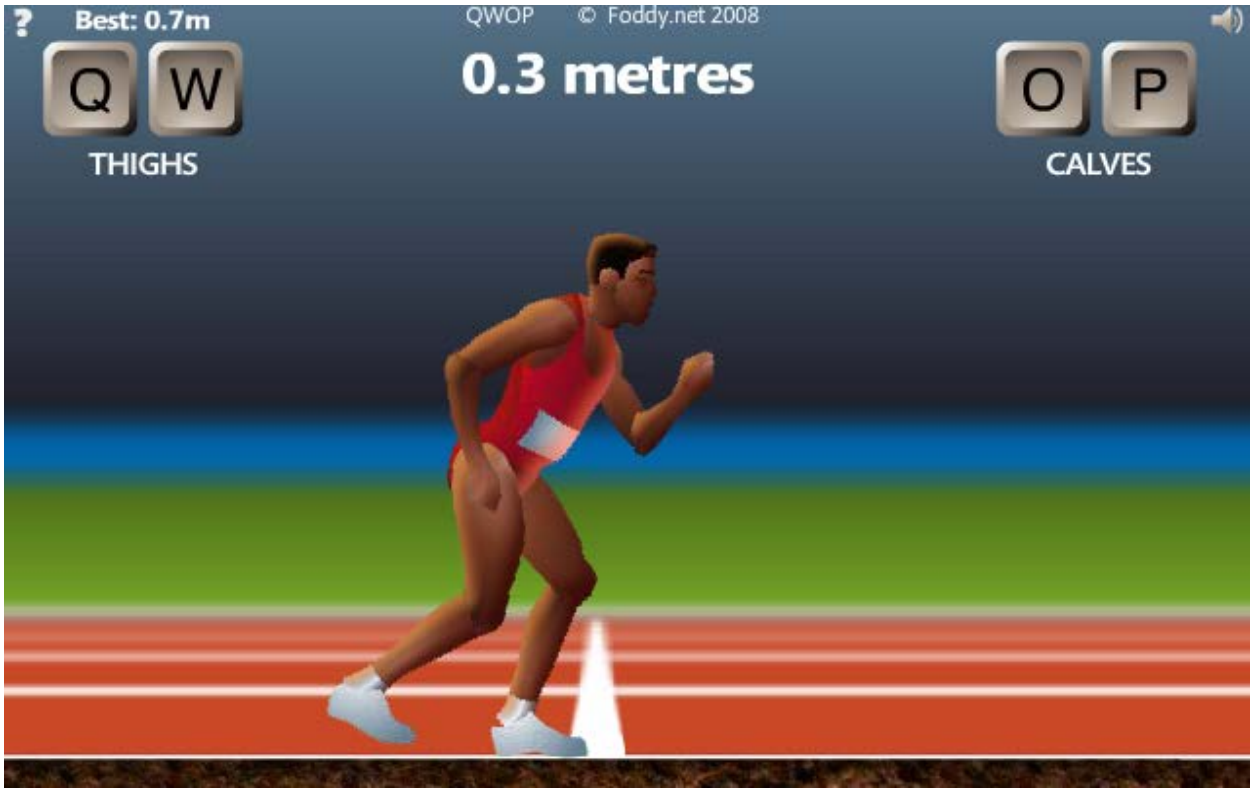

Figure 14 - Bennett Foddy's *QWOP* (2008)

While all games may provide a "chance" for this experience, they do not do so to the same degree, and more importantly, not in the same ways. Finally, whether they do is also determined in part by how the designs of a given game interact with the dynamics of the ludic century. What is left unaddressed in Lantz's formulation of gameplay is critical consideration of

the regulating function of ideas of purpose on the forms of "thinking and doing" involved, which affect the activation and organization of player attention and mediate the "quality of thought," as well as how these ideas are given or shaped by design and gaming practices, including the dominant forms of ludic phronesis. Pedercini's suggestion of a general problem of rationalization emerges precisely because he takes a critical view of the aesthetic quality of problem solving and its dominant forms in *digital* games (not "all games" or "any kind of puzzle"). This approach involves strategic awareness of the dynamics of the ludic century and design tendencies. Thus while Lantz's view adds an aesthetic dimension to the contemporary form of ludosophia, Pedercini's challenges us to seek the critical potential of games as aesthetic experiences, to explore a "new game aesthetic" that counters the problem of rationalization ("Videogames and the Spirit of Capitalism" 2014).

According to Pedercini, the primary task of game designers in the ludic century is not to create new aesthetic forms of instrumental reason, forms that embody the kinds of ludic phronesis that comprise the useful "gaming literacy" Zimmerman identifies. Rather, the task is to strategically resist the tendencies of the computer medium and artfully intervene in mainstream game design and its compulsion for creating instrumentalized aesthetic experiences of "efficiency and control." Pedercini sees Lantz's focus on the activity and logic of problem-solving, or instrumental reasoning, not only as a limiting one, but an historically problematic one as well:

> We are only learning to speak of immeasurable qualities through videogames. It’s a slow and collective process of hacking accounting machines into expressive machines. Computer games need to learn from their non-digital counterparts to be loose interfaces between people. A new game aesthetic has to be explored: one that revels in problem-

> making over problem-solving… Strategies are to be discovered: poetic wrenches have to be thrown in the works; gears and valves have to grow hair, start pulsing and breathing; algorithms must learn to tell stories and scream in pain. ("Videogames and the Spirit of Capitalism " 2014)

There are three ideas in this final poetic comment by Pedercini that give critical insight into the "new game aesthetic" he imagines as a response to the problem of rationalization:

1. Recovery of the concept of expression for games ("accounting machines into expressive machines"). As Brian Upton argues, "we have learned a lot about the syntax of games, but we are still grappling with their semantics" (4). Yet it is not only that we have learned a lot about the "syntax" of games - their forms, systems, patterns, we have also focused our philosophical attention there and located cultural and aesthetic value in theoretical accounts of their syntax abstracted from considerations of expression and meaning. These considerations necessarily involve us in interpretations of semiotic aspects of gameplay and their function in our aesthetic experience of particular games.
2. De-instrumentalization of how digital game designs address player capacity (e.g. become "loose interfaces"). Lost in the apotheosis of "problem-solving" (or "instrumental reasoning") in contemporary ludosophia is the concern for how the player's capacity for this activity is addressed through the poetic strategies of games. For example, the organization of diegetic and non-diegetic information (imagery, sound design, music, haptics), "narrative architectures," "story logics" or modes of "narrativity" (Jenkins 2004; Neitzel 2005), qualities of "virtual sensation" or "game feel" (Swink 2009), systems of rules and quantification and how they are handled in feedback. Poetic strategies in these

areas significantly mediate the modes of thinking and perceiving players engage in gameplay.

3. Catalyzing non-habitual perceptual and imaginative work in gameplay by emphasizing "problem-making" in digital game design. Pedercini identifies mainstream design with the construction of clear "problems" that can be "solved" through ergodic work informed by ludic phronesis (e.g. past experience with genre conventions) and instrumental forms of reasoning and perceiving regulated by understanding the game as system (rather than expression). Problem-making in design foregrounds different modes of thinking and perceiving in gameplay, including the necessarily reflective and attentive work by the player of formulating "the problem" of a particular gameworld or virtual experience themselves. This registers as a Marcusian strategy for games: the new game aesthetic aims at the "emancipation of sensibility, imagination, and reason" (*Aesthetic Dimension* 9) from the regime of "efficiency and control."

These ideas turn out to be keys to understanding various poetics of reflection identified in the examples discussed in the section below as well as those in the final chapter. Pedercini engages these ideas directly in his game *Every Day the Same Dream* (EDTSD), published through his website *molleindustria* in 2009. This game is simultaneously a very simple exemplar of these ideas as well as a critical commentary on the theme of rationalization in contemporary life.

§3.6 | The Aesthetics of Problem-Making in *Every Day the Same Dream*

Every Day the Same Dream is a short game in which the player controls a nameless man through his workday routine working a computer in a cubicle for a nameless company. The ergodic work required to explore the game is minimal: the player can move the man through screens that depict iconic scenes of his workday (waking in the bedroom, riding the elevator, commuting in the car, walking to cubicle, etc,) and interact with a few other characters or objects. The player is only given the title of the game in a brief title screen (Fig.15) and her reading of the imagery and the apparent scenario it suggests in the opening scene. This is one of its aesthetic strategies that becomes more meaningful as the game is explored: the player is constantly confronted with very basic perceptual and interpretive demands that force of habit or cultural convention can easily address.

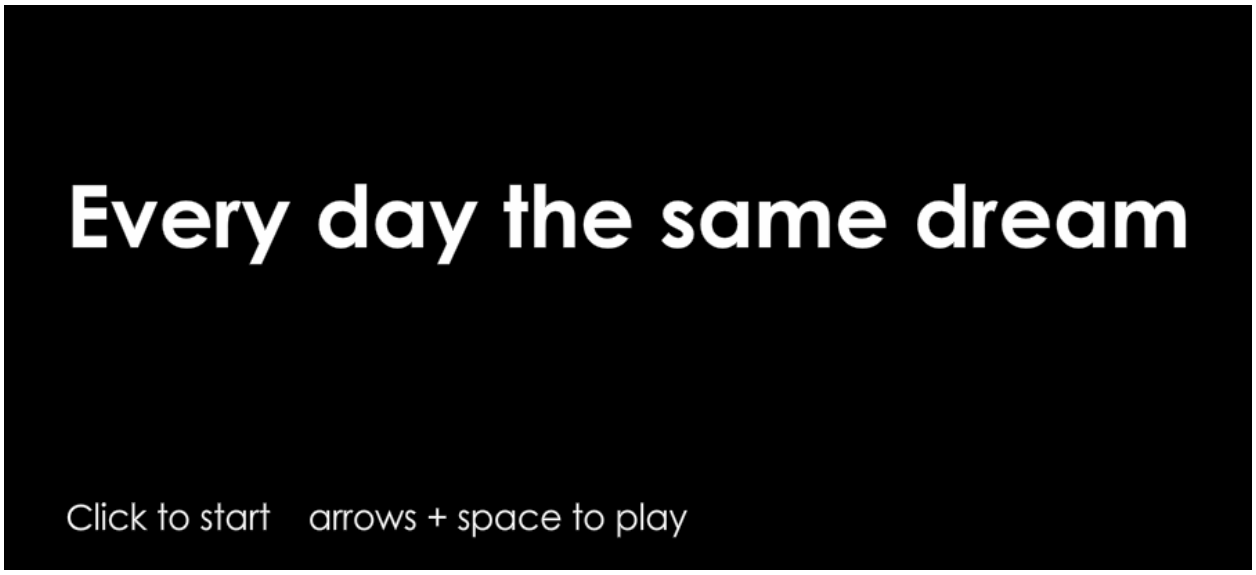

Figure 15 - Title Screen of *Every Day the Same Dream*

For example, in the opening scene it is fairly obvious that the man has just woken up and needs to get dressed (Fig.16). From here, a cascade of habitual moves suggest themselves: get dressed, eat breakfast, exit apartment, walk to car, commute to job, go to your desk and get to work. The game provides minimal non-diegetic information instructing the player on what to do, or whether they are accomplishing anything. There are no points, quests, or game-given objectives to regulate the way players read the game and its purpose beyond their interpretation of the scenarios before them. Furthermore, there are no genre conventions or gaming wisdom that can orient the player attention and activity, standing in for their own habits of play. This is crucial because the game is designed to induce and make use of player habits of action and interpretation, both in relation to gaming practices and the scenarios of the game. If the player does what seems obvious, rational, or conventional, the game never ends: the player can perform these workday actions, and once they get to their desk and sit down the game loops back to the opening scene. There is no element in the game, diegetic or non-diegetic, that indicates that this strategy is wrong, or that progress is not being made. This is the first of two ways to play the game, and the way Pedercini is critiquing in the game.

The second way involves experimentation, resisting the forces of habit, rationalized expectations, and the general mechanistic quality of the modern work life represented in the game. There are several ways for the player to become aware of this second way, but they all involve closer attention and a playful or experimental attitude toward the diegetic world of the game and the situation of the man. For example, if the player decides to explore, walking left upon exiting the apartment building, away from the parking garage, they encounter a homeless man at a crosswalk. If they speak to him, he replies that he can take them to a "quiet place," and takes the man to a cemetery to look out at the gravestones. This event triggers the loop, but

unlike the work routine ending at the cubicle, it cannot be repeated: if you return the next day, the homeless man is gone.

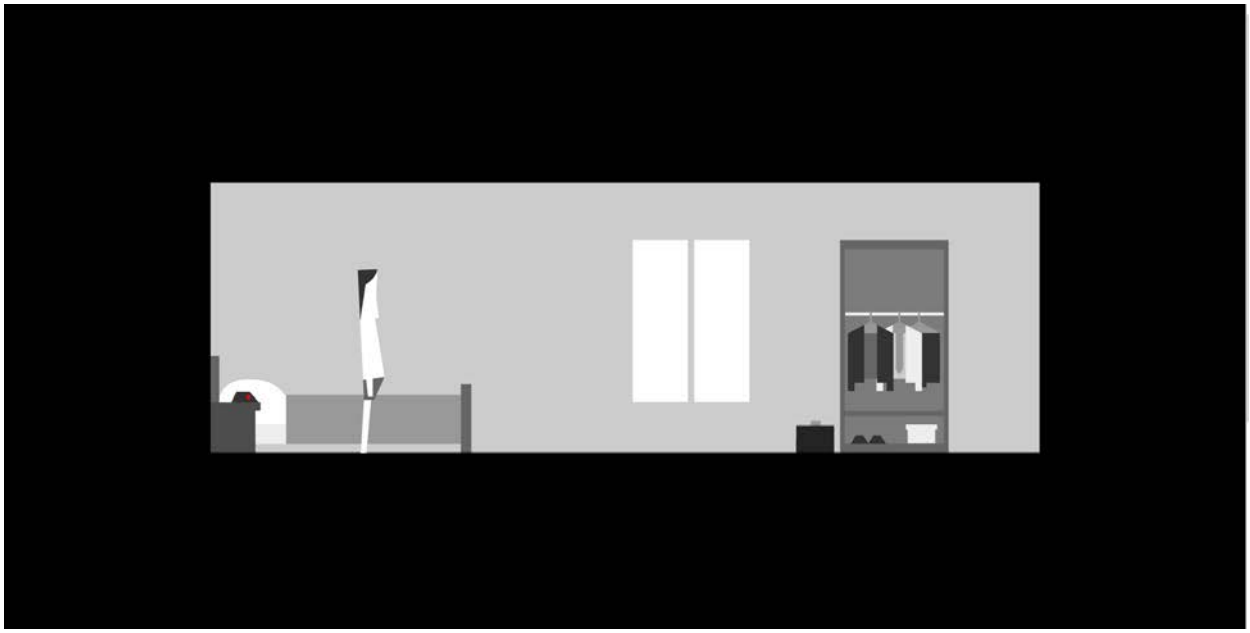

Figure 16 - Starting Scene of *Every Day the Same Dream*

The opening scene. The only color is the blinking red light of an alarm clock. Players must read the scene to orient themselves in the game in the absence of instructions.

There are other ways to stumble upon change in the game, changes that suggest a new play strategy, but there is one action that affirms it by recording your progress. If the player speaks to the old woman in the apartment elevator she will cryptically say "5 more steps until you will be a new person" (Fig.17). She will modify her comment as the player stumbles upon and enacts the five ways, all involving experiment, attention, and reflection on the diegetic world. As the player explores the game through this second play strategy the old woman will comment on your progress. This suggests a contrasting theme to work: "becoming a new person," and as play develops the two ways of playing also take on philosophical meaning as two thematic paths in everyday life:

1. The Habitual Path, which is one of sameness, repetition, safety, productivity, or *being* (what *is*), of things as they are.
2. The Poetic Path, which is one of perceptive living, of experiment, wonder, of change and *becoming* (what is *possible*).

The first path is an endless loop. You stay the same. As a player you merge with the machine and the "game"; you are reduced to an alienated *operator*, habitually providing the input that keeps everything the same. The second path can only be stumbled upon and followed if you apply effortful attention, experiment and deviate from the codified expectations of what seems to be the purpose of the game world (to go to work and earn a living), by talking to the old woman, or attending to some aspect of life unrelated to the first path:

Figure 17 - Becoming a New Person in *Every Day the Same Dream*

The "elevator lady" who functions as the memory of player progress across the days.

1. Stopping to delight in nature by patiently watching and catching a falling leaf.
2. Sharing a quiet, human moment with a homeless man in a nearby cemetery.
3. Playfully and comically going to work in your underwear and getting fired.
4. Stopping traffic to appreciate animal life by petting a cow at the side of the road.
5. Affirming your will to escape the banality of your job by jumping from the balcony of your workplace (presumably to your death).

These experiences in the second path consists of symbolic "steps to becoming a new person," each suggestive of humanistic themes: perceiving simple beauty, confronting mortality, embracing whimsy, community with nature, desire for agency. Enacting these steps leads to a final day in which everyone is gone, suggesting the dream status of the experience referenced in the title. In the final day of exploration the player eventually makes their way back to the balcony to witness another person jump, just as the player had done previously (Fig.18).

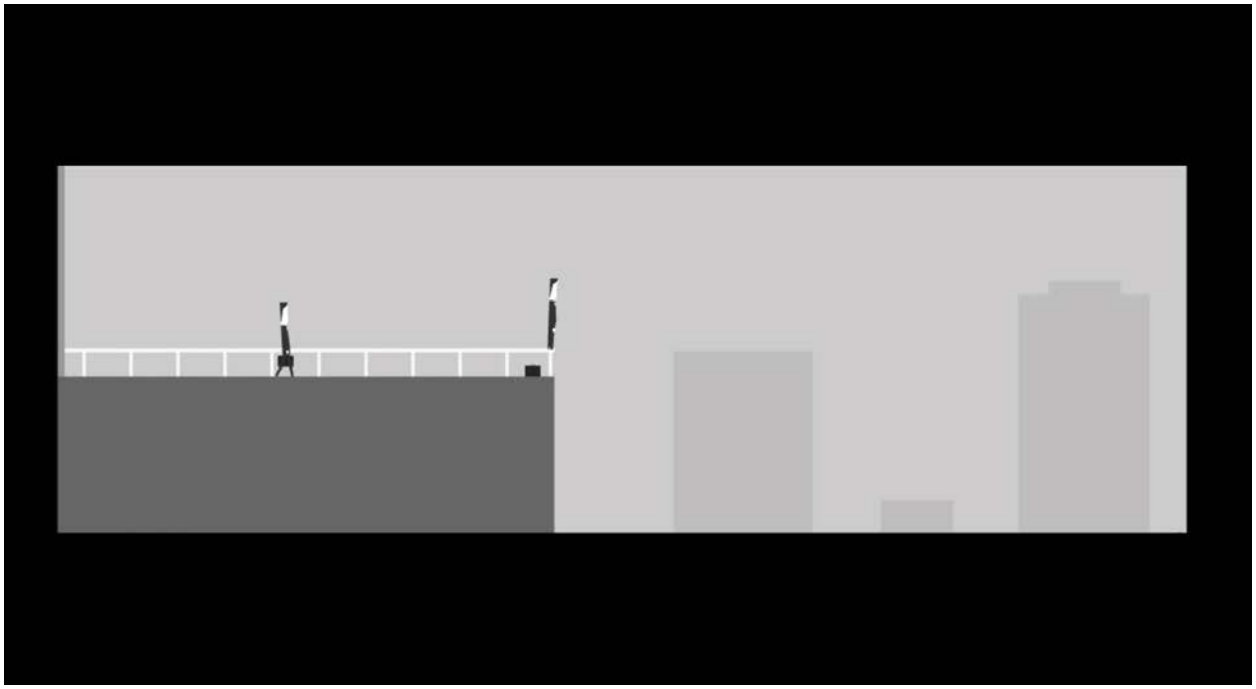

Figure 18 - The Final Scene in *Every Day the Same Dream*

In the final scene of the game the player witnesses another figure jump from the balcony as they had in a previous day.

The strategy of the art style and the sameness of the human avatars across the workers becomes meaningful in a new way in this final scene, in which the jumping figure can be simultaneously understood as both the player and "everyone." However, the stronger interpretation is that this is a scene of witnessing the "death" of the player as they were at the start of the game. Given that the dream world is empty of others, the focus is placed on the player: they have "changed," since what has constituted the "new" person that the player has symbolically become - that which marks them off from the figure that jumps - is their enacting of the second path. Thus this image can be read as a figure of self-reflection or self-seeing, with the game prompting the player-as-witness to reflect on the player-as-jumper, which is emblematic of their own past. This infuses this final scene with meaning beyond the diegetic world created by the game, prompting further reflection on the aesthetic experience from the perspective of

gaming as a habitual activity. The aesthetic experience of following these two paths and the feeling of their contrast render the player's own habitual orientation toward gameplay and the diegetic scenarios represented in the gameworld both perceivable and, consequently, an object of player reflection.

The aesthetic strategy of *EDTSD* is not streamlined for instrumental problem-solving and the pleasures of overcoming ergodic or mechanical challenges. Although the game may be "fun" to some, its design is not oriented by ideas of conventional pleasures of digital gameplay but rather expressive and philosophical ones. The kind of "instrumental reasoning" Lantz imagines is strategically minimized here, or at least channeled into a different register of reasoning about "puzzles" of meaning and feeling that cannot be "solved," finally, by any understanding of the game as a system of rules and actions. There is no real solution in *EDTSD*, only the making of "problems" for thought and perception. This is one hallmark of the poetics of reflection explored in the examples discussed in the final chapter; their designs organize gameplay experiences that emphasize what Immanuel Kant refers to as "reflecting judgment" [*reflektierende Urteilskraft*] (Kant 15; 26), which is a mode of thinking not informed by definite concepts of the object or its purposes.

It is also important to note that ludic phronesis accrued in mainstream gaming does not make this game easier; it is not a resource for the player in *EDTSD*, and to the extent that their sense of fun and pleasure derive from exercising this wisdom in practice, it is the source of frustration in play. There are other simple designs in the game that together interact with the assumed habits and expectations of contemporary gaming in a critical way. For example, the game also includes non-functional elements that create aesthetic experiences, opportunities for player expression, and meanings that do not directly relate to changes in control, progress, or

solutions to problems in the game. The player can turn off the alarm clock and TV, and speak to the man's wife, yet these do not have any function in progression. In most games there is an expectation that if interaction is present there is a specific goal-related, system-changing purpose for it beyond the aesthetic experience it affords or the symbolism it may hold. Interacting with these elements is an aspect of the game experience outside the logic of "efficiency and control."

Another example is the rewarding (or imposition) of waiting and attentive perception. As previously argued, "actionism" pervades habitual approaches to computer games and the game experience (Ch.1.2), and the pervasive ergodicity of the contemporary media ecology constantly indulges our natural "zeal for doing" (Ch.2.4). *EDTSD* includes aesthetic designs that seek to counter or subvert the influence of these dynamics. One interesting mechanic involves the solitary leaf dangling from a tree along the path on the way to work. If the player is rushing to the next imagined objective they will likely pass by the leaf before it can be interacted with. The leaf is colorized, drawing player attention from the grayscale backdrop, yet they have to be willing to wait for the wind animation to begin and attentive enough to perceive the effects. The leaf rustles and eventually falls, enabling the player to catch it and admire it in their hand (Fig.19).

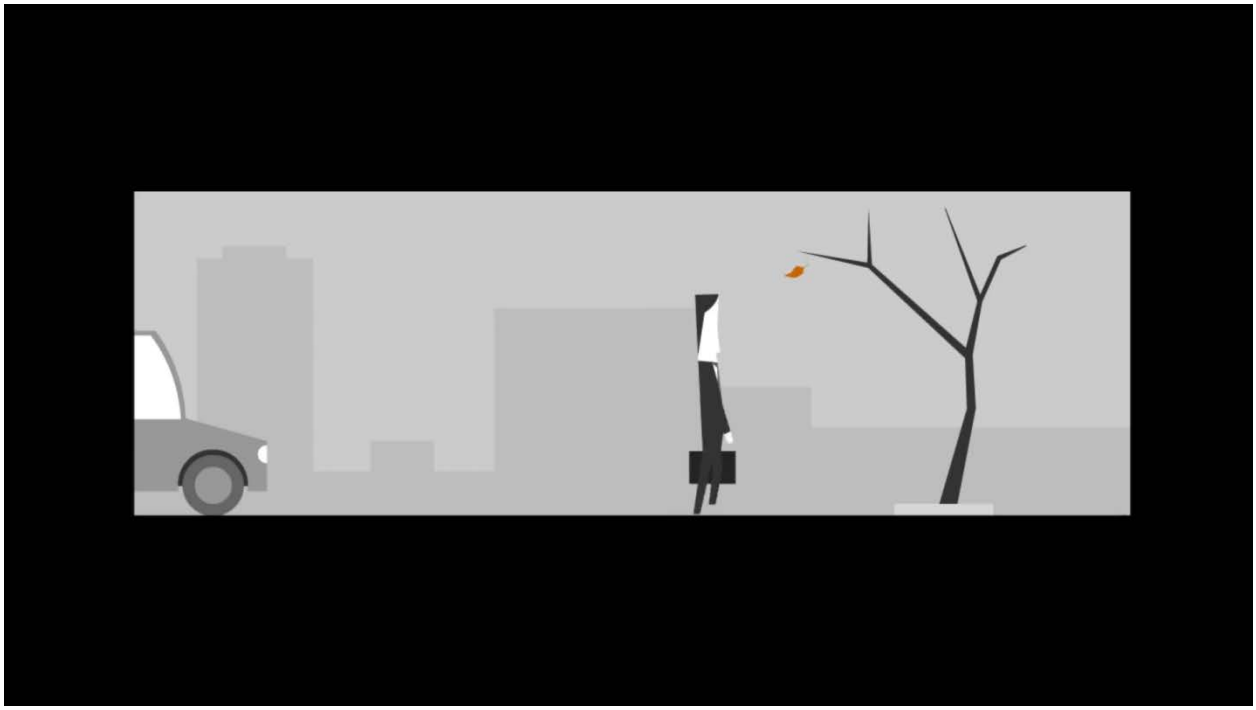

Figure 19 - Admiring Nature in *Every Day the Same Dream*
The player has to wait and observe the leaf for about 5 seconds before it falls.

This aesthetic strategy is explored in more detail in Ian Bogost's game for the Atari 2600, *A Slow Year* (2010), which is comprised of four minigames based on the seasons. Each game emphasizes the activity of perceiving, of observation and aesthetic appreciation - to subordinate ergodic action to reflection. For example, in the winter season minigame the player can take sips of a hot drink while looking out the window, but the only way to see the sunrise is to make it last: if you drink it too fast the scene ends (Fig.20).

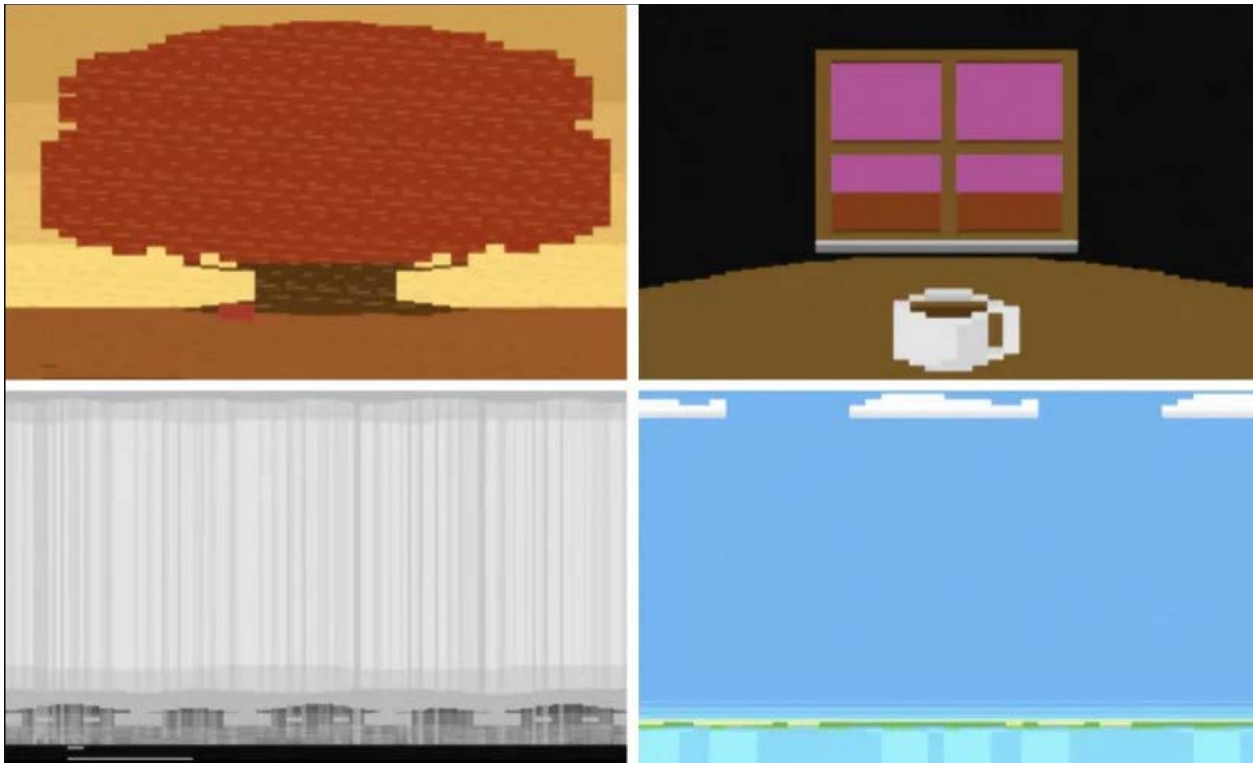

Figure 20 - Screens from Ian Bogost's *A Slow Year*

Screens of the four minigames arranged in a grid. Autumn (top left) in which the player tries to catch a falling leaf in the wind; Winter (top right) in which the player must make a hot drink last while watching the sunrise; Spring (bottom left) in which the player must react to the thunderclap after lightning strikes in a storm; Summer (bottom right) in which the player must doze off while watching twigs float by in a stream.

Dominant game designs often instrumentalize perception and action, narrowing their focus and encouraging an economy of gameplay that frames slowness (in thought or action) as waste, and expressive interaction as ancillary or merely ornamental. It is important to note that the problem of rationalization affects noematic *and* extranoematic aspects of gameplay. As Pedercini notes:

> Skill-based videogames such as single player arcade, platformers or first person shooters, rarely leave room for creative or expressive play and demand efficiency of movements within clockwork environments. The phenomenon of speedruns (the recording of sessions performed as fast and flawlessly as possible) is the extreme response to this

> demand: the enthusiastic fruition of game spaces according to Taylorist principles. ("Videogames" 2014)

Games like *EDTSD* and *A Slow Year* make have aesthetic strategies that value moments of slowness and productive passivity, often penalizing hyper focus on problem-solving at the expense of perceiving things (e.g. noticing subtle details of sound, imagery, movement) in the gameworld and reflecting on their significance (e.g. making inferences and synthesizing diegetic information; Fig.21-22).

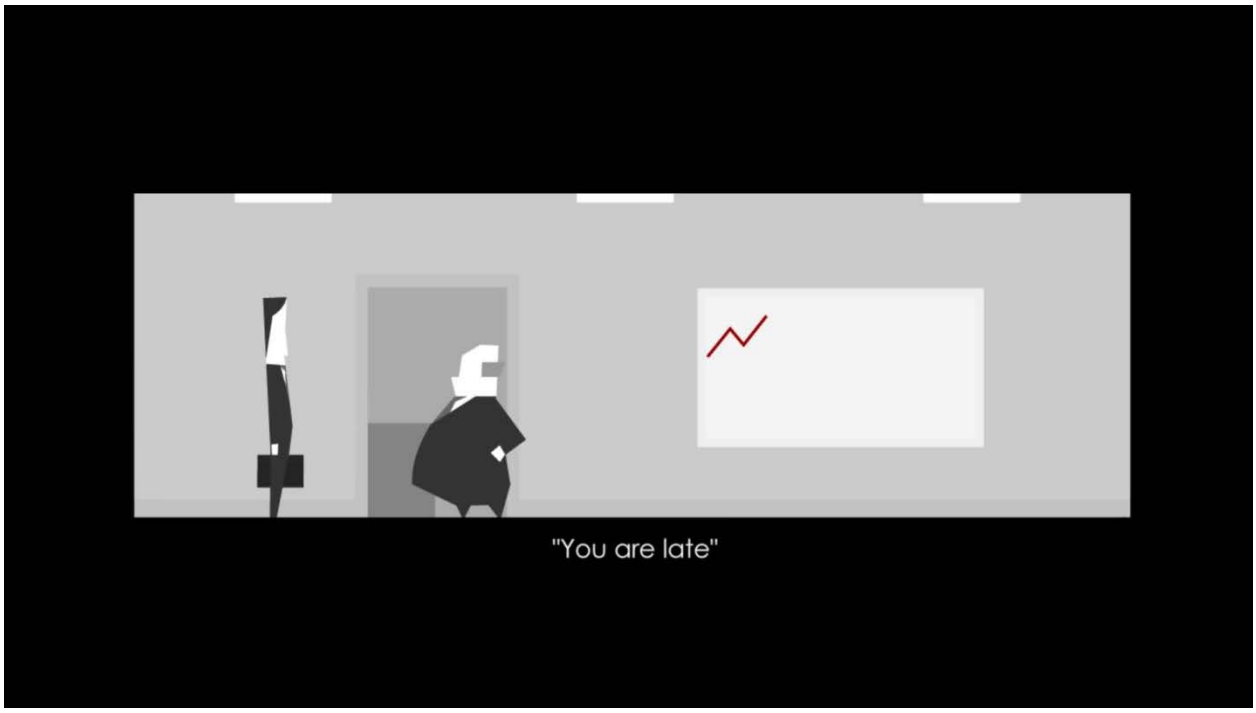

Figure 21 - The Company Chart in *Every Day the Same Dream*
In the entryway to the office the player may notice a chart trending up.

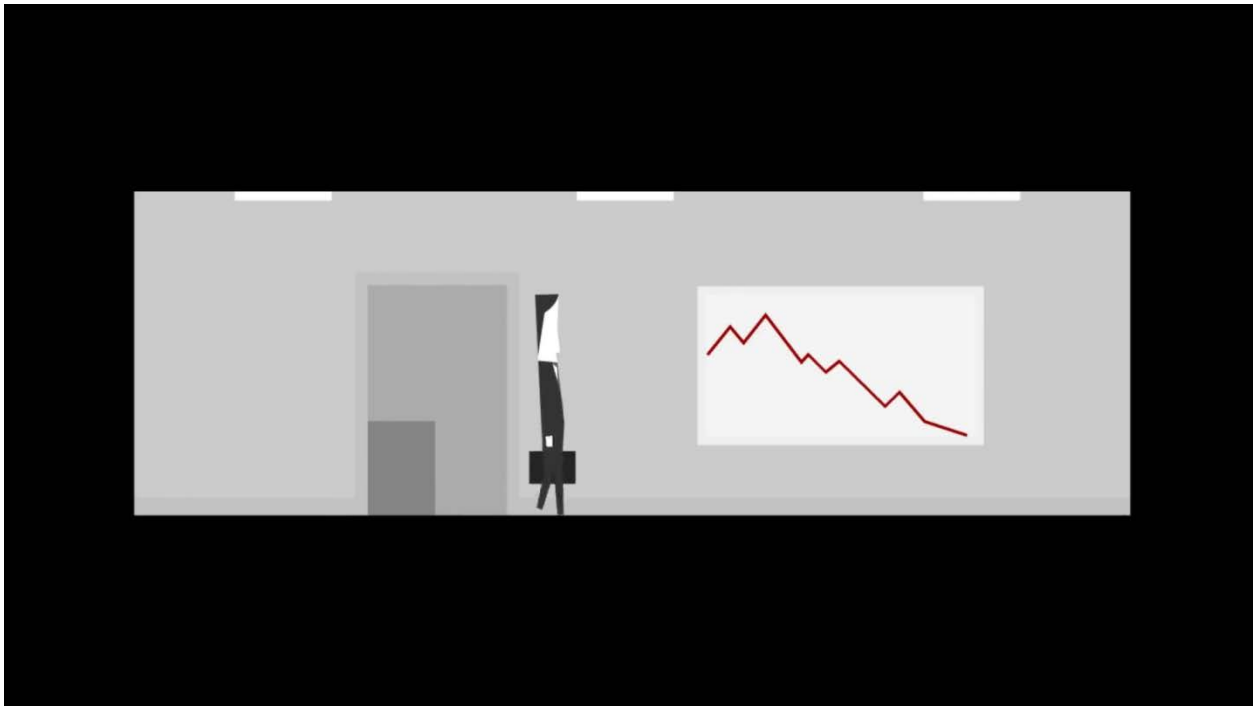

Figure 22 - Personhood and Profits in *Every Day the Same Dream*
As the player pursues becoming a new person the trend of the chart changes, suggesting a conflict between this pursuit and company profits.

These strategies not only address the "need to create emotional distance and inject paradoxical and un-formalized elements into games to counter the cybernetic bias of computing machines" (Pedercini 2017), they counter the popular aesthetics of rationalization in games and the forms of ludic phronesis it generates by rewarding an attention economy of reflective activity. The common "demand for efficiency of movement" is almost always minimized or compartmentalized, not only to allow for a reflective temporality to emerge within the aesthetic experience of the game, but also because such demands result in a closing of the "emotional distance" Pedercini identifies, resulting in increased automation of play, transforming thought into habit.

§3.7 | Critical Developments of the Ludic Century and the Experimentalist Model

Pedercini's aesthetic of "problem-making" in *EDTSD* is an important supplement to the major critical developments of the ludic century that also seek to critically intervene in contemporary game culture. His strategy not only challenges Zimmerman's optimism about the function and value of gaming literacy (and contemporary ludosophia) by attending to the logic of specific designs and the aesthetic, experiential quality of gameplay, it is also a needful addition to the existing "serious" design strategies of the gameful world (Fig.12) and the diversification of gamemaking culture by the ongoing "indie revolution." These are the two most important critical developments in the ludic century that are productively expanding the scope and quality of the "gaming literacy" developed in contemporary gaming.

First, the explosion of independent gamemaking has finally started to address problems of diversity in gamemaking as younger generations are inspired to see videogames not only as entertainment media made by professionals, but as an artform for expression open to anyone.[127] As Anna Anthropy argues, contemporary game culture is also marked by the "rise of the videogame zinesters" (2012), a generational, democratizing dynamic that has the potential to counter the lack diversity on the design and production side of digital games. This is due in large part to what we might identify as a "Gutenberg Revolution" in videogames (Schenold 2013), facilitated by the increased availability and accessibility of gamemaking software and digital platforms for sharing game media, art assets, design techniques, and organizing collaboration.[128] As Anthropy notes, the technical barriers to gamemaking have been lowered and the economic

[127] The category of "indie games" has become fraught as the label has taken on different meanings and value in different contexts and communities. For excellent scholarly work on this topic see Felan Parker's "Indie Game Studies Year Eleven" (2014), and continuing study at the Indie Interfaces project <www.indieinterfaces.com>.

[128] These are the "metamediums" of the softwarization process of digital games discussed in §1 above.

barriers to publishing and distribution eased, and this is bringing new people into gamemaking, including many groups that have been excluded or marginalized by the videogame industry. This change in the culture of gamemaking is having a positive effect on representation within games as well, diversifying the subject matter, characters, and narratives, opening up the expressive range of digital games.

Second, and perhaps more visibly, the growth of the various "games for X" movements,[129] and "games for change" (G4C) in particular, has channeled the enthusiasm and leveraged the design thinking of digital games to address social problems and human needs in various domains. The annual Games for Change Festival and its parent organization have grown steadily since their founding in 2004, and interest in making games to facilitate "real-world change" has continued unabated, with increasing support from industry, governments, and academic institutions. One emblematic figure of this movement is Jane McGonigal, whose viral 2010 TED Talk "Gaming Can Make a Better World" brought mainstream attention to the idea that gaming should (and can) be used to solve problems in the real world, especially given the popularity and pervasiveness of gaming. McGonigal and many others working in this field share Lantz's focus on problem-solving, arguing that while digital games are already virtual training for problem-solving, we need to design new games that translate our gaming activity into solving real problems instead of virtual ones (2010).

These two critical developments of the ludic century have generated a spirit of exploration in digital game design and represent an expansion of the ludic imagination that is not

[129] The major movements include: *games for education or learning*, which has a long history going back to *Oregon Trail* (1971) but has become more organized and institutional; *games for change*, a more recent movement emphasizing the creation of games and the use of game design techniques to facilitate political and cultural changes; *games for health*, which focuses on the study and creation of games that promote well-being or have therapeutic or rehabilitation value; *games for science*, which focuses on leveraging gameplay for the discovery and production of new scientific knowledge.

only healthy, but necessary. However, neither of these adequately address the problem of rationalization that Pedercini identifies, and in the case of the G4C movement and the "serious" design strategies of the gameful world, they may amplify and reify it. Understanding how these developments relate to Pedercini's aesthetic strategy of problem-making will provide the context for recognizing its importance in the ludic century and indentifying its fundamental investment in a particular mode of aesthetic reflection that counters the problem of rationalization: musement (Ch.4.1).

In the case of the indie revolution, understood as Anthropy frames it through the concept of the "zinester," the critical effects in the domain of design have been uneven and indirect. Beyond the diversification and inclusivity effects mentioned above, which are necessary *conditions* of critical change, the primary critical contribution of this development has been to cultivate auteurist approaches to gamemaking that have lead to a wider exploration of the expressive potentials of game media.[130] While some independent game designers subvert narrative and interactive design tropes of mainstream games by focusing on new subjects and experiences or experimenting with genre conventions and boundaries, many often conform to the model of games Pedercini identifies with the problem of rationalization. Furthermore, because the indie revolution is an ongoing and heterogeneous phenomena with no unifying principles or coherent design strategy (Parker 2014), any critical or strategic relation to the problem of rationalization must be located in the poetics of particular games rather than in any concept of "indie" or general faith in the emergent dynamics of this phenomenon.

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[130] In *How to Do Things with Videogames* Ian Bogost develops an argument about the strong concept of authorship that is associated with the subset of indie games identified as "artgames." Although his argument is about developing conceptions of art movements within games, such as "proceduralism," in order to enhance our focus on poetics and improve criticism and our discussion of games, his commentary on authorship in gamemaking also applies to the ethos of indie design generally. See "Art" (9-17).

In the case of G4C and "serious" strategies of the gameful world, while there is a direct critical relation to mainstream digital games, the problem of rationalization is often amplified as design emphasis shifts from imagining games-as-experience to games-as-means. As with the indie revolution, the G4C movement is complex and design strategies vary, yet its coherent spirit serves a more direct critical function in the ludic century by encouraging the subordination of entertainment goals in the design process (and gamemaking generally) to ethical, political, and philosophical goals that have a more explicit, sometimes instrumental relationship to everyday life. G4C examples like the canonical *World Without Oil* (2007), an alternate reality game that simulates a global oil crisis, target pre-defined social and political problems and create game experiences that channel player thinking and activity toward imagined solutions (or politicized, usually progressive, "solution spaces"). Other examples such as *Never Alone* / *Kisima Inŋitchuŋa* (2014) and *Walden, A Game* (2017) do not target given political problems but instead engage with history and cultural experience, seeking to facilitate education on a subject or communicate specific cultural knowledge in videogame form.

The two design strategies noted in these examples serve as two key points on an implicit continuum of strategies associated with "games for change" that can be used as a tool for reflection. The dominant approach in G4C is based on what we might refer to as the "activist model" (Fig.23, left), with representative games designed to function as tools for solving a given problem or need in the world. This model is also the emblematic one, not only because its strategies interpret the motto-moniker "games for (social) change" most literally, but also because its focus on *recognized* problems easily captures the popular and institutional (educational, philanthropic, corporate) imaginations with its appeal to practicalism and conventional notions of "seriousness" that hew very closely to the lively politics of the present.

Games on this end of the continuum have minimal or no strategic relation to the present dynamics of the ludic century, often conforming to industry "best practices" and using popular design techniques and resources, heavily informed by research on the chosen subject matter. At a very general level the logic of the activist model mirrors that of the mainstream model, swapping design for entertainment outcomes (or, in some cases, behaviorist designs for optimized for attention capture and microtransactions) for social and political impact. However, the problem of rationalization has the potential to be amplified in this approach, since the experience of rationalization within gameplay may also resonate with the general instrumentalization of the play activity itself.

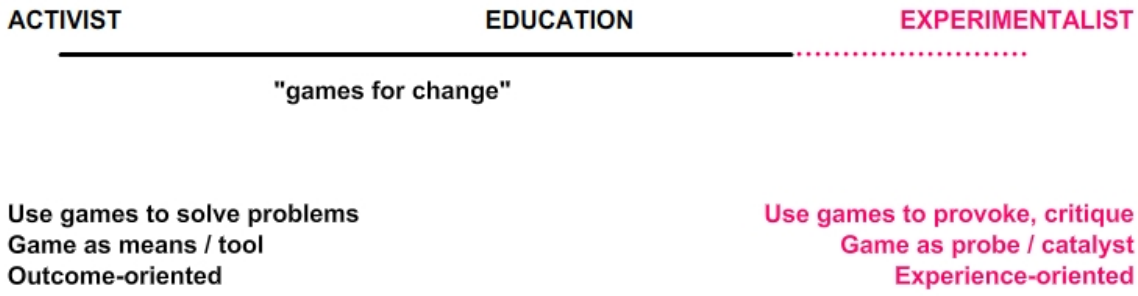

Figure 23 - A Continuum of Design Strategies

The activist and education models comprise the standard view of "games for change," while the experimentalist model represents an unrecognized strategy.

Variants of games for change that take a less instrumental approach in design are expressions of an "education model" (Fig.23, center range), often focusing on exploration of an

issue or topic, or rendering playable something that is of general public interest for the purposes of facilitating learning, discussion, empathy, and understanding. In contrast to "games for health" (therapy games, exergames, etc.) and training games, design strategies of this model are often regulated by expressive goals and foreground narrative and experiential qualities in gameplay over studied effectiveness and measurable outcomes external to the experience. Subject matter in these games is recognized as "serious" without much interpretation, analogical reasoning, or translation work on the part of the player, marking them off from many mainstream games that involve fantastical or highly speculative worlds, physics, mythologies, and scenarios. Although these games generally conform to the popular aesthetics of rationalization, this model often includes design strategies that encourage and facilitate non-instrumental reflective activity in gameplay, especially in games that emphasize aesthetic experiences of exploration, discovery, and expansion of player understanding or perspective. The games I discuss in the final chapter as exemplifying a poetics of reflection may be considered more creative and potent experiments of this model, unhindered by the regulative ideas of *apparent* "seriousness," and more strategic about the dynamics of the ludic century and the problem of rationalization.

In "Making Games in a Fucked Up World" Pedercini questions the effectiveness of what I have called the activist model, arguing that approaching games as "general purpose instruments" for social change skips over the critical work of strategizing about how best to address a specific problem or create a specific change in the world in given conditions. Furthermore, the emphasis on "measurable" change in G4C syncs up with the contemporary obsession with data and quantification (Pedercini), further incentivizing rationalization in design. These and other observations lead him to argue for a different approach to G4C focused more on gamemaking rather than instrumentalizing gameplay, embracing a more experimental attitude

toward "social impact," and broadening our interpretations of the functions and efficacy of digital games as tools of cultural change.[131]

Pedercini's observations form the basis for what I will call the "experimentalist model" (Fig.23, right), and although he emphasizes the turn to gamemaking in his argument, his remarks have implications for digital game design which can be integrated with his argument for a "new game aesthetic" and the aesthetics of problem-making exemplified by *EDTSD*:

> There are different stages of social engagement, and we need different approaches. I'm interested in the pre-political phase. Maybe the "message" of a game is doomed to be lost in the extreme ambiguity of interactive artifacts. Maybe the "impact" on players is lost in a tangled web of influences, experiences, and biases. But one thing I can tell for sure: the act of making games about social issues has always been a profound transformative experience for me. I came to the conclusion that there is a greater liberation potential in designing games rather than playing games. I argue that the next step of games for impact doesn't lie in some technological advancement but rather, in helping people to engage with the practice of game design. ("Making Games in a Fucked Up World")

Pedercini looks to the gamemaking *experience* because it is process rather than results-oriented, incorporating engagement in research and reflection on the subject matter, and critical thought about both design and gameplay as an *experience* (a non-actionist perspective, Ch.1.3). He also notes that by de-institutionalizing and "democratizing" game design you remove the influence of

[131] Ian Bogost made a related argument in his keynote address to the Games for Change Festival the previous year (2013), arguing that "serious games" and G4C have become institutionalized, opportunistic, and ineffective. He proposes a new orienting idea, "earnest games," which emphasizes the passion and sincerity of the creators to make a *game*, and for that game to reflect their heartfelt interest and to communicate the depth of their knowledge and insight into their chosen subject matter.

"big funders" and avoid the "typical fallacies of the white savior industrial complex, like the misrepresentation and objectification of others" ("Making Games in a Fucked Up World").[132]

Pedercini recognizes first that digital games are most fruitfully engaged broadly as a medium of experience and expression rather than narrowly as a social or amusement technology, and this is most evident and potent in the process of creating and critically interpreting them. Second, that a focus on "the pre-political phase" of engagement in game design logically follows from criticism of the problem of rationalization in both mainstream commercial games and G4C. This is because design strategies that attempt "to impose prepackaged behavior protocols rather than facilitate critical thought" (Pedercini "Making Games in a Fucked Up World") end up producing "games without play" (Kopas 2014). In the activist model the forms of perception, judgment, and action in gameplay are heavily proceduralized and regulated by given political concepts (of the problems and solutions, their apparent context, shape and moral coding, etc.), filtering, crowding out, or marginalizing aesthetic forms of reflection from the manifold activity of play. Conversely, the "experimentalist" model targets the "pre-political phase" in design, focusing on generating a critical appreciation and understanding of some aspect of the world, rendering intelligible - and hence, discussible - its philosophical, political, or ethical dimensions for the player.

One major implication of Pedercini's view is that digital games are better suited for catalyzing thought and producing affect, interests, and discussion than for directing and facilitating activism or effecting social change directly. This would seem to disqualify *Every Day the Same Dream* as a "game for change" by the popular definition, yet Ian Bogost has pointed out the oddity of making such a judgment at all, noting that "It is actually a little weird to talk

[132] This connects Pedercini's G4C strategy directly to the other critical development of the growth of the "indie revolution" as defined by Anthropy (2012).

about using games for social change or for seriousness in the abstract when we don't talk about other media that way. We don't talk about books, or film, or macramé, or whatever [in this way] - we just assume that it is possible and we just do it" (G4C13 Keynote 2013). All media experiences change us, and by extension create social change at the point of the individual. Pedercini's approach highlights the marginalization of thinking about less controllable and measurable change targeted in games like *EDTSD*, since such change is grounded in the quality of potential aesthetic experiences with games and their influence on the feelings, thoughts, and perceptions of players rather than what they do or report.

Furthermore, in the context of what Jaron Lanier refers to as the rise of "behavior manipulation empires" online and the spread of persuasive technologies and behaviorist designs in the contemporary media ecology, Pedercini's argument that videogames must be "loose interfaces between people" serves a critical, subversive function beyond the domain of digital games. Games of the experimentalist model actively seek to create "space" for reflective modes of thought and non-instrumental perception in their designs, strategically disrupting or "slowing" habitual, protocological, and strictly purposive modes of gameplay. These design strategies are not exclusive to G4C but rather part of a more general poetics of reflection observable in many commercial videogames intended primarily for entertainment as well. However, in the specific context of the discourse on games for change they represent an alternative or supplemental model of addressing social change with videogames grounded in a broad *faith* in the transformative potential of artworks as mediums of experience. Where the activist model involves a strategic focus on measurable outcomes codified by an existing discourse of problems and solutions, the experimentalist model has a humbler and riskier tactical focus on creating

strategic aesthetic experiences within gameplay that function as critical probes, occasions for insight, and raw material for further reflective activity and exploration in other contexts.

As with the aesthetics of problem-making in *EDTSD*, at the heart of the experimentalist model suggested by Pedercini's rethinking of G4C is a belief in the fundamental critical value of the aesthetic mode of experience Peirce identifies as musement. As I will argue in the final chapter, the idea of musement, as well as its character as an experience in gameplay, are integral to the poetics of reflection developed by all the games discussed there, each strategically seeking to catalyze experiences of musement in order to modulate gameplay for various aesthetic and expressive goals: to slow play down, to prompt exploration, to generate reflective reasoning, affect deep attention, subvert habitual forms of ludic phronesis, and so on. Although these games and their design strategies do not constitute an coherent movement, they suggest a common logic and exemplify the poetics of a potential third critical "development" in the ludic century, unrecognized and underexplored, addressing its aesthetic dimension.

While the ongoing indie revolution and games for change movement address longstanding problems of diversity and actively expand the scope of the ludic imagination, neither development relates critically to the dynamics of the ludic century (§1-4) and the problem of rationalization (§5-6) which demand a critical philosophical engagement with the basic conditions of mediation in digital games – the aesthetic experiences shaped by their designs. As noted, we are beginning to expand and diversify *who* makes games (though we still have a long way to go), what *subjects* they can address, the *contexts* in which they are played, and the *purposes* for which they are made. Together these advancements constitute a countervailing force to mainstream videogame culture that is not only important, but in my view absolutely necessary. However, these critical advancements remain insufficient, since in taking seriously

the general problem of speed in the contemporary media ecology (Ch.2.3) and the problem of rationalization in the domain of digital games explored above we also acknowledge, following Pedercini, the need for a critical approach to *aesthetics* and the active cultivation of the experimental model.

In light of this, in the final chapter I turn to Charles Sanders Peirce's conception of "musement," a unique mode of aesthetic reflection that constitutes the necessary ground for developing a "new game aesthetic" that actively counters the dominant aesthetics of "efficiency and control" in the ludic century. The reasons for countering them, or at least counter-balancing them, are legion. While Pedercini and Wark emphasize the connection to contemporary capitalism (neoliberal ideology, consumerism, etc.), I have emphasized the connections to digital culture: anti-reflection dynamics of the CME, the attention economy, the general problem of speed (Ch.2), and the dynamics of the ludic century (§2-4). This emphasis does have political and economic dimensions to be sure, including implications for the health of deliberative democracy in the digital age. In either case, the influence of digital games in the aggregate - the logic and ethics of their designs as well as the forms of ludic phronesis they generate in gameplay - will no doubt have an outsized effect on the cultural and technical systems of the ludic century we are in the process of creating.

Chapter 4:
Musement and the Aesthetics of Slowness in Digital Games

> Art is the means we have of undoing the damage of haste. It's what everything else isn't.[133]
>
> - Theodore Roethke

> We humans are geniuses at confusing ourselves by using computers.[134]
>
> - Jaron Lanier

In the previous chapter I explored the historical and philosophical significance of Eric Zimmerman's formulation of the "ludic century," a view of the twenty-first century that identifies games as its emblematic cultural form and the source of a generalized "gaming literacy" integral to understanding and creating in the contemporary world. I then developed a critical perspective on the ludic century, arguing that our understanding and valuation of this gaming literacy must be informed by a critical account of the unacknowledged forces and conditions that actively shape it, as well as the nature of the congruity of digital gameplay and design with the contemporary sociotechnical conditions on which it is based. After a critical survey of several problematic dynamics of the ludic century I identified the general disregard for its aesthetic aspects as the central issue since the abstraction from the details of contemporary gaming experiences conceals a general *problem of rationalization* in the field of digital games. I then turned to Paolo Pedercini's argument that videogames are the "aesthetic form of rationalization,"

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[133] *On Poetry and Craft,* 2001.

[134] "High Tech Peace Will Need A New Kind Of Humanism," Peace Prize of the German Book Trade acceptance speech, 2014.

extending his critique of dominant game designs and translating its insights into resources for understanding the poetics of reflection in digital games. Through a close reading of *Every Day the Same Dream* I identified its aesthetic strategy of problem-making as an illustrative example of design for reflection that strategically counters the dominant aesthetics of rationalization in digital games. Finally, having developed the significance of the aesthetics of problem-making in the context of the problem of rationalization in digital games I argued that Pedercini's aesthetic strategy is a crucial supplement to other critical developments of the ludic century.

In this final chapter I develop a more technical view of the poetics of reflection through close readings of critical exemplars, identifying their design for the experience of *musement* as the sine qua non of such a poetics in the domain of digital games in light of the problem of rationalization, and their development of an *aesthetics of slowness* as the critical response to the general problem of speed in the contemporary media ecology and its consequences for the development of aesthetic experience.

§4.1 | Introduction: Musement as Counter to the Problem of Rationalization

The philosopher Charles Sanders Peirce identifies a special form of aesthetic reflection which he calls *musement* in his late essay "Neglected Argument for the Reality of God." Although Peirce does address theology and the topic indicated in the title, he is primarily concerned with forms of reasoning and the advancement of knowledge through inquiry. While his argument for the reality of God is irrelevant here, it grows out of Peirce's account of the experience of musement and related insights into the integral connections between aesthetics,

reasoning, and inquiry. These provide an excellent philosophical resource for appreciating the aesthetic strategies of videogames that engage in the poetics of reflection.

Peirce develops the idea of musement through a series of descriptions that highlight its most significant qualities as an experience. In the initial description he foregrounds its relation to the idea of play:

> There is a certain agreeable occupation of mind which, from its having no distinctive name, I infer is not as commonly practiced as it deserves to be; for indulged in moderately -- say through some five to six per cent of one's waking time, perhaps during a stroll -- it is refreshing enough more than to repay the expenditure. Because it involves no purpose save that of casting aside all serious purpose, I have sometimes been half-inclined to call it reverie with some qualification; but for a frame of mind so antipodal to vacancy and dreaminess such a designation would be too excruciating a misfit. In fact, it is Pure Play. Now, Play, we all know, is a lively exercise of one's powers. Pure Play has no rules, except this very law of liberty. It bloweth where it listeth. It has no purpose, unless recreation. The particular occupation I mean ... may take either the form of aesthetic contemplation, or that of distant castle-building ... or that of considering some wonder in one of the Universes,[135] or some connection between two of the three, with speculation concerning its cause. It is this last kind -- I will call it "Musement" on the whole -- that I particularly recommend. (CP 6.458)

There are several important ideas expressed in this first description of musement. The first is that while it is a type of mental play, which Peirce refers to as "Pure Play," he distinguishes it from the effortless and inattentive play of our thoughts in reverie. This is the first indication that

[135] In an earlier section Peirce defines three interrelated "universes" of our *experience*: ideas, actual things, and signs. (CP 6.454)

musement relates to reasoning and purpose in a very complicated way. While Peirce notes that musement is not regulated by "serious purpose," he also states that "[t]here is no kind of reasoning that I should wish to discourage in Musement; and I should lament to find anybody confining it to a method of such moderate fertility as logical analysis" (CP 6.461), suggesting it is purposeful and inclusive of reasoning.

Further clarification on these relations can be gained by critical comparison with Gaston Bachelard's own characterization of a special form of aesthetic reflection he calls "*poetic* reverie," which is reverie mediated by poetry (6). Bachelard's phenomenological approach to the activity of reverie aims to save it from psychological accounts that frame it as a form of "escape" that "diminishes" consciousness (16). Poetic reverie contrasts with this passive, escapist form by emphasizing the vital activity of the imagination that "expands consciousness" in the course of the experience of recreating the "poetic image" (6). Similarly, Peirce's musement is a "lively exercise of one's powers" (CP 6.458), especially the imagination, though it is mediated by "some wonder" consciously taken up in the experience of the muser.

However, Bachelard makes a revealing distinction between "cosmic" and "project" reveries, stating that *cosmic* reverie "situates us in a world and not in society" (14). The "world" in cosmic reverie is a created one of the "poetic image," which is "liberate[d]" from the "reality function" and the duress of practical concerns in experience (13). While Bachelard leaves *project* reverie undefined, in the suggested contrast he implies that it is related to the unfolding of sense experience in time, since cosmic reverie "helps us escape time" and is "a state of mind" (14). In identifying poetic reverie as a form of cosmic reverie Bachelard emphasizes the creative

dynamism of consciousness oriented inward to self.[136] This contrasts with the more outward oriented forms of reflective reasoning on experience that Peirce's musement explicitly includes (though is not confined to). Thus while Peirce's characterization of musement aligns with poetic reverie as an active, conscious, imaginative activity, it differs in its posture towards perceived experience, admitting more attention to reality and "projects" of inquiry and understanding.

While poetic reverie "is lived out in relaxed time which has no linking force" (Bachelard 5), Peirce's musement is charged with the spirit of open inquiry and the developmental forces native to reflective reasoning on perceived order in experience or the relations of its elements. Peirce imagines musement not as a discreet event or homogeneous phase of a single mode of thought, but rather as an experience continuous with the spontaneity of attention in observation and the more methodical forms of reasoning in inquiry:

> It begins passively enough with drinking in the impression of some nook in one of the three Universes. But impression soon passes into attentive observation, observation into musing, musing into a lively give and take of communion between self and self. If one's observations and reflections are allowed to specialize themselves too much, the Play will be converted into scientific study. (CP 6.459)

Here Peirce imagines musement as a mediating or transitional experience of imaginative and reflective activity, drawing "attentive observation" into reflection, of "communion between self and self." This communion is "not a conversation in words alone, but is illustrated, like a lecture, with diagrams and with experiments" (CP 6.461). Furthermore, its growth and energy comes from the developments of its attentiveness and effort, placing it in direct opposition to habitual or unreflective modes of thinking and perceiving.

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[136] Although Bachelard does argue that reverie is not about the "solitude of the cogito," his focus is nevertheless on the "poeticizing I" that emerges from "living off the reflecting light furnished by the poets" and poetic images (Bachelard 22).

This image of musement brings it closer to "project" reveries, both in its greater emphasis on attentiveness[137] in perception and its potential development into a more methodical and focused project of thought. For example, Peirce claims that "logical analysis can be put to its full efficiency in Musement," yet as noted at the outset, it is not reducible to or constrained by it. He allows that it may involve more instrumental or proceduralized forms of reasoning, but they are nascent, localized, always *provisional*. Thus the entry into musement and its experience are not wholly regulated by some pre-defined, given project (e.g. "serious purpose" or practical objective) transforming all thought into problem-solving. Rather, there is a attentive openness to the "phaneron" - all that appears to mind,[138] inclusive of both sense perceptions and imaginings (ideas, memories, speculative images, etc.) - which diffuses and "slows" the force of habit and instrumental thinking into reflective activity.

It is these qualities of provisionality and openness in musement, which define its complex relationship to reasoning, ideas of purpose, and goals, that constitute its significance for the problem of rationalization in gaming. The gameplay that Pedercini identifies with mainstream videogame design not only reflects an aesthetic of "efficiency and control" dominated by instrumental "mode[s] of thinking and acting," it is also *streamlined for purposive action* by design. This aesthetic creates a direct and simplified relationship with ideas of purpose which are often codified and made explicit by non-diegetic feedback systems, unambiguous plot-driven

[137] Bachelard states that reverie "functions with inattention [and] is often without memory" (5). However, the key phrase here is "functions *with*," since it is implied in other commentary that poetic reveries do involve attentiveness to the "poetic image" and its development in consciousness. The point, then, seems to be inattentiveness to given reality, constrained by the "reality function".

[138] The idea of the phaneron and Peirce's expansion of phenomenology was explained previously in the argument for rethinking gameplay as an experience (Ch.2.7).

narratives, or "reactive" quest designs (Ch.1.6).[139] These designs naturally lead to habituation and instrumentalization of all or most of the noematic and extranoematic work in gameplay, and they are often supported by the contemporary forms of ludic phronesis accrued by player familiarity with genre conventions or the logics of popular game mechanics (Ch.3.5-6).

This is perhaps most apparent to observers and palpably felt by players in action-oriented genre games like first-person shooters (FPS), action-adventure games, real-time strategy games (RTS), sports and fighting games. These game types are generally characterized by fast tempo gameplay that compels development of ergodic skill and the efficient translation of understanding into habit, actively rendering musement and other modes of aesthetic reflection ancillary to purposive action or wasteful by design. Ideas of purpose are given directly as objectives or communicated indirectly by genre, usually quantified by the game feedback systems in some way, and never really become objects of reflection in gameplay. These qualities of instrumentalization are not exclusive to action-oriented games, with many quest and puzzle games emphasizing ergodic problem-solving for progression in their designs which orient player attention and reasoning toward systems and mechanics, compelling either abstraction of the diegetic and aesthetic qualities of the gameplay experience, or an instrumental, purposive approach to them.

In contrast to these dominant mainstream designs, *design for musement* in videogames functions as a counter to the problem of rationalization by reconfiguring our natural or habitual relation to ideas of purpose in the ludic century. This reconfiguration is indeed the key to a general poetics of reflection in digital games, and while it can be identified conceptually, it is most usefully understood and developed through analysis of exemplifying game experiences

[139] See also previous discussions of actionism (Ch.2.2-2.3) and the role of diegetic and non-diegetic feedback systems in quest design, specifically the distinction between "active" and "reactive" quest design (Ch.2.5-2.6).

because design for musement always has *a strategic relation to gameplay as an aesthetic experience of particular subject matter* and is not pursuable as abstract ergodic or ludic forms. Nevertheless, before turning to particular games it is necessary to introduce a final conceptual distinction that will aid our appreciation of the design strategies discussed below and help articulate their subversion of contemporary ludosophia (Ch.3.5) and opposition to the problem of rationalization philosophically.

In musement the teleological quality of our experience is not *purposive*, driven and organized by a given end, but rather *purposeful*, animated and oriented by a reflective process of experimentation with ideas of purpose.[140] This distinction between purposiveness and purposefulness is introduced by Gabrielle Gava as a crucial aid to understanding how Peirce's pragmatism both develops from and critically relates to the Kantian idea of purposiveness developed in his philosophy of the power of judgment in the third Critique. Gava defines purposefulness as "an orientation toward an end involved in a thought process," and purposiveness "as conformity to an end" (699).[141] The condition of being "oriented toward" an end in a "process" of thought is apt language for describing the unique teleological *tendency* of musing as a mode of aesthetic reflection (distinct from reverie), since our reasoning and perceiving are not constrained or determined by a given idea of purpose. This contrasts with the dominant forms of practical reasoning that most mainstream videogames foreground in

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[140] We might also think of the function of ideas of purpose in musement as *teleonomic* in the sense developed by Jacques Monod in *Chance and Necessity*. Monod's philosophical approach to evolution in biology is framed by a distinction between teleological and teleonomic purposiveness, with the latter being emergent and not related to final causes.

[141] In addition to Gava's work Rachel Zuckert's book length re-interpretation of Kant's *Critique of the Power of Judgment*, *Kant on Beauty and Biology*, emphasizes the complexity of his thinking on purposiveness. Reflecting forms of judgment are cases of "*non-determinative* judging" in which no concept is *applied* to particulars of our experience in order to "*determine* the character of the object" (66). Zuckert notes that accounts of the operation of the principle of purposiveness in the reflecting judgment as an activity are a challenge, but in describing it as a process of "seeking" without a definite idea of purpose regulating the experience we can see its connection to Peirce's description of musement more clearly.

gameplay. In these games ideas of purpose and goals are explicitly given or automatically inferable in order to channel play into a rhythm of *amusement*, wherein the player enjoys the process of enacting ergodic problem solving and the efficacy of contemporary ludic phronesis as gameplay affirms given purposes and conforms to given ends as it unfolds. In this specific formulation amusement can be understood quite simply as a state of *non-musement*, rather than conventionally as the provision of entertainment or pleasurable distraction, since aesthetic reflection is subsumed by purposive (and increasingly habitual) interaction.

What Pedercini identifies as the problem of rationalization in videogames can be understood in light of all this as designed optimization for what Kant refers to as "determining" judgment (Kant 15; 66-67). Kant contrasts this mode of judgment, which involves using given concepts, rules, and conventions to perceive and interact with particulars in our experience, with "reflecting" judgment, which involves active reflection on the order and details of our experience in a process of mental experiment (viz. musement) in order to expand perception and understanding. Dominant videogame designs tend to create gameplay experiences that emphasize instrumental reasoning *in an aesthetic form*, as Lantz celebrates and Pedercini laments (Ch.3.5), but marginalize *aesthetic reasoning*, which is by its very nature reflective and not determined by given conceptions and purposes.

Design for musement involves strategic subversion of the basic conditions of instrumental reasoning within the game experience in order to draw out and affirm reflective activity in the player. The readings of specific games offered below explore design strategies that seek to create effortful forms of attention and reflection by short-circuiting the processes of instrumental reasoning and efficacy of determining judgment in gameplay. While design strategies and techniques vary in each game discussed they *all* deliberately seek to catalyze

moments of musement in order to develop and sustain other forms of reflective activity both within and after gameplay, leveraging them for expressive effects. In the following sections I highlight two games, Giant Squid's *ABZÛ* (2016) and The Chinese Room's *Dear Esther* (2012), which place player musement at the center of gameplay focused on exploration. These games take a minimalist approach to ergodics and non-diegetic feedback, emphasizing narrative immersion and feelings of presence in the gameworld over engagement with rules, systems, and ergodic problem-solving.[142] In later sections I will turn to games that incorporate more ergodic complexity and foreground ergodic problem-solving, yet do so strategically as a means of compelling player reflection on the meaning and ethics of the given rules, possible choices, and apparent problems and goals of the game as a fictional world.

§4.2 | Musement and Methexis in *ABZÛ*

While many videogames include exploration it is often heavily framed and directed by various conventional designs, such as an introductory cutscene that provides a scenario and goal to the player through narrative, an explicit instruction given by the game interface directing the player to find something or go somewhere, or a quest given by an non-player character that provides the player with purpose. These designs draw out the "compulsion for efficiency and control" Pedercini identifies with conventional videogames and mainstream design generally,

[142] Alison McMahan (2003) provides excellent analysis of "immersion," historicizing and breaking down the vague usage of the term in popular discourse. She distinguishes immersion, which refers to the quality of being caught up in the world and story of the game, from "engagement" and "presence." Engagement refers to the quality of being engrossed with the game as a system, particularly with the non-diegetic dynamics of the game (ergodics, rules, points, strategies, etc). Presence refers to the feeling of "being there" in the game world.

displacing player reflection with practical problem-solving.[143] However, the exploration game *ABZÛ* actively disrupts the efficiencies of interpretation and action derived from such designs through narrative and aesthetic strategies that move musement to the center of gameplay.

In *ABZÛ* the player controls an unnamed diver exploring a vast ocean at some undisclosed time, slowly descending through various zones and layers, observing beautifully rendered habitats teeming with sea life. Although the game does have a story and a chapter-like structure as the player descends, it begins with demands for perception and exploration in a deliberately ambiguous context. In the opening cutscene the camera moves along the ocean surface before plunging into the depths toward a mysterious well of light before cutting to the diver, floating in the middle of the ocean. The diver, ambiguously human, wakes and the player is given control (Fig.24). There are no objectives given, and the ambiguity of the scene pushes the player back to the primary modes of the game: wandering movement and curious observation.

[143] This shares dynamics with the reactive and active questing designs discussed in Ch.2.6. However, in that context the focus was on the spirit of inquiry and the significance of noematic work in discovery, whereas here the issue is more fundamental and directly aesthetic, having to do with orientation of player attention and the sensitivity of their perception of details in the gameworld.

Figure 24 - The Mysterious Diver in *ABZÛ*

The opening sequence of the game provides no narrative frame or objective to orient the player prior to exploration. [video: see supplemental files]

These modes naturally prompt musement as the game unfolds in exploration through its narrative design. The central purpose and identity of the diver becomes an object of reflection as the player moves deeper, discovering the ruins of an ancient civilization and their technology. Through reflection on visual cues in murals found among the ruins and the designs of the strange industrial technology encountered the player can reconstruct the scenario and infer a possible purpose for their existence (Fig.25). The game draws out this reflection through what Henry Jenkins identifies as "environmental storytelling," specifically the techniques of designing "embedded narratives" and "evocative spaces" (2004 123). For example, in observing the imagery of the murals and synthesizing them into a narrative the player can surmise that the

diver is an artificial life form based on and descendant from the same technology that appears to have damaged the vitality of the ocean (Fig.26).

Figure 25 - An Ancient Mural in *ABZÛ*

Murals like this one found in ancient ruins depict a civilization that lived in harmony with the ocean, harvesting energy and returning it, nurturing the evolution of sea life.

Figure 26 - Advanced Technology and the Diver in *ABZÛ*

A mural depicting an advanced harvesting technology and a diver wielding extracted energy. The triangular designs on the diver correspond to those on the industrial designs of devices found in the deep.

The game embeds diegetic information throughout the world in order to inspire player musement, not only on the history of the world they are exploring, but also on the feelings and perceptions they have in gameplay as well. While the murals are the central example of a fairly straightforward project for musement in *ABZÛ*, there are also sensorial aspects that constitute or support this embedded narrative. As the player descends deeper and the technology is more pervasive the aesthetic designs create feelings of negativity and danger: the dominant colors change from soothing and resplendent shades of blues, greens, yellows, and oranges to ominous reds, dark oranges and gloomy grays; the sound profile also changes from calming to aggressive, punctuated with metal clangs and clinks, filled with low whirring sounds and reverberation; the

sensation of movement and haptics of the player's control are violently disrupted as they interact closely with specific devices (Fig.27).[144] These sensory aspects resonate with the figural embedded narratives of *ABZÛ* which reward reflective reasoning by never simplifying into a univocal purpose or targetable objective.

Figure 27 - A Field of Devices in *ABZÛ*

Deeper in the ocean the player encounters a field of electromechanical devices that release a hostile charge as the diver approaches. The inverted pyramid devices are depicted in murals as an advanced technology that damages sea life and ecosystems. [video: see supplemental files]

[144] Originally released on the PlayStation 4 console, *ABZÛ* makes extensive use of the "DualShock" vibration feedback technology. DualShock 4 allows games to design for timed vibration of the controller in the players' hands at varying levels intensity.

In addition to embedded narrative techniques *ABZÛ* creates evocative spaces to prompt player reflection beyond the gameworld on contemporary cultural narratives of technological excess and hubris, ecological crisis and civilizational collapse. While every game can be said to have "evocative spaces," Jenkins reserves this concept for designs that strategically evoke external pre-existing "narrative economies" that amplify, comment on, or otherwise productively interact with internal narratives and themes. For example, the embedded narratives develop a story of a fictional civilization that harnessed a powerful form of energy from the primeval water of deep aquifers in the ocean.[145] The water was harvested and used to nurture an explosion of sea life and lead to a prosperous society. However, while early harvesting practices involved balance, returning energy to the ocean to sustain sea life (Fig.28), the introduction of powerful industrial technology that amplified and automated harvesting degraded the ecosystem to the conditions the player finds it in as they explore the game (Fig.29). The visual design of spaces containing this technology show withered life or no life, with inorganic debris polluting darkened and clouded waters. These spaces invite analogical reasoning and reflection on our own technological condition in part by creating a simple yet provocative parallel with cultural narratives about technological impact on biodiversity, and the consequences of automation and robotics on the environment and humanity.

[145] This narrative is inspired by Sumerian mythology in which abzu ("ab" water, "zu" deep) was thought to have magical powers of vitality and fertility.

Figure 28 - Returning Energy to the Sea in *ABZÛ*

In this mural some of the energy harvested by hand is returned to the sea, renewing life. The pyramid shaped industrial technology is depicted with flora and fauna bending away (Fig.26) and the atmosphere of spaces with this technology are barren and lifeless.

Figure 29 - Barren Spaces in *ABZÛ*
As the player descends the advanced technology is more pervasive and life more sparse.

While the embedded narrative and evocative space designs prompt and reward player musement, the aesthetic strategy and ergodic designs deliberately support it by creating the ideal conditions of mediation for reflective activity. *ABZÛ*'s ergodic design minimizes mechanical challenge that would require precision timing and interaction in gameplay in favor of perceptual and interpretive challenges. Consequently the player can wander, explore, linger, notice, and appreciate in all areas of the gameworld. Furthermore, ergodic activity is removed from the feelings of duress created by active threats (e.g. enemies, moving hazards, time constraints, etc.) and imperatives from non-diegetic feedback or quantification schemes (interface alerts on objectives, health status, player lives, inventory displays, level time remaining, etc.). There is no

fail state in the game, and while a few specific actions must be performed in order to progress at a few key points, such as unlocking a gate or restoring a life well (Fig.30), player movement and progression through the gameworld is generally uninterrupted and paced by player curiosity and interest.

Figure 30 - A Life Well in *ABZÛ*

The player finds and restores the function of life wells that renew the flora and fauna of a specific ocean biome. [video: see supplemental files]

In a memorable moment midgame the player swims alongside a pod of whales, following them into the deep (Fig.31). This is an emblematic experience of *ABZÛ's* gameplay since it is characterized by the logic of *methexis* rather than practical problem-solving. The gameplay of

this event is not organized by rationalized pursuit of an objective, wherein the player seeks to control the action to effect the desired outcome. Rather, the player has a "methectic" relation to the unfolding of events in the gameworld, wherein their gameplay is a "helping-out of the action" (Huizinga 15), not a controlling or unilateral action. Methexis, derived from ancient Greek μέθεξις, describes the mode and aesthetic quality of audience participation in ritual and theater. The "goal" is an aesthetic experience that is co-created by the playful and responsive swimming of the player with the machine-controlled whales. As the player comes eye-eye with the giant blue whale the focus of gameplay is the unfolding of an aesthetic experience, yielding finally to emerging feelings of meaningfulness and aesthetic reflection as the diver and the whale pod part ways.

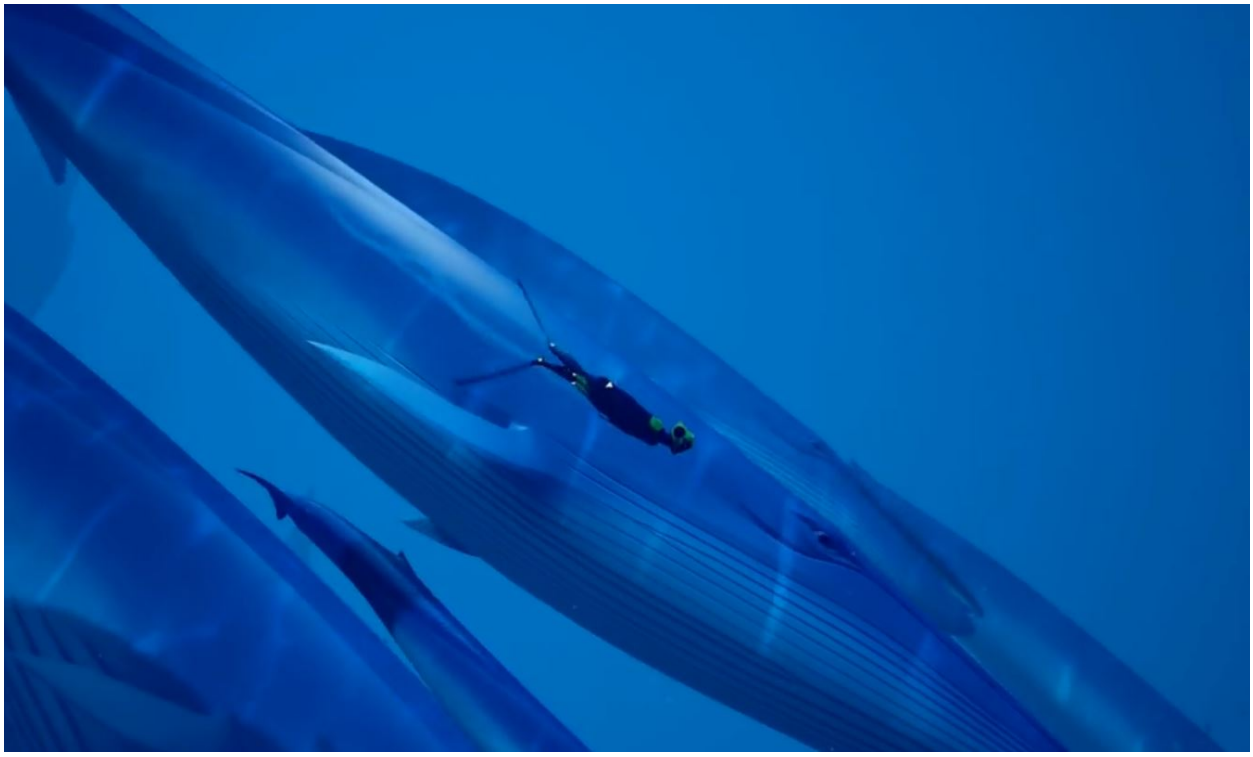

Figure 31 - Swimming with the Whales in *ABZÛ*

The player follows a pod of blue whales down into the deep. [video: see supplemental files]

Design for musement in *ABZÛ* is explicitly affirmed as a strategy by the inclusion of meditation statues throughout the game. At these statues players can sit their diver to meditate, switching from movement control and focus on the diver-player perspective to simple control of visual focus, choosing to inhabit various perspectives of the sea creatures swimming and interacting in the area (Fig.32). Symbolically, this is a decentralizing design that subverts the "logic of efficiency and control" and the habitual feelings and expressions of power and conquest central to contemporary mainstream gaming. The logic of empathy informing this design is also found in the riding mechanic which allows the diver to ride a creature, freeing the player from considerations of movement and direction in order to focus on thinking and perception from the perspective of the creatures: looking, listening, musing. Even in the decisive moment if the final act of the game, when the diver discovers the heart of the harmful technological system, it is not the player that disables it but rather the sacred shark that has shadowed the player from the beginning. These designs promote and celebrate the figure of the witness or collaborator over that of the conqueror or efficient problem-solver.

Figure 32 - Sacred Mediation Statues in *ABZÛ*

In many of the biomes the player explores there are shark statues that change the control dynamics of play when activated. Players no longer control movement through the water but rather the camera and its focus on the various species of sea creatures as they swim.
[video: see supplemental files]

§4.3 | Musement and Metaphorical Resonance in *Dear Esther*

The Chinese Room's exploration game *Dear Esther* also exemplifies design for musement, but places greater emphasis on narrative and metaphorical reasoning, language play, and speculative thinking than on sensation, feeling, movement, and aesthetic discovery. Like *ABZÛ*, *Dear Esther* uses ergodic minimalism to focus gameplay more completely on looking and moving, but the exploration experience is complicated by the incorporation of text and speech in voice-over events that trigger as the player moves through the world. The attention economy

created in gameplay has the player switching between careful perception of the gameworld and listening to and interpreting fragments of letters written to the eponymous "Esther," read aloud by an anonymous narrator.

The game takes place on an uninhabited island in the Hebrides, though the ontological status of the gameworld becomes unclear as the player progresses in exploration. The experience is organized into four chapters, each associated with a landmark: the lighthouse, the buoy, the caves, and the beacon (Fig.33), although the player is not alerted of transitions during gameplay. It is implied that the player embodies the narrator, though physical details are unknown since gameplay is first-person perspective and they have no representation in the gameworld. The game begins at the dock of an abandoned lighthouse, with the player looking out along the shore of the island toward the blinking red light of a mysterious beacon visible through fog in the distance (Fig.34). As the narrator reads the first letter fragment the player can begin exploring the island. New letter fragments are read at key landmarks in the journey, simultaneously telling a story and imbuing the island and its features with symbolism.

Figure 33 - Chapter Structure in *Dear Esther*

The four chapter structure of the game is represented at the start of the game. This design invites player reflection on the symbolism of these landmarks.

Figure 34 - The Beacon in the Distance in *Dear Esther*

The starting view for the player on the dock near the lighthouse. The light at the top of the beacon tower, the final destination of the game, is visible through the fog.

The primary engine of player musement in *Dear Esther* consists in a non-linear experience of narrative information that is incomplete and full of metaphors and word play by design. While a basic story can be reconstructed from the letter fragments, the function of the narrative design is to create diegetic problems for thought, similar to the aesthetics of problem-making explored by *Every Day the Same Dream* (Ch.3.6). These problems are amplified and complicated by the aesthetic experiences of the landscape as the player looks and listens, trying to make sense of the letter fragments as they do so. For example, it is implied that the narrator is the widower of Esther, a woman who died in a tragic car accident with a drunk driver named Paul. As they wander the island the player comes upon car wreckage, diagrams of circuits and

chemical compounds painted on cave walls, and other objects related to the accident (Fig.35). At one point, as the player descends into some caverns they fall into a dark pool of water and temporarily find themselves swimming along a highway underwater, approaching an empty hospital gurney abandoned in the middle of the road (Fig.36). These surreal experiences prompt reflection on the reality of both the island and the player, and they also create metaphorical connections between the island and primary story of the narrator, Esther, and Paul.

Figure 35 - A Florescent Diagram in *Dear Esther*

Throughout the game world the player can encounter various diagrams, especially of chemical compounds, including those for alcohol, ranitidine, and dopamine.

Figure 36 - An Abandoned Gurney in *Dear Esther*

After diving into deep water in the cave the player explores a dreamlike space in which a gurney is abandoned in the center of a highway. They can explore this vision for a short while before they surface and return to "reality."

In a particularly revealing letter fragment late in the game the narrator obsesses over the idea of *coincidence*:

> The stones in my stomach will weigh me down and ensure my descent is true and straight. I will break through the fog of these godforsaken pills and achieve clarity. All my functions are clogged, all my veins are choked. If my leg doesn't rot off before I reach the summit, it will be a miracle. There are twenty-one connections in the circuit diagram of the anti-lock brakes, there are twenty-one species of gull inhabiting these islands , it is twenty-one miles between the Sandford junction and the turn off for home. All these things cannot, will not, be a co-incidence.

While the player struggles to make sense of the island and the letters of the narrator as they make their pilgrimage from the lighthouse to the mysterious beacon, the narration suggests a struggle to make sense of the loss of Esther and details of the accident. Along the way the story of the primary triad of characters (the narrator, Esther, and Paul) is interwoven with the history of the island itself, focused through another triad: an unnamed hermit, an 18th century historian named Donnelly, and a goat herder named Jakobson. These characters and their histories of loss and death on the island interact in suggestive ways with that of the primary story, prompting reflection on parallels across characters that never resolve into perfect counterparts. In the final chapter the narrator eventually refers to "Esther Donnelly" and "Paul Jakobson," providing a ground for mapping the two character triads and connecting the mysterious narrator to the hermit and his history as a "holy man" that came to the island on a "boat with no bottom" (Fig.37). These mappings are generative but never resolve into an explanatory scheme. Rather, they create a generative scheme, educing the creative intelligence of the narrativising and analogizing mind of the player by design, leveraging their creativity in musement for meaning-making and philosophical discovery.

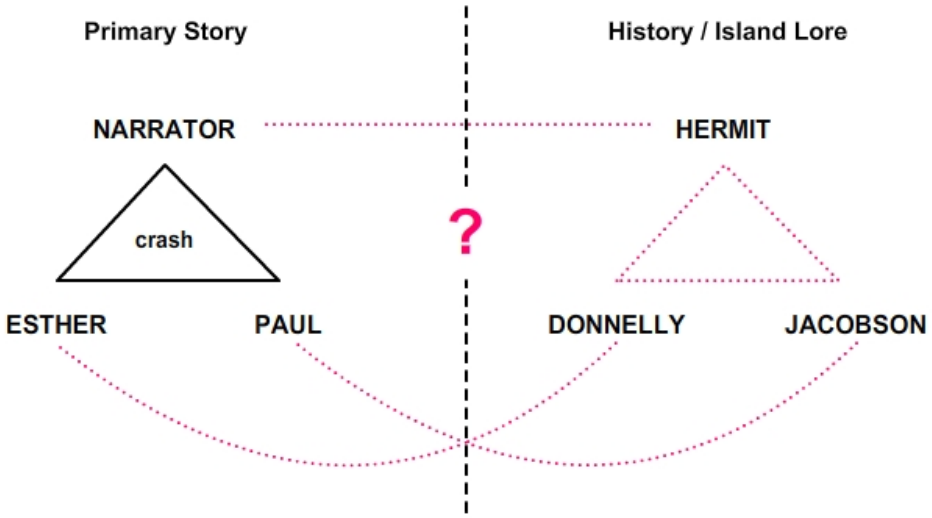

Figure 37 - Character and Story Relations in *Dear Esther*

The player is invited to think across the stories and histories in the game, reflecting on the ways in which the characters and their stories mirror and comment on one another.

The player is also invited to consider the island and some of its imagery as metaphors for aspects of the narrator's story, enabling another trajectory of reflective activity. For example, in the caves the narrator may share one of these fragments from the chapter's collection randomly:

> I’m traversing my own death throes. The infection in my leg is an oilrig that dredges black muck up from deep inside my bones. I swallow fistfuls of diazepam and paracetamol to stay conscious. The pain flows through me like an underground sea.

> If the caves are my guts, this must be the place where the stones are first formed. The bacteria phosphoresce and rise, singing, through the tunnels. Everything here is bound by the rise and fall like a tide. Perhaps, the whole island is actually underwater.

> I am travelling through my own body, following the line of infection from the shattered femur towards the heart. I swallow fistfuls of painkillers to stay lucid. In my delirium, I see the twin lights of the moon and the aerial, shining to me through the rocks.

In these fragments the movement of the player is related to the coursing of an infection through the narrator's body, which is itself consistently related to the island and its spaces in other fragments. Throughout the game metaphorical relations like these are modified or changed, causing the player to persist in an aesthetically charged mode of hypothesis formation that overwhelms player thinking and fixation on a "solution" to the connections generated.

In some general notes published on the developer blog writer and producer Dan Pincheck identifies this as a deliberate design strategy to defeat the rationalizing, problem-s*olving* mind. He notes a particular "thing to watch for is collapsing symbols. Often a symbol or metaphor will be set-up to be collapsed either later on in the [voice over] – usually by shifting the object being talked about into something completely different – or contradicted by a later voice over" (Pincheck 2013). In the case of object shifts, player impulse to "accurately tie [the metaphor] to the object" is thwarted, generating musement on the "logic of the metaphor" instead. In the case of contradictions, these undermine the logic and dynamics of progress and accrual that are pervasive in contemporary videogames which slowly narrow thinking and feeling as the player advances in gameplay. Instead, *Dear Esther* builds feeling and compelling resources for reflection that cannot be perfectly ordered and recapitulated as a logical, linear narrative.

Although the game offers no apparent resolution to questions we naturally have about many details of the accident, the reality of the island, the purpose of the player's presence there,

or the reliability of the narrator's own accounts, it still manages to make our reflections purposeful by generating meanings and reflective experiences that *feel* like resolutions. This is because as byproducts of our musement, framed and organized by the aesthetic and narrative strategies noted above, these meanings and experiences resonate with the major themes of the game: trauma, loss, and reconciliation. There is no "solution" to trauma, no satisfying "reason" for human loss, and this is rendered as an experience in gameplay as the player seeks understanding and meaning in reflection. Hence the finale in *Dear Esther* is not marked by an actual change reflected in the game as a system or its fictional world - a "win condition" indicated, affirming correct action; an explanatory cutscene, legitimizing interpretation - but rather a potential change in the player.

This theme is reflected in a recurring allusion in the game to the biblical Saul of Tarsus and his conversion to St. Paul on the road to Damascus. The game invites the player to consider the narrator-player in the position of Saul, experiencing their own Damascene conversion in the specific existential (rather than religious) context the game creates. This frames the game as a transformation story, leaving the player to reflect on what kinds of revelation and transformation are precipitated by the sudden tragic loss of a loved one. The game ends with the player climbing to the top of the beacon and jumping, at first suggesting suicide as they fall, then turning hopeful as the descent transitions to impossible flight (Fig.38). The camera tracks a flight along the coast to the shallows where we see the letters to Esther folded into paper boats and set to sea. This concluding scene creates a figure of reflection as the flight passes over the letters, suggesting a reconsideration of them in light of preceding experience.

Figure 38 - A Final Flight in *Dear Esther*

After leaping from the top of the beacon the player takes flight and surveys the coastline. [video: see supplemental files]

Dear Esther ends with the whispered voiceover "come back." This call to replay, to explore and muse again, is symbolic of the value placed on the quality of attentiveness (to perceptions and ideas)[146] native to musement in the game design. Given that each exploration exposes the player to a subset of the letter fragments, and that many of them can be heard at different moments within the world, each experience of the game involves serendipity and coincidence - of perceived elements of the island, known metaphors and symbols, mood and experience of the player at time of gameplay, and so on. These are used as resources for shaping the experience of meaning, constrained only (though importantly) by the narrative themes,

[146] This mode of attention can be related back to the discussion of the "phaneroscopical perspective" on gameplay as an experience (Ch.2.7).

imagery, and central allusion. This strategy affirms and rewards intense attention to details and continuous reflection on their relations in subsequent experiences of the game.

Finally, it is worth adding that other exploration games with sparing mechanics, similar pacing, and minimal ergodic challenge, such as The Fullbright Company's award-winning *Gone Home*, or Frictional Games' *SOMA*, are also designed for player reflection, especially on the unfolding story and the diegetic situation. However, these games are not designed for the modes of aesthetic reflection I have associated with musement, nor do they directly counter the aesthetics of rationalization identified by Pedercini. This is a result of narrative designs that lead to a narrowing of player reflection as exploration progresses toward resolution and aesthetic strategies that merely logically support rather than creatively complicate the narrative themes and central story. While the "story model" in all four games is "gnoseological," which indicates discovery-oriented narrative focused on the "realization of meaning" (Neitzel 235), yet in *ABZÛ* and *Dear Esther* the *processes* of discovery and realization in gameplay are characterized by expansion of player reflection, not compression into closure. Conversely, in *Gone Home* players finally arrive at a specific understanding of the central relationship and small human tragedies of the family dynamics, or of the fate of the world and humanity in *SOMA*.

ABZÛ and *Dear Esther* are potent examples of digital games that represent a poetics of reflection that targets musement as special mode of aesthetic reflection in their designs. While it may be tempting to abstract from the above readings a more general principle of design for musement based on the formal similarities between these games as media, such as their ergodic minimalism, or their focus on exploration and environmental storytelling, what I have tried to show is that design for musement absolutely depends on the details of the aesthetic and narrative strategies of the given game. Furthermore, as I develop below, complex ergodic design,

mechanical challenge, and elaborate rule systems can also be leveraged for generating non-instrumental forms of reflective activity in videogames.

§4.4 | The Aesthetics of Slowness and the Feeling of Failure in *Cart Life*

While *ABZÛ* and *Dear Esther* exemplify a poetics of reflection that focuses on musement and exploration in the gameplay experience, Richard Hofmeier's *Cart Life* (2010) and Playdead's *INSIDE* (2016) put greater emphasis on time and repetition, developing an *aesthetic of slowness* that strategically disrupts the flow of practical, habitual, and instrumental forms of play in order impose specific events of affectively charged player reflection on purpose, feelings, or meaning. Much like the designs for educing musement above, the aesthetics of slowness developed below is a native "deceleration strategy" in the domain of digital games (Ch.2.5), directly countering the problem of speed in the contemporary media ecology as well as the problem of rationalization in the ludic century (Ch.3.5). The idea of slowness that informs the design of *Cart Life* and *INSIDE* is not merely one of giving time for idiosyncratic player reflections in gameplay but rather of creating aesthetic experiences of time that induce expansive and searching reflection. In both games player reflection is not simply afforded, it is deliberately integrated into the expressive strategy of the game, contributing to its central message.

In *Beyond Choices* Miguel Sicart offers a helpful initial idea of slowness, adapting the concept of "slow technologies" from the field of critical design as a guide for promoting more ethical gameplay designs (72). Sicart, like Pedercini, is concerned with the dominance of instrumental play in contemporary gaming. However, Sicart's criticism emphasizes the

marginalization of player creativity in rationalized designs streamlined for instrumental reasoning and conventional forms of problem-solving in videogames. These designs crowd out the creative and playful activity of the player as they are guided from objective to objective under pressure from system feedback and mechanical challenges from the game.

To counter this problem Sicart suggests that game design take inspiration from "slow technologies," emphasizing the importance of providing time outside the "flow of interaction" as means of acknowledging the humanity of users as "embodied beings" (and hence, presumably, their personal creativity):

> Slow technologies advocate for a different approach. What if technologies gave us time instead of taking it away from us? Slow technologies aspire to become pauses, giving us the time and the opportunity to reflect about the meaning of those tasks. According to the designers of slow technologies, that pause is good. It breaks the flow of the interaction and creates moments of awareness. Slow technologies remind us that design can be used to open spaces for reflection and that users of technologies are not only interactive feedback providers but embodied beings that relate to how technologies translate and modify that world. Not all games need to be slow technologies, but this design ideology can contribute to the design of moments of reflection against the pressure of function, efficiency, and speed. Slow technologies give players time to reflect. For ethical gameplay to take place in a meaningful way, game design should be inspired by the idea of slow technologies. (*Beyond* 72-3)

The idea of slowness informing slow technologies is about the affordance of time for reflection, a respite from the "tyranny of interaction" or immediate considerations of ergodic work (Ch.2.4). This can certainly be an enabling condition of the poetics of reflection in digital games, but this

formulation connects slowness (and reflection) to ergodic design in a reductive way. There is a difference between designing for "moments" of reflection and awareness within gameplay and creating an aesthetic of slowness that give such moments their importance and meaning. An aesthetics of slowness is as much about the quality of noematic work (attention, perception, reflection, speculation, interpretation, etc.) and the feeling of time in gameplay as it is about the form and tempo of extranoematic work imposed by the game as a technology.

In *On Slowness* Lutz Koepnick offers a more sophisticated approach to slowness that acknowledges the aesthetic experience of time organized by artworks, characterizing slowness in art as a reflective appreciation of the present and its meanings. For Koepnick, the aesthetics of slowness is not simply about mechanically slowing down experience, pausing action, or minimizing the flow or complexity of information. Rather, it is about an *aesthetic strategy* of "experimenting with extended structures of temporality, with strategies of hesitation, delay, and deceleration, in an effort to make us pause and experience a passing present in all its heterogeneity and difference" (Koepnick 3). This emphasis on the experience of the "passing present" here is easily misread as a privileging of immediacy and presence, of slowing down to perceive a given moment, but Koepnick complicates this through a more composite account of the present that integrates the dynamics of memory and anticipation.

In this long but illuminating commentary Koepnick situates his thinking about slowness in the context of what I have previously characterized as the problem of speed in the contemporary media ecology (Ch.2.3), identifying "the present" as an especially fraught idea in this context, simultaneously serving as foil to effective memory and productive anticipation, as well as sacrificial victim to their hegemony as "templates" for value, meaning, and purpose:

> In the eyes of some critics, contemporary speed shrinks spatial relationships while at the same time resulting in a remarkable expansion of the present; it erodes our patience for the intricate work of memory and the durational. The present, it is argued, greedily gobbles up the rest of time, yet in doing so dissolves the kind of historical consciousness necessary to approach and interpret the present as something meaningful. For other critics, speed's logic of ongoing displacement places enormous pressures on our sense of presentness, of presence. Constantly overwhelmed and distracted by too much information, archived knowledge, and restless anticipation, we lose our receptivity toward the intensities, atmospheric values, and resonances of the moment. Slowness, as I understand it, is meant to address and mediate between these two positions.
>
> To experience the present aesthetically and in the mode of slowness is to approach this present as a site charged with multiple durations, pasts, and possible futures; it is by no means hostile toward memory and anticipation. But to go slow also means to open up to the opulence and manifoldness of the present; to unfetter this present from the burdens of mindless visions of automatic progress and nostalgic recollections of the past and to produce presence beyond existing templates of meaning. Far from bonding us to different times and places, then, slowness negotiates today's desires for both memory and presentness by allowing us to reflect on the now in all its complexity -- as receptive contemporaries of our own highly accelerated age." (Koepnick 4-5)

Koepnick posits the aesthetics of slowness in art as an attempt to mitigate the violence of both our contemporary impulses of "restless anticipation" and unreflective reliance on habitual

"templates of meaning" to "produce presence."[147] Thus slowness is about *producing* a more reflective "present" in our experience and not a simple slowing down of processes to grasp a *given* present, since the experience of the present unmediated by the aesthetics of slowness provided by the artwork is likely to reflect one of the reductive positions Koepnick identifies above - a default to the "templates of meaning" that economize our everyday experience of the world.

While Koepnick develops his aesthetics of slowness through close readings of examples in many arts, including photography, film, video, sound and installation art, and writing, with digital games and interactive artworks conspicuously absent, his general formulation of slowness above and his treatment of it as an aesthetic strategy enable productive applications to digital games. Koepnick's approach replaces the mechanical and formal considerations suggested by slow technology design with consideration of the poetics of specific artworks and the aesthetic experiences they create. An aesthetics of slowness helps us see that the mere affordance of time for reflection, even with provision of interesting choices and problems, is easily absorbed by instrumental reasoning and the principles of efficiency and control, or even negated entirely, if the aesthetic and expressive strategies of the game do not actively support reflective activity.

Richard Hofmeier's simulation game *Cart Life* provides an instructive example of design for slowness in digital games that strategically uses speed and the aesthetic experience of time to compel player reflection. It does so not by giving time to the player for personal reflection but ruthlessly and meaningfully regulating it, compelling acceleration, and seeking to exhaust the player. This aesthetic strategy aims at creating affectively charged, often defiant moments of

[147] Koepnick's idea of slowness bears comparison to Dewey's theory of experience and the development of an identifiable aesthetic experience. For example, slowness can be viewed as an attempt to mediate both the "excess of receptivity" which displaces reflective forms of memory and reasoning, and the "zeal for doing" which displaces attentiveness and subtle perception. For more see Ch.2.4.

musement on the everyday experiences of their character. Eventually, these moments give way to sustained critical reflection on both the socioeconomic conditions of the simulated world and their relation to the forms of play the game explicitly demands. The violence of the pacing and ergodic complexity felt by the player creates practical and expressive effects, causing them to attend more closely to details and the potential of every moment in gameplay, appreciate moments of respite and time as a resource, and to reflect on purpose and the meaningfulness of the possible choices presented in the game's scenario.

Set in a fictionalized version of the Seattle neighborhood Georgetown, *Cart Life* is a "working poor" simulator that asks the player to enact the life of characters trying to start a small business at a difficult time in their lives. The player can play as Andrus, an emigrant seeking a new life by starting a newspaper stand, or Melanie, a recently divorced single-mom seeking financial stability by starting a coffee cart business.[148] Both character scenarios have explicit practical and personal challenges: Andrus needs to raise enough money for an apartment lease to house himself and his cat, and he needs to avoid withdrawal symptoms from his nicotine addiction by smoking; Melanie needs to earn enough money to prove to a custody judge that she can provide for her daughter, and she must maintain her relationship with her young daughter while doing so (Fig.39-40). These challenges brutally constrain the player and their entrepreneurial spirit by creating duress and various tradeoffs between work and life needs, subverting any romanticism or escapist sensibilities the player may bring to the prospects of creating an ideal business in a facilitating toy world.

[148] There is an unlockable character, Vinny, a bagel vendor who seeks to improve his reputation and grow his business.

Figure 39 - Melanie's Character Selection Screen in *Cart Life*

Figure 40 - The Menu Screen in *Cart Life*

The menu/pause screen shows bars measuring hunger, sleep, and the quality of Melanie's relationship with Laura (right). The player must balance self care, time with Laura, and maximizing work hours to meet the financial goal set by the custody judge.

While the character scenarios differ, the mechanics of gameplay and rule systems are virtually the same. However, Melanie's relationship with her daughter Laura and its mechanics of punctuality (picking her up from school on time) and spending quality time with her (learning about her life in attentive conversations) introduces a heightened degree of challenge that increase the potency of its aesthetic strategy.[149] The play experience is broken up by days in a week, with the player starting each day with some goals, such as acquiring permits and buying inventory, and some responsibilities, such as picking your daughter up from school or appearing in court. Accomplishing these involve timely traveling to and from various locations for errands and performing work operations at your cart. Each day ends with a shower before bed, at which time the game displays a financial status breakdown screen (Fig.41). The game ends the following week, with the final outcome determined by your actions with Laura and total sales.

[149] Andrus, Melanie, and Vinny scenarios are considered easy, normal, and hard in difficulty respectively.

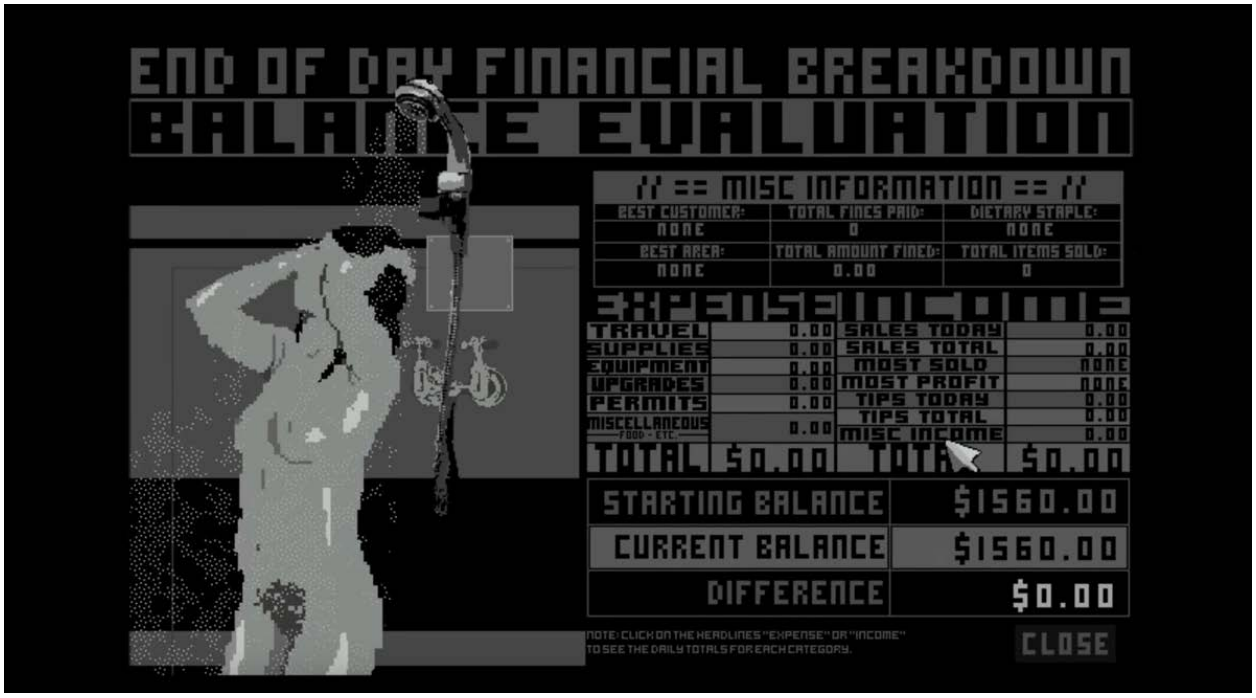

Figure 41 - End of the Day in *Cart Life*

The shower screen at the end of a day in *Cart Life*. This is the only screen in which time is paused; closing it begins the next day.

The primary experience of the game is managing time and the stress of the time economy created by your situation. From the moment Melanie wakes each day time is running without pause, placing the player under constant duress. This makes performing necessary tasks not directly related to her ultimate goals such as eating, brushing teeth, sleeping, conversing with another vendor, or making small talk with a customer feel frantic and stressful. In some cases player anxiety is amplified by the inclusion of tedious ergodic work required to sustain the activity, in others the time is drawn out by machinima and responses that are out of player control, causing them to obsess over the next action as time passes. For example, the sales procedure, one of the most frequent acts in the game, requires the player to type out repetitive phrases to make espresso (Fig.42). If the player chooses to engage in small talk or ask a question the dialogue process may yield important information or increase rapport with customers, but it

also costs valuable time. Furthermore, the conversations are only useful if read and remembered, but this is made difficult as the game enforces the mode of "restless anticipation" Koepnick identifies as a disabling condition engaging the present.

Figure 42 - Sales Gameplay in *Cart Life*

This video shows two types of sales procedures back to back: one that requires the player to rapidly press the arrow keys in various patterns, and another that requires accurately typing a phrase. The "customer patience" bar and timer contribute to the oppressive feeling of time and speed in gameplay. [video: see supplemental files]

Negotiating this brutal time economy over the course of seven days has a cumulative effect. The repetition of ergodic work required by the simulation of Melanie's everyday patterns of brushing her teeth, feeding herself, traveling to the store, buying inventory, setting prices, making coffee, taking aspirin for headaches, talking to customers, calculating change, etc. slowly mechanizes the player's actions and compels them to minimize reflection and maximize efficiency. However, simultaneously, the diegetic richness of the game is discovered as

community members are met, anecdotes are shared, and character personalities and histories are learned. The player finds that the game is full of lore, interesting locations, and delightful human narratives, but to explore and enjoy them requires time to wander, perceive, and converse. The character narratives and cityscape visuals tempt the player into inefficiencies by design, calling attention to tradeoffs and tensions between social engagement and economic realities.

Although counterintuitive, these felt tensions in gameplay produced by the aesthetic experience of rushing time are an integral part of *Cart Life's* general aesthetic strategy of slowness. Constantly crowded out by the consuming ergodic activity and practical problem-solving that dominates working the cart, perceptions and thoughts about your present situation and the social world you obliquely glimpse build up during the course of gameplay only to come cascading out in reflection during the many interstitial moments included in the game: eating in the kitchen, waiting for the bus, walking to the school, buying inventory, brushing your teeth and showering. Furthermore, during sleep between days the player navigates dream sequences that not only inform about Melanie's past, her hopes and fears, but also prime the player for reflection on later events (Fig.43). Thus slowness in *Cart Life* does not consist in a moment to moment feeling of slowness or the prevalence of slow gameplay, but rather in its strategic development of an overall ethos of slowness in the player - of attentiveness, reflection, and care in response to system demands for speed and efficiency.

Figure 43 - Dreams and Nightmares in *Cart Life*

An early playable dream sequence in Melanie's scenario. These dream narratives can infuse later decisions and player performance with added meaning.

The most deliberate and significant catalyst of this response is the potency of failures in *Cart Life*. For example, setting the wrong price for the district Melanie sets up in and experiencing the local customers abandoning sales, or running out of a crucial item like milk in the middle of a shift and missing out on crucial sales, or losing efficiency (and hence time) due to untreated headaches all hit the player hard given the stakes, yet they are inevitable errors by design. These small mistakes transform the feeling of time, interrupting the rhythm of habitual play, the steady feedback loop of anticipation and purposive action. To recall Dewey, these

events are poised to become an "identifiable experience," individuating themselves from the "general stream of experience" by virtue of the feelings induced by trauma and the resulting reflections that synthesize and generate meaning (36-37).[150]

Furthermore, because mistakes like these do not trigger a formal fail state in the game that halts gameplay with non-diegetic feedback, they also open a duration of effortful attention. A fail state might reset the player to a default orientation toward the game experience as a series of ergodic problems to be solved, divesting the event of diegetic meaning. Instead, the experience of failure in *Cart Life* is registered more completely by the player in reference to the diegetic situation and character narrative. This design emphasizes the significance of the mistake as a diegetic action with consequences for Melanie and Laura. In the wake of such mistakes it is difficult for the player to slip into a fast, habitual mode of "autotelic experience" or "effortless attention," a mode in which "attention and action seem to flow effortlessly" (Bruya 1).

In Melanie's scenario the most impactful failures involve her daughter Laura. If the player fails to make it to school on time to walk Laura home each day they miss out on important conversations and alienate her over time. There are subtle design choices that amplify the feelings of guilt, frustration, and failure which also change the feeling and awareness of time. For example, arriving late, the game does not indicate to the player that they have missed Laura, leaving them to wander the entrance school looking for her. The anxiety of the unknown and the experience of the quick search have a slowing effect, prompting reflection on consequences as you walk Melanie home. Returning home you always find Laura in her room, two floors up in

[150] For a more developed commentary on Dewey and his account of having an identifiable experience as it relates to media, see Ch.2.4. Dewey himself does not seem to think of events at this scale when he writes about having an experience, instead focusing on a larger scale involving "inchoate" experiences within a larger experience, such as playing a game or reading a book. Dewey is imagining the maturation of *an* experience as occurring upon completion, when the "material experience runs its course to fulfillment" and we consider the whole as an object of reflection (36). However, the logic of Dewey's argument can be scaled down to consider identifiable experiences (as events) within an ongoing experience of an artwork such as a digital game.

the attic, requiring Melanie to make her way up two sets of stairs before being able to apologize (Fig.44). These post-failure experiences, searching for Laura at school in vain and walking up to the attic to apologize, create interstitial moments within the flow of rationalized gameplay. They provoke a flood of feeling and reflection that tends to haunt subsequent experience, disturbing or "slowing" the habitual return to instrumental reasoning and efficient gameplay for a time, resensitizing player perception of the world and its characters.

Figure 44 - Stairs to Laura's Attic Room in *Cart Life*

Melanie walks up to the attic to check on Laura. The attic level is blacked out until you enter, amplifying the feelings the player has about missing after school pickup.

Finally, when the restless days run out and the player brings Melanie to the courthouse to be judged a frantic and sprawling reflection suddenly arises as control is relinquished, much like the emotional reaction one has to a narrow escape of calamity. The most common ending is

ambiguous, leaving the player in anxious wonder and searching reflection on past actions as the game fades to black as Melanie enters the courtroom (Fig.45).

Figure 45 - At the Courthouse in *Cart Life*

Melanie arrives at the courthouse and is met by her sister Rebecca who tells her everything will work out regardless of the outcome. As the conversation ends Melanie enters and the screen fades to black. [video: see supplemental files]

§4.5 | Aesthetics of Slowness and the Spectre of Cybernetic Control in *INSIDE*

Where *Cart Life* creates its aesthetic of slowness by leveraging a punishing limitation of time to induce meaningful presence and moments of reflection outside the default regime of economization of thought, perception, and purposive action, the puzzle-platformer *INSIDE* achieves similar results by effectively providing the player with infinite time in gameplay. In contrast to standard platformer games that are designed for fast, efficient, and continuous

movement, *INSIDE* effects an aesthetic of slowness through its player-centered pacing, minimalist sound design, and use of puzzle experiences to provoke observation and reflection on elements of its fiction - the situation of the unexplained post-apocalyptic world in which gameplay is set and the identity of the unnamed boy the player controls. Each of these aspects of its design conspire to slow the player down, not only countering the impulse for action and the momentum drawn from genre expectations, but also the lure of purely instrumental, goal-dominated thinking and perception in gameplay.

Similar to *ABZÛ*, the game begins in media res, without explicit framing. The player is given control of a small red-shirted boy as he slides down a steep escarpment into a dark forest clearing. Progress throughout the game consists in movement rightward, with obstacles and situations presenting puzzles that must be solved in order to proceed. Although there is no dialogue or direct information given in gameplay, the environments and situations the boy encounters suggest a catastrophic event on earth: as the player advances through the game they witness lifeless wilderness littered with strange technology, a countryside with abandoned farms and dead livestock, urban spaces under some kind of quarantine or occupation, and giant industrial research facilities containing increasingly strange devices and experiments (Fig.46). Many of these spaces are dilapidated, abandoned, and partially submerged or sunken. While no objective or narrative is given to draw the player forward by clear purpose, the combination of the intrigue of the environments and unexplained hostile pursuit of the boy by masked humans early on in the game compel movement deeper into the unknown world by design.[151]

[151] The threat posed by this pursuit is what distinguishes the quality of exploration in *INSIDE* from the pure exploration experienced in the designs for musement identified in *ABZÛ* and *Dear Esther* above (§2-3). This design sensitizes the activity of exploration to the experience of time and sharpens player attention on details in periods of safety in the gameworld.

Figure 46 - A Dystopian World in *INSIDE*

Top left: the boy encounters a barricade in the forest while witnessing humans being loaded onto a truck. Top right: an abandoned industrial farm with dead livestock. Bottom left: humans lined up near an under construction warehouse outside the occupied city. Bottom right: strange experiments and technology fill the mysterious research complex deep in the occupied territory.

Typical modern side-scrolling platformers target fast tempo gameplay full of motion, challenging players to seek efficient traversal of levels (worlds, stages, etc.), which are often timed, with obstacles that constantly compel evasion or interaction (moving enemies, hazards, terrain elements, etc.). The pacing of *INSIDE's* is player-centered, resulting in a slow-fast-slow pattern of ergodic activity as the player moves from safe observant movement, into dangerous or challenging situation, and back to safety and rest. During these intermittent phases of safety the world of the game draws player attention and invites interpretation. In contrast to emblematic

design in platformers like the classic *Super Mario Bros*. and *Mega Man* series,[152] or popular recent examples like *Super Meat Boy*, the visual design of the environment in *INSIDE* is not ornamental or evocative of a formulaic narrative theme (e.g. saving a princess, defeating an antagonist), it conveys the lore of a morally problematic world that demands subtle interpretation and rewards careful perception (Fig.47).[153]

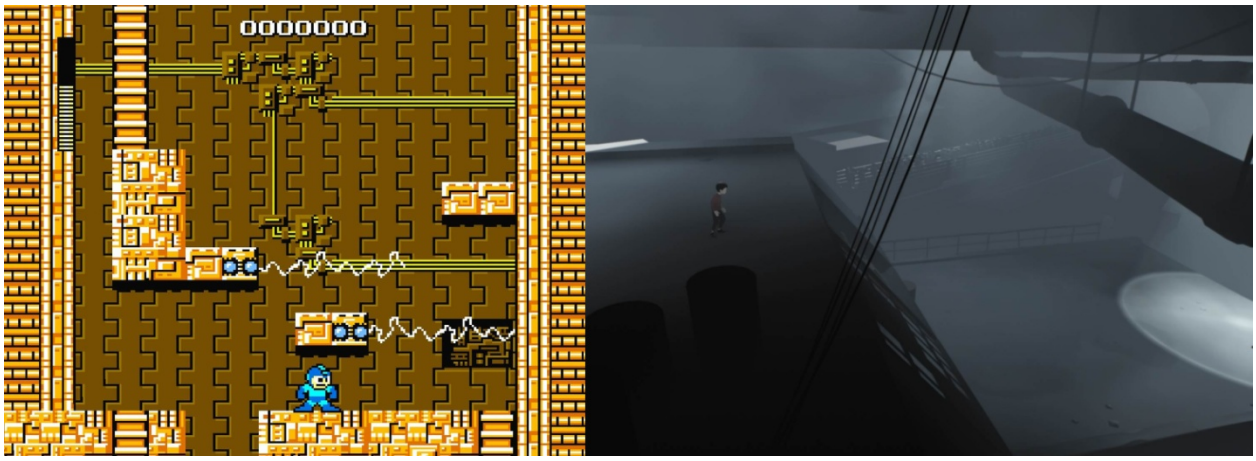

Figure 47 - Environmental Themes vs. Storytelling in *Mega Man* and *INSIDE*

Left: An environment in the "Elec Man" stage of the classic platformer *Mega Man.* As with most platformer design, the environment is meant to evoke a theme, in this case electricity and related technologies. The player learns nothing from careful perception or interpretation of the non-functional aspects of the game world. Right: A city environment from INSIDE in which the player can notice human beings in cattle cars being transported in the background.

[152] Super Mario Bros. series (1985-2019) refers to platformer games in the main titles identified as such by Nintendo on their website: https://mario.nintendo.com/history. The Megan Man series consists in the numbered sequels 1-10 (1987-2018).

[153] Other notable examples include *Braid* (2006), which uses the subtle changes in environmental imagery to comment on the explicit narrative and given insight into its philosophical messages; *Thomas Was Alone* (2012), which combines dramatic voice over and an abstract game world to provoke player reflection on the allegorical meaning of its gameplay and characters; *Celeste* (2018), which combines thematic visuals, narrative dialogue, and symbolism to create philosophical interpretation of the game and its challenges as metaphors for overcoming trauma, repressed memories and feelings.

While the introduction of any significant puzzle or ergodic challenge requiring experiment slows gameplay down in a literal sense, it is the strategic relation between the puzzles or challenges and the expressive goals of a game that catalyze musement and expansive reflection for the player. *INSIDE* uses the pacing and design of its puzzles and challenges to encourage observation and interpretation of the diegetic situation, the morality of the masked pursuers, and their purpose of their enterprise. By combining the common genre dynamic of learning by failure, which enforces repetition, and subtle and incremental environmental storytelling, the events of ergodic challenge are transformed into strategic modulators of player attention and reflection. For example, the timing-based action puzzles that dominate the game, such as escaping murderous masked pursuers trying to capture or kill the boy (Fig.48), naturally involve intense focus on purposive problem-solving and ergodic action, but inevitable failure leads to new perceptions of the world in addition to the requisite adjustments in practical play.

Figure 48 - Ergodic Action Under Duress in *INSIDE*

A chase sequence in which the boy must negotiate natural obstacles and confuse the human hunters quickly to escape. These sequences often result in repetition as the player learns through failure. [video: see supplemental files]

This event is subtly framed so as to grow player curiosity and focus their attention on the diegetic aspects of the game, pushing puzzle-thinking into the background. As the player begins their journey in the forest the mood is ominous as they cross a barb-wired barricade and witness a box truck being loaded with people in the distance. The game automatically imposes a crouching stance as the boy moves behind trees, suggesting danger. Continuing further the player sees signs of military occupation and surveillance: checkpoints, sentries, guard dogs. Reflective focus on details like these is amplified by the sound design, which is exclusively diegetic, with a majority of the experience dominated by ambient environmental sounds and sounds of exertion

by the boy.[154] While most videogames include a non-diegetic musical soundtrack to set tempo, direct player feelings, indicate success, etc., *INSIDE* uses music sparingly and only as a means of drawing attention to a few important dramatic moments throughout the entire game. These aspects of the opening experience create an atmosphere of fear that turns player attention to the drama and away from the mechanics of gameplay and purposive problem-solving.

Thus when this pursuit sequence begins (Fig.48) both the tempo of gameplay and mode of thinking change abruptly. This dynamic inevitably results in death or capture, triggering the failure sequence: the screen fades to black and the player is reset to the last moment of safety. This design not only disarms the failure of the kind of non-diegetic frustration that comes with having to start over or perform previous challenges again, it also maintains focus on the diegetic experience and feelings the player has in gameplay - the potential objects of thought that are *not* subject to instrumental reasoning or the logic of efficiency and control that characterizes standard platformer gameplay. During the struggle to get the timing of the required evasive maneuvering correct, usually over several attempts, the player spends time observing and thinking about the event. This process changes the quality of the final escape upon success, imbuing the momentary experience of safety with feelings of relief and heightened awareness, inviting the player to reflect on the mysterious scenario unfolding: Why are these men ruthlessly hunting this boy? What is the purpose of the blockade? Why are they wearing masks?

[154] There is a lot more to be said about the sound design of *INSIDE*, which could open up a sound-centric dimension to the poetics of reflection, but it is beyond the scope of my main argument here. For example, the selective nature of the sounds included, and the foregrounding of two distinct sound profiles, such as electric and mechanical sounds on the one hand, and the organic sounds of bodies - especially that of the protagonist - and water. Considered in relation to the fictional world and its provocative lore, as well as the narrative of the boy developed in gameplay, this thematic contrast in sound design gain expressive power facilitate interesting player reflection on the message of the game. The pioneering work of Karen Collins in *Game Sound* (2008) and *Playing with Sound* (2013) provide the conceptual resources for such a development.

In contrast to *Cart Life*, which asks the player to live with irreversible consequences of small repeated ergodic failures full of narrative significance, *INSIDE* designs for repeated failures that have no consequence beyond loss of time, leveraging their narrative insignificance to foreground and promote player reflection on the mysteries and morality of the fictional world. Yet both games create an aesthetic of slowness by strategic design of the player experience of time as it affects perception and meaning-making rather than simple affordance of time for reflective activity during gameplay. This design strategy is, in a philosophical sense, a more meaningful temporalization of gameplay as an experience, which is not the same as designs that simply target the tempo of ergodic work, which either imagines player reflection narrowly as problem-solving, or as an incidental function of idiosyncratic player interest in the story or ideological themes in the game.

What is so remarkable about *INSIDE* is its ability to keep an indirect pressure on the player to closely observe, interpret, and reflect through this design strategy. While there are many physics-based puzzles demanding focus on practical reasoning and control of the environment, and action-based challenges demanding efficiency of movement, these player orientations toward control and efficiency are overwhelmed and ultimately subverted, first by the strategic modulation of reflective activity as identified above, and finally by the *complete* game experience which functions as a critical reflection on the central theme of control. While players can reach the end of *INSIDE* by approaching it as an "aesthetic form of instrumental reasoning," as a modern puzzle-platformer with a series of interesting ergodic challenges and solutions, the game includes a second ending that can only be achieved by antithetical modes of thinking and gameplay: musing, exploring, experimenting. Understanding the critical significance of the second ending requires a detailed narrative account of how the game organizes player discovery

and the pursuit of this ending, as well as how the more complete diegetic experience of the game transfigures gameplay by submitting action and purpose to the critical and moral reflection of the player.

INSIDE is actually designed to be played three times, with the first experience of the ending inviting critical reflections on the message of the game that lead to a potential reorientation of player desire and purpose. The first run through the game is characterized by reactive or habitual desires to survive and advance, punctuated by moments of wonder and reflection about the world. Without a given purpose the player reacts naturally to the challenges and obstacles before the boy as he makes his way through the dystopian world before him, building momentum from one puzzle to the next. Along the way the player witnesses a dark reality strongly reminiscent of military occupation and Nazi concentration camps of WWII: humans being loaded into trucks and train cars, destroyed and abandoned cityscapes, checkpoints and processing centers, defunct forced labor camps (Fig.49). While the game deliberately leaves most details to inference and open speculation, recurring encounters with a strange mind control helmet throughout the game focuses player attention on the strange technologies presumably used by the masked humans to exploit and control the bodies of the captured.

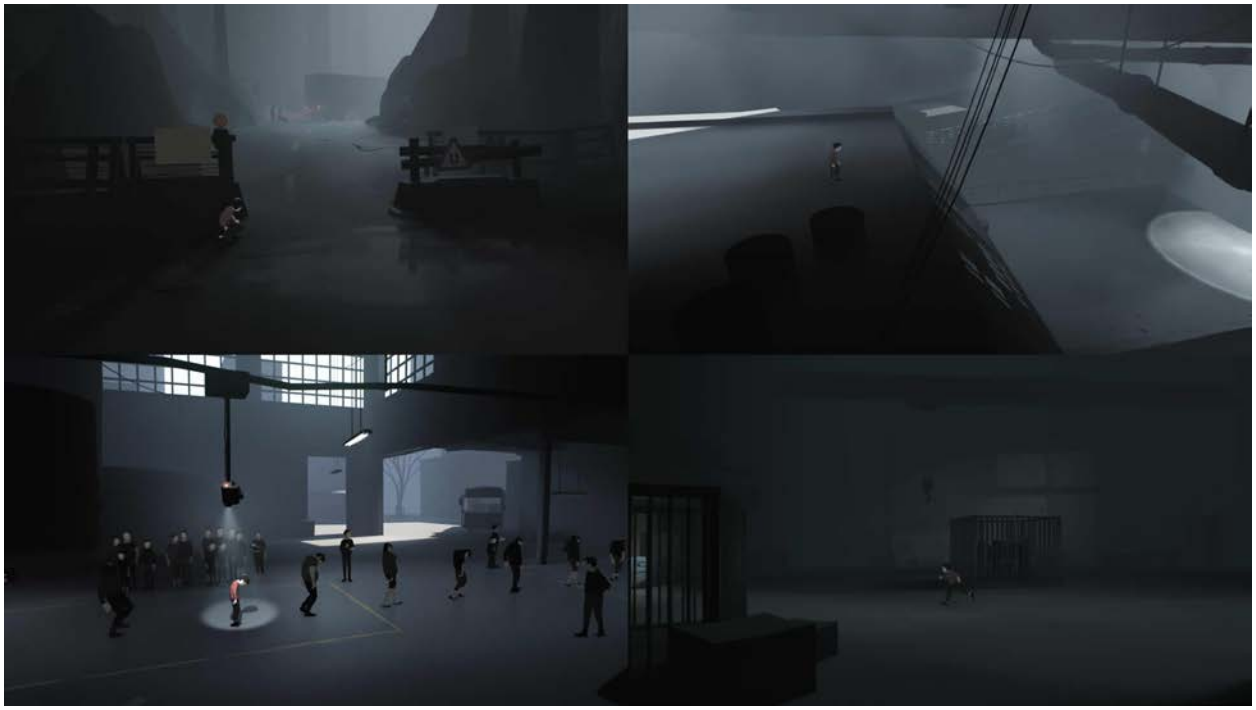

Figure 49 - Scenes of Occupation in *INSIDE*

Top left: A checkpoint on the outskirts of the occupied territory. Top right: A cattle car transporting human beings through the city. Bottom left: A inspection and processing center. Bottom right: A warehouse with cages of human beings.

The first appearance of the control helmet comes in the abandoned industrial pig farm where the player discovers it enables the boy to control of the seemingly lifeless human bodies of workers found there (Fig.50). The scene suggests that the helmet was previously used to control the workers, using their bodies to perform labor at the farm. As the player proceeds through other areas this situation is reproduced, with dormant human bodies having been used for construction, mining, and other strange industrial and military projects. Many of the puzzles involve manipulating the abandoned dormant bodies using the control helmet in order to advance, placing the player in the position of the controller. This experience affects and contrasts with the player's experience as a witness to the exploitation of other human beings over the course of the

game as they learn that the masked people are part of a larger organization experimenting on and using technology to control human beings for unknown purposes.

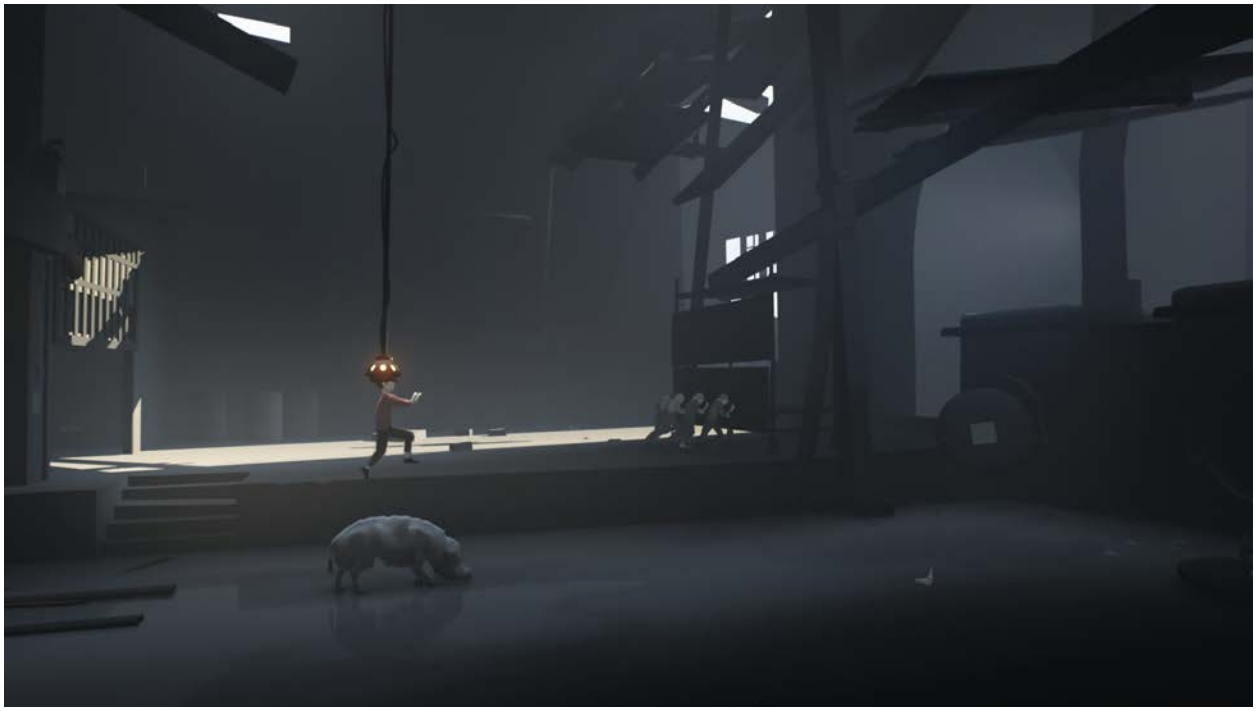

Figure 50 - The Control Helmet in *INSIDE*

The boy can control the bodies of workers in the abandoned farm using the helmet. The yellow glow is the signature of devices that are related to the theme of control throughout the game. Use of the control helmet in the game is always about using other human bodies for the sole purpose of player advancement.[155]

The themes of human exploitation and control are reinforced by the treatment of captives throughout the game, most notably in a scene in which they seem to be undergoing inspection before an unseen later process, presumably to be converted into the type of docile-bodied workers the boy encountered at the farm (Fig.51). In this particularly tense sequence the boy is

[155] It is important to note that the game does not include uses of the control technology for "good," such as freeing others or thwarting those who appear to be doing evil. The game ultimately leaves it to the player's moral judgment of the world they witness and the interpretation of the purpose of the occupying faction of human beings as to what and who represents the good in the game.

caught up in the inspection process by accident and must mimic the motions of the captives in order to escape capture himself. The gameplay is rhythmic as all attention and thought is trained on performing conformity. Success requires repetition and mechanization as the player learns the movements as responsive habit. This unique experience in the game brings the feelings the player has of being in control of the boy closest to those of being controlled or manipulated by the game, a tension that becomes an object of reflection after completing the first run. Subsequent experiences develop this theme of control as the player pushes deeper into the territory and facilities developed by the occupying organization, culminating in a final escape sequence that completely reframes thoughts about control and heteronomy for the player.

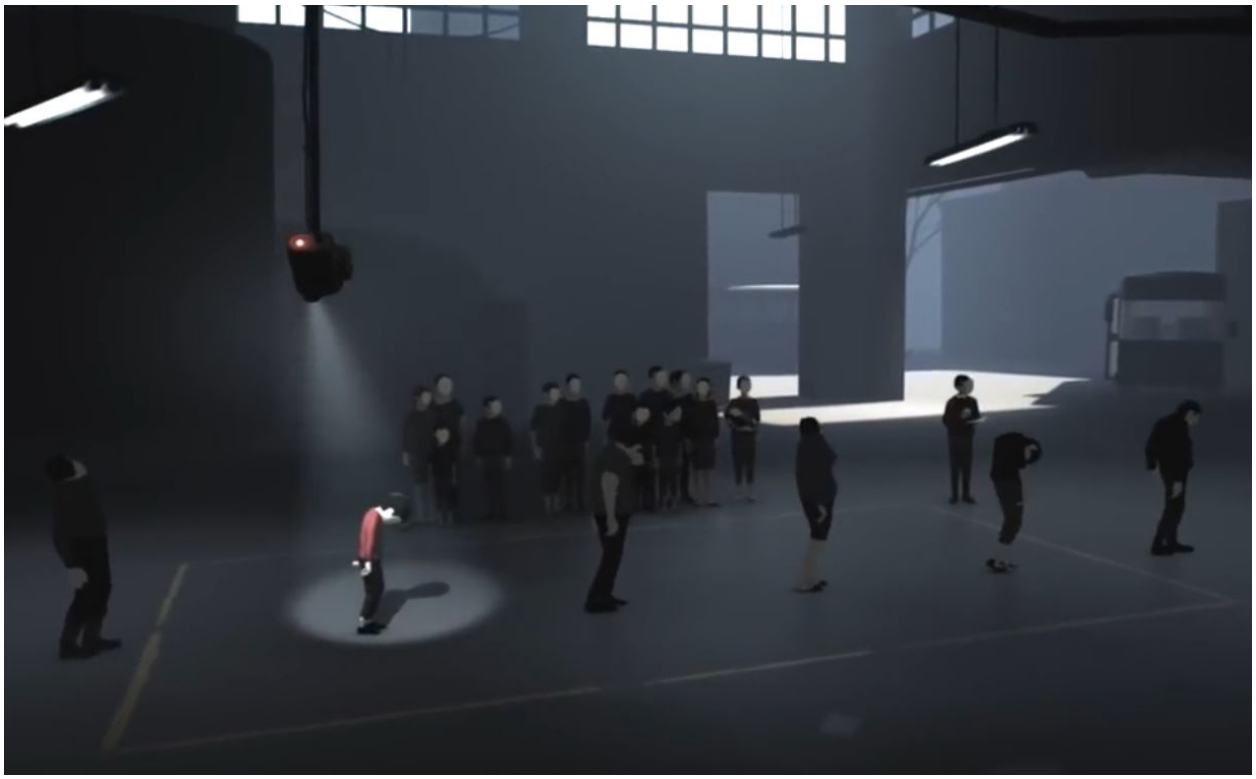

Figure 51 - The Inspection in *INSIDE*

Making their way through the abandoned city the player falls through a floor into an some kind of inspection process. This is an emblematic experience of the theme of control in the game. [video: see supplemental files]

The path of the player during the game has been one of movement from the *outside*, the wilderness and unoccupied territory, through abandoned projects and facilities of the occupying organization that suggest the exploitation of human beings and nature for unknown purposes, to the *inside* of an immense research facility conducting human experiments and other military and industrial projects of unclear purpose. In the final phase of the game, inside the research facility, the player discovers scientists and bureaucrats have abandoned their desks and labs, gathering around a giant aquarium tank to view an unknown creature. Unable to see inside, and free to explore, the player eventually finds a submerged access hatch below that draws the boy inside the tank. Inside the tank is the "Huddle,"[156] a fleshy blob of human bodies connected to several devices similar to the control helmets encountered previously. In the process of freeing the Huddle from the devices the boy is violently pulled into and integrated with its body.

Now in control of the Huddle, the player's default relation to the situation is reversed: to get *outside* the confines of the facility and escape control by the organization. The dramatic escape involves the player breaking the tank glass from the inside, bursting out, and rampaging through the facility until they finally crash through the outermost barrier of the complex to freedom. The Huddle tumbles down a steep mountainside and finally comes to rest on a small beach, bathing in a warm ray of light as the game begins its credits (Fig.52). This closing image is doubly significant, functioning as both a crucial visual clue that catalyzes critical reflection on the reality of the game world, as well as an affective figure that amplifies and complicates the player's feeling about the outcome of their gameplay.

[156] This is the name the developers gave for the creature in their presentation at the Game Developers Conference, 2017. They define "The Huddle" as a "compound, fully humanoid blob of muscle, fat, skin, and bones" (Grntved 2017).

Figure 52 - At Rest Outside in *INSIDE*

After breaking through the outer wall of the facility the Huddle finally comes to rest on a small beach. [video: see supplemental files]

Most videogames include some type of "valorization of outcome," and in non-competitive games that emphasize story this often comes in the form of a cutscene that provides satisfying closure, or celebratory aesthetic effects unambiguously signaling player triumph and completion of the game.[157] *INSIDE*, however, ends in a mixed message that causes the player to question the subtle signs of valorization they might read into the moment by design. The light shining on the freed Huddle creates a positive feeling through its severe contrast with the pervasive gloom of the dystopian world, and the tranquility and passivity of the idyllic moment,

[157] In his book *Half-Real* ludologist Jesper Juul characterizes the "classic game model" which identifies six essential attributes of games: fixed rules, negotiable consequences, variable outcome, player attachment to outcome, player effort, and valorization of outcome (37-41). The last, "valorization of outcome," is mainly discussed in the context of multiplayer, rule-focused competitive games, and is associated with clear win/loss dynamics. However, this concept of valorization of outcome is easily adaptable to single-player, story-focused game types, including action and puzzle platformers which often valorize *completion* or *fulfillment* of given objectives rather that "winning."

which palpably contrasts with the preceding sequence of frenetic action, anxiety and violence, forms a subdued figure of the hero isolated and illuminated for admiration. Yet the Huddle also appears to be incapacitated as the groans and sounds of struggle go silent and the heaving of the mass subsides, suggesting slow expiration as somber music overtakes the calming sounds of the waves, recalling the tone of the music when the boy first encounters the control device at the farm. Thus the player is left with ambiguous feelings about this outcome, feelings that are transformed as reflection takes over and closer attention is paid to the scene.

The final scene itself serves as one of the most effective visual clues that there is more to consider in the game, rewarding previous attentiveness and musement on the representations of control throughout gameplay. At one point during the frantic escape from the facility the Huddle falls through a floor into a large-scale diorama that depicts the final scene of the game (Fig.53), foreshadowing the exact outcome of the player's struggle to escape to the outside. Making this connection is impossible in the first run, since recognizing the scene modeled there requires reaching the end. This not only suggests to the player that a *second run* may yield more understanding, prompting the player to reflect on and synthesize previous unresolved interpretations of the world for more insight, closer inspection of the diorama reveals that the escape from captivity and control was an illusion. The symbolically meaningful light shining through the darkness at the end turns out to be a spotlight indicating the planned resting place of the Huddle, suggesting to the player they are in caught in a larger manipulation experiment themselves. This realization sends the player back inside the game to try to discover the true

"outside," animated by a sense of purpose that can only be formed in critical reflection on and interpretation of the initial experience.[158]

Figure 53 - The Diorama in *INSIDE*

The player falls through a floor into a diorama of the final scene of the game. The light hitting the beach is actually a spotlight marking the final resting place of the Huddle.

There are several designs that affirm and corroborate this reflective reorientation of the player and their sense of purpose. For example, the player is mechanically channeled into a second run through the looping design that transitions them seamlessly and continuously from the final scene to the opening action (Fig.54). The closing and opening scenes are designed for

[158] This example of design for reorientation through active player reflection on diegetic information can be compared to the example of active questing in *Morrowind* discussed previously (Ch.2.5-2.6). The difference here is that while open-world CRPGs place this design at the center of gameplay, mediating exploration and purpose throughout, the linearity of platformers like *INSIDE* such design can only reorient subsequent play and interpretation of the expressive goals of the game.

aesthetic continuity and comparison: the "nature" sounds of the coastal wind and waves in the final scene correspond to the sounds of rustling leaves in the windy forest at the beginning, and the repetition of the action of descending into an illuminated clearing. These details encourage the player to reflect on the similarities between these scenes and their meaning in the emerging narrative of control and reenter the game oriented and informed by a new understanding of the game as expression.[159]

Figure 54 - The Control Loop in *INSIDE*

The final scene of the game (left) transitions to credits displaying over the image, with the sounds of the ocean before giving way to somber tones. Fading to black, the game loops back to the title screen and into the opening scene in the forest (right), with the boy dropping down into the light. [video: see supplemental files]

[159] In fact, this comparison also points to the third and final run after the second, which ends exactly as the first, since the similarity between the opening scene and the last leads to the conjecture that there is no escape from control "within" the game's primary narrative in which the boy liberates the Huddle by taking control of it.

In addition, the player may have stumbled upon one of fourteen hidden orb-shaped devices scattered throughout the gameworld (Fig.55). Finding these strange devices and unplugging them prompts the player to search for more in a second run, and reorientation from reflection on the first run induces speculation that deactivating them may change the outcome of the game. Inevitably, the strange devices become the focus of explorative gameplay and reflection in the second run as the momentum and economization of action normalized in the first run (by the gameplay of given puzzle-solving) is slowed. In the second run the player has a more reflective stance within gameplay, fully responsive to the aesthetics of slowness and inclined to exploration and diegetic musement. The experience of this run most reflects the subversion of the problem of rationalization in the critical design of *INSIDE,* since the logic of problem-solving is wholly replaced by exploring, re-imagining, and reflecting on the shape of the problem of control in the game.

Figure 55 - A Networked Control Device in *INSIDE*

The player can find these devices hidden in places throughout the occupied territory. They are always connected to a yellow cable, implying a networked system. There are fourteen in total and the player must deactivate all of them to enable the second ending in the final run.

The process of finding the orb devices reflects design against the logic of efficiency felt in the forward momentum of the first run. The player must backtrack, experiment, probe, explore spaces, and reason about visual clues in the environment. For example, the primary inference the player can make in this run is that the orb devices are nodes in a vast network constituting a system of control of unknown scope and kind. This inference relies on reading the experiences with the technology in the game closely and noticing the association of the color yellow with those devices that enable control or manipulation of the humans rendered docile by the organization's experiments.[160]

[160] There is much more to explore in this direction. The use of red, the only other spectral color appearing in the game, is also open for interpretation. It is used for the title, signals possible interaction or danger, such as its use for machinery buttons and brake lights on the trucks of the masked people, and most notably for the shirt of the

This realization both calls attention to and reframes a scenario in the research facility in which the scientists and technicians seem to aid the Huddle. The player is lured into the center of what appears to be an amphitheater, and dangling above is a pneumatic device the player has previously used in puzzle-solving. As the player positions the Huddle to reach for the device out of habit a trap door below opens and the creature is captured again as it falls into another holding tank (Fig.56). The scene takes on new meaning in this slowed, secondary experience. In the first run the entire experience of escaping the research facility is characterized by the momentum of habit, having been trained to recognize the device as a required tool, and primed by the previous scene in which the researchers aid the Huddle with the same device, the gameplay is automatic and reactive. Initially, the scenario has no meaning beyond a setback in the game, yet the player is now positioned to see its greater significance given that the device is accented with the color yellow. However, unlike the devices that enable literal, direct control, the game creates a scene of indirect control in which the dangled device is transformed into a symbol of manipulation of the player by the game. This moment suggests the player is easily manipulated by designs that leverage habituation and the logic of efficiency inherent in rationalization of gameplay, a message developed further by the design of the final run.

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protagonist. The visual allusions to Nazi occupation and monochromatic design invite extension, and the player may connect the red-shirted boy to the famous "girl in the red dress" in the film *Schindler's List* (1993).

Figure 56 - The Dangling Device in *INSIDE*

The player is lead to the center of the room by the dangling device and captured in a holding tank below as the trap door opens. In the darkness beyond the spotlight are hundreds of observers watching this unfold. The prominent yellow outline of the device connects it to other symbols of control. [video: see supplemental files]

Having found and deactivated all the hidden control orbs the player again enacts the Huddle's escape from the facility only to discover the outcome remains the same. *INSIDE's* alternative ending, in which the outcome does actually change, can only be achieved through serendipity in player exploration during a third run since the secret area in which it takes place is thoroughly hidden and counterintuitively located in the gameworld. Furthermore, the forms of difficulty involved in achieving this ending reconnect the activity of play to *inquiry*, repelling the unreflective or casual approaches to gameplay that dominate mainstream design in the ludic century.

Aimlessly yet intensely searching, the player can find a trap door in the middle of the cornfield encountered early in the game, just outside the farm building where they first discover the control helmet. Descending into a strange shelter they find a sealed door that can only be unlocked by repeating a sequence of tones on a nearby device. That these tones have to be remembered from listening to VHS tapes playable at a select few of the hidden orb locations indicates a design strategy that imagines the player as a meticulous researcher, effectively reframing the game as an object of inquiry rather than amusement. This challenge gestures to the time "outside" of the game, the slow, desynchronized temporality of note-taking, map drawing, diagramming, schematizing, and recollecting that many classic adventure games placed at the center of their design.

Finally, beyond the door the player follows a narrow cave passage to an abandoned bunker littered with deactivated orbs and containing a control helmet connected to a mainframe. On the far wall is a concealed plug that, when pulled, powers everything down. As all light wanes into complete darkness the boy can be seen slowly slouching into a fetal crouch, resembling the dormant posture of the docile humans awaiting a controller (Fig.57). This second ending simultaneously represents the freedom of the boy from the player's control, and symbolizes the player's escape from manipulation by the game.

Figure 57 - Pulling the Plug in *INSIDE*

The second ending is accomplished by pulling the power that sustains the control network in the game world. As the boy disconnects the power the machines go dark and the boy goes dormant. [video: see supplemental files]

What is most telling about this event is that expected results of the diegetic act of disabling the system of control within the dystopian world are not represented in the game at all. Instead, the game links the act and the player's diegetic motives - to disable a technology of human control, liberate the exploited humans, free the Huddle, sabotage the occupation, etc. - with the result of symbolically shutting down the game.[161] Thus the player is invited by this connection to reflect on the game itself as a technology of manipulation and control.

[161] I use "symbolically" here because the game software does not actually close down, which would be a more radical design, but instead fades to black for an extended pause before finally returning to the title screen.

The theme of inside and outside, initially interpreted in relation to the red-shirted boy's journey inside the occupation, to the Huddle, and their escape to the outside, beyond the dominion of their technological control, is now applicable to the player. The player's journey from "inside" the game experienced as system of manipulation, an "aesthetic form of rationalization" inducing efficiency and instrumental control, to an "outside" in which the player is, ironically, more "present" to the game as a meaningful experience beyond amusement and pleasurable problem-solving. The idea of "outside" implied by the phased, looping experience of *INSIDE* explored above does not pertain to the common categorical distinction of inside and outside the game experience. Rather, it posits an "outside" that represents player dissociation from "fast," habitual, unreflective forms of play that remain "inside" the dominion of contemporary ludic phronesis and the attention economy native to dominant game design.

This idea of "outside" recalls Koepnick and the aesthetics of slowness which seeks to counter the "restless anticipation" that reduces our receptivity to the fullness of experience in order to "produce presence beyond the existing templates of meaning" (5). *INSIDE's* aesthetic and narrative strategies produce a presence to the game experience by slowly reorienting the player over the course of the multi-run experience. The "templates of meaning" the player brings - their genre expectations and the uncritical or plot-focused readings of the apparent situation - are not rejected but *used* by design for expressive effect, ultimately becoming an object of critical reflection as the game experience develops across the runs. Similarly, as noted above, the speed and attention economy of anticipatory puzzle-platformer gameplay are strategically modulated to prompt diegetic musement on details that develop into meaningful elements of reflection as the game becomes an explicit *problem for thought* in the secondary ending.

Taken as a comment on the relation between technology and humanity, *INSIDE* seems to express a view similar to that of Norbert Wiener at the end of *The Human Use of Human Beings*. In his synoptic account of cybernetics exploring the benefits of automation for human society Wiener includes a late chapter reflecting on future developments of cybernetic systems or "control machines" in which he expresses concern for "a class of machines which possess some very sinister possibilities" (175). Touching on simple "built-in purpose" machines that can communicate with the environment, and prosthetic machines that replace or amplify our sensory powers, Wiener imagines possible automatic game-playing machines that may someday be developed into autonomous governing machines that manage human decision-making processes and mediate all manner of human affairs.[162] Dismissing the possibility of a machine achieving autonomous control over society, stating that such a machine would be "far too crude and imperfect to exhibit a one-thousandth part of the purposive independent behavior of the human being" (180), Wiener nevertheless notes that:

> A sort of *machine a gouverner* is thus now essentially in operation on both sides of the world conflict, although it does not consist in either case of a single machine which makes policy, but rather of a mechanistic technique which is adapted to the exigencies of a machine-like group of men devoted to the formation of policy. (182)

For Wiener, the problem is not the specter of an artificial intelligence taking control or what machines themselves can do, but rather a systemic danger of increased *rationalization* and human exploitation presented by the indirect influences they have on human thought and

[162] Wiener recalls an early insightful review of *Cybernetics* in the French periodical *Le Monde* in which the author, Père Dubarle, imagines the automatic chess-playing machine posited by Wiener eventually becoming a "*machine à gouverner*" that "may achieve autonomous control over humanity" (180). Dubarle and Wiener are extrapolating from this example, imagining that computers programmed with domain specific versions of game theory, translated into algorithmic form, could be used to "optimize" decision-making in social institutions, including military and government. While Dubarle fears autonomy of the system, Wiener fears the dynamics its particular design creates.

practices. This is related to design, insofar as our machines compliment or privilege the "mechanistic technique[s]" of "machine-like group[s]" of people in positions of power, and implementation, insofar as the forms of efficiency and control they afford bedazzle or tempt us into unreflective use or habitual assent to their apparent power and efficacy.

Wiener's commentary on the *machine a gouverner* leads him to a distinction between the prevalence of "know-how" in modernity and the alarming lack of concern for "'know-what,' by which we determine not only how to accomplish our purposes, but what our purposes are to be" (183). *INSIDE* uses the arc of the game experience to dramatize the move from the "mechanistic techniques" and habitual focus on "know-how" that characterize reactive puzzle-solving to the slow, explorative play and deliberate musement on the "know-what" that characterize the reflective puzzle-thinking rewarded by its design strategies. Its final message about technology and control seems to be that getting "outside" is a slow, reflective, often traumatic process of exploration, experiment, and growing understanding (distinct from mastery). The final goal of play in *INSIDE* is not the efficient performance of control inside the game world but the development of greater self-control and critical distance in the interaction with the videogame as an aesthetic "control system." The intended result of its design is not the apotheosis of mastery and control, but of disillusionment (in the positive sense of losing your comforting illusions) and increased agency of the musing-player, transcending their implied default role as a gamer-operator.[163]

This close reading of *INSIDE* helps connect Koepnick's aesthetics of slowness to the problem of speed in the contemporary media ecology (Ch.2.3), foregrounding the technological dimension. While Koepnick identifies the aesthetics of slowness as an artistic response to a

[163] In *Gaming: Essays in Algorithmic Culture* Alexander Galloway uses the words "operator" and "machine" to refer to the player and game. While Galloway means to foreground material interaction through these terms, it also suggests an asymmetrical relation: the player becomes an *operator* in the use of the machine.

general problem of the contemporary and the experience of presence, in the domain of digital games it becomes the native resistance to the anti-reflection dynamics of the contemporary media ecology identified previously. The aesthetics of slowness exemplified by *Cart Life* and *INSIDE*, together with the fundamental design for musement (§2-3), foreground the problem of reflection in the needful project of producing presence in the particular conditions of the ludic century (Ch.3).

While engagement in the poetics of reflection is an integral part of the expressive strategies and artistic goals of these games, I believe their design strategies also reflect a practical recognition of Pedercini's concern for rationalization and a critical awareness of the conditions of gaming in the ludic century. In light of the arguments in all the preceding chapters we are now in position to see that pursuit of the poetics of reflection in digital games is not only an art strategy of "hacking accounting machines into expressive machines," it is always simultaneously a critical strategy of hacking digital cybernetic experience in general, of expanding the concept of digital gameplay, of transforming traditional amusement machines into machines for the cultivation of musement. Although reflection on the history of gaming likely calls to mind the figure of the conqueror, the optimizer, the problem-solver, perhaps the twenty-first century will establish the figure of the muser.

§4.6 | Coda: Neglected Argument for the Surreality of the Avant-garde

In lieu of a conclusion I would like to end with some brief, highly speculative remarks on the importance of the videogame avant-garde in the twenty-first century. If it is indeed going to be a *ludic century*, it will be necessary to consider the development of the avant-garde in the field

of digital games as a factor in the overall health and vitality of digital culture broadly. How large a factor depends on your estimation of the proximity influence gaming technologies, aesthetics, and online culture exert on the wider technology industry and its designs, and how much influence digital game experiences have on contemporary digital practices and culture. It seems impossible to quantify these influences, but we have nothing to lose in assuming they are significant and growing, and more experimental games and better game culture to gain at the very least.

In *Avant-garde Videogames* Brian Schrank makes a compelling argument for the importance of the avant-garde in the context of contemporary technoculture, a term used to indicate the growing interdependence of technology and culture in the last two centuries. He identifies the significance of digital games as media for critically processing our experience of the contemporary world increasingly shaped by technology:

> Not only are videogames an advanced product of technoculture, they are also a major site on which culture naturalizes the ways in which we think and play with technology. In this way, each game becomes a microcosm of technoculture itself. Games teach players how to engage and optimize systems as well as how to manage their desire in a contemporary world. This makes the world of games a principal site to expose, unwork, and rethink the protocols and rituals that rule technoculture. (Schrank 4)

In light of the critical contexts I have developed for situating the significance of digital games, namely the contemporary media ecology and the ludic century, and the corresponding arguments about the problems of speed and rationalization, the claim that games are teaching us "how to engage and optimize systems" and "manage desire" puts McKenzie Wark's argument about *gamespace* into stark relief (Ch.3.1). One need only add mention of "disruption" to summon

thoughts of American technology companies and their strategies of "optimizing the world." Here Norbert Wiener's concept of the "for what" comes rushing back as a question (and for the more cynical minded, an inevitable follow-up: *cui bono*?).

Accepting the premise that digital games are a site "on which culture naturalizes the ways in which we think and play with technology," it seems imperative, then, to actively "expose, unwork, and rethink" through games. Yet this is a difficult task, since as I have argued the function of most games is to amplify and render aesthetically pleasing the "protocols and rituals that rule technoculture," to function as accelerants and amplifiers of the problems of speed and rationalization in the contemporary media ecology. In distinguishing the avant-garde from mainstream games generally, Schrank acknowledges that "mainstream games strengthen the prevailing paradigm of flow, while avant-garde games weaken it, opening play to alternate paradigms" (7). Referencing Mihály Csíkszentmihályi's theory of flow, which is often adapted to discussion of game design and gameplay, Schrank indentifies mainstream design with the creation of gameplay that is optimized for autotelic experience and complete absorption in the given (apparent) challenges presented by the game. In these experiences the forms of contemporary ludic phronesis and "templates of meaning" spontaneously express themselves in play.

Videogames present an interesting case for Theodore Roethke's view about *Art* shared at the outset of this chapter. If artworks are a means of "undoing the damage of haste" in everyday life - of our habitual, unreflective engagements with the world - most games hardly qualify: videogames are very often simply an aesthetic form of "what everything else *is.*" The "everything else" is *just there* in its givenness, a part of what Dewey refers to as the "general stream of experience." For videogames to become "what everything else *isn't*" they will not only

require a persistent exploration of the poetics of reflection given the tendencies of the art form in the ludic century, but also the strategic experimentalism of the avant-garde given the dynamics of the contemporary media ecology and its prevailing attention economy.

Schrank identifies the avant-garde in the domain of videogames as a "force that opens up the experience of playing a game or expands the ways in which games shape culture" (3). In order to develop this perspective he imagines the historical avant-garde as a field with four fundamental orientations, arranging emblematic theorists, artists, and artworks in order to enable discussions of their artistic strategies through relations (Fig.58). Many will find much to criticize in this exercise, especially if approached as a tool for defining works or strict classification, but approached as a tool for probing and discussing examples and broad themes it is helpful. This formulation posits four cardinal vectors for avant-garde strategies:

1. Radical-Political (top left)
2. Complicit-Political (bottom left)
3. Radical-Formal (top right)
4. Complicit-Formal (top left space of the bottom right quadrant)

It is beyond the scope and outside the purpose of my comments here to explore the details of this formulation of the avant-garde, consequently much will go unacknowledged and left to further investigation. However, I would like to use Schrank's convenient formulation of the field as an aid to suggest why the strategies of what he identifies as the *Formal* avant-garde (3&4) are of particular importance in the ludic century.

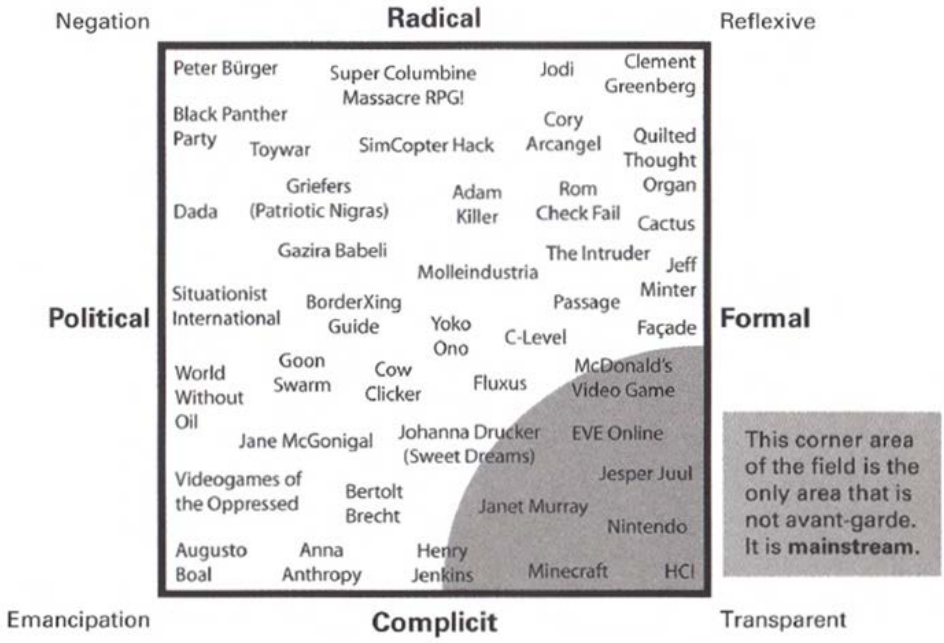

Figure 58 - Schrank's Field of the Videogame Avant-garde

Reproduction of Schrank's schematization of the field of the avant-garde mapping historical figures and artworks as well as games (20).

In a previous discussion of the critical developments of the ludic century I noted that Games for Change and the resulting expansion of subject matter addressed in digital games was an important and necessary development (Ch.3.7). The design strategies of Games for Change are part of the *Political* avant-garde in the field of games, with most projects emphasizing political and social changes on recognized problems (Fig.58, emancipatory, bottom left). These games have high cultural visibility and have the support of institutions, but as Pedercini points out, they often use conventional game designs to express their message or organize accessible gameplay, reproducing aspects of the problem of rationalization en route to their practical goals. The project of creating games to address contemporary political and social problems, and thereby "[expanding] the ways in which games shape culture" (Schrank 3), is surely a noble one. The

political strategies of the avant-garde imagine the gaming experience as a *cultural catalyst*, generating social and political awareness, new practices, forms of activism and resistance for the given dynamics of reality, or even negating them altogether in hopes of creating disruptive effects that result in change (Fig.59).

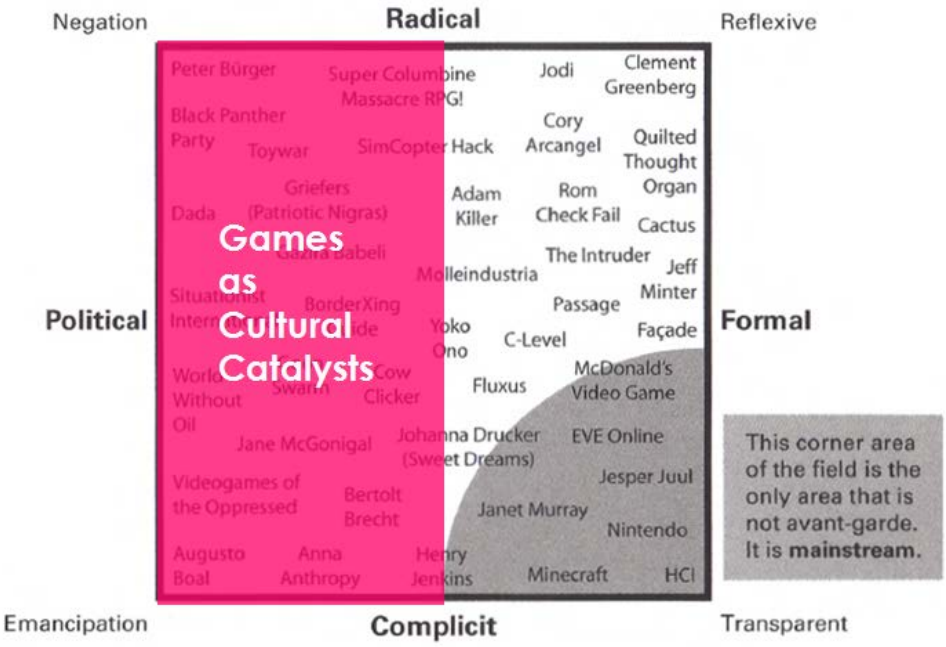

Figure 59 - Games as Cultural Catalysts

The political strategies of the avant-garde imagine games as cultural catalysts, activating awareness of given problems and causing targeted social actions.

The situation for the *Formal* strategies of the avant-garde for games is more complicated. The strategy of "open[ing] up the experience of playing a game" is unsettlingly close to the logic of innovation present in mainstream game design, as well as the general focus on the details of aesthetic experience in gameplay. However, unlike aesthetic strategies prevalent in mainstream games which focus on accessibility and experiences of flow, emblematic games of this strategy

like *Quilted Thought Organ* (Fig.60) actively disrupt habitual play and call attention to the aesthetic experience of gameplay itself, challenging the "templates of meaning" and patterns of perception we bring to gaming and inducing reflection. The more radical strategies actively retrain players on how to perceive and interact in gameplay.

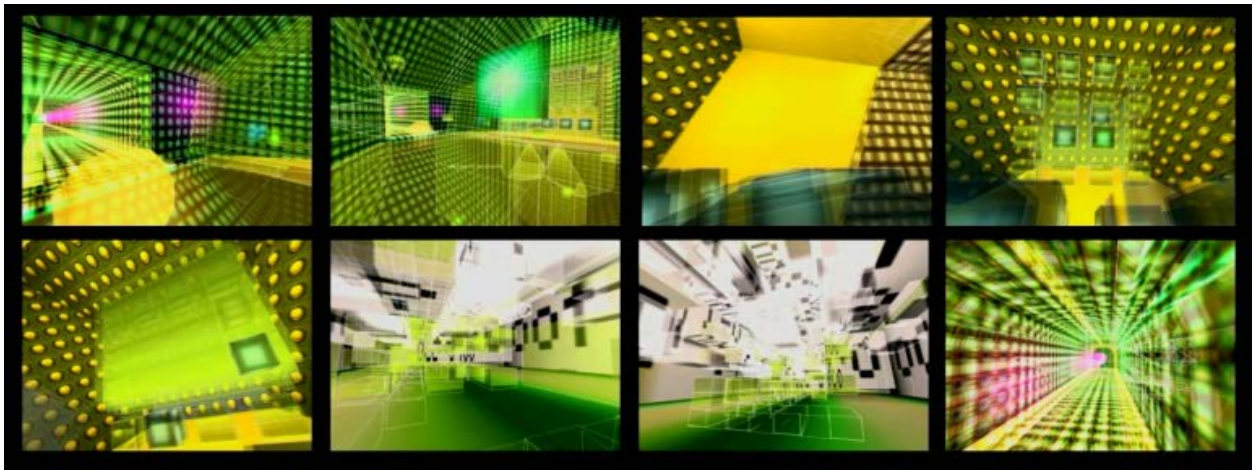

Figure 60 - Julian Oliver's *Quilted Thought Organ*

The game repurposes an FPS game engine to create a surreal experience of virtual space in which the players move to create non-diegetic sounds, experiment with illogical collision designs, and explore abstract visual and sonic spaces, and interact with objects that have no conventional purpose. [video: see supplemental files]

The formal strategies of the avant-garde imagine game experiences as "anti-environments," in McLuhan's sense of the term, an opportunity to reactivate our imagination and retrain habits of perception and action in gameplay (Fig.61). As McLuhan notes, this leads to a perception of the media environment itself: "As our proliferating technologies have created a whole series of new environments, men have become aware of the arts as 'anti-environments' or 'counter-environments' that provide us with the means of perceiving the environment itself"

(*Understanding Media* 14). This strategy of the avant-garde is particularly important now given the emerging character of the ludic century and basic conditions of mediation in the contemporary media ecology. Furthermore, it is the strategy best positioned to support and influence all the other domains of digital gaming and their objectives.

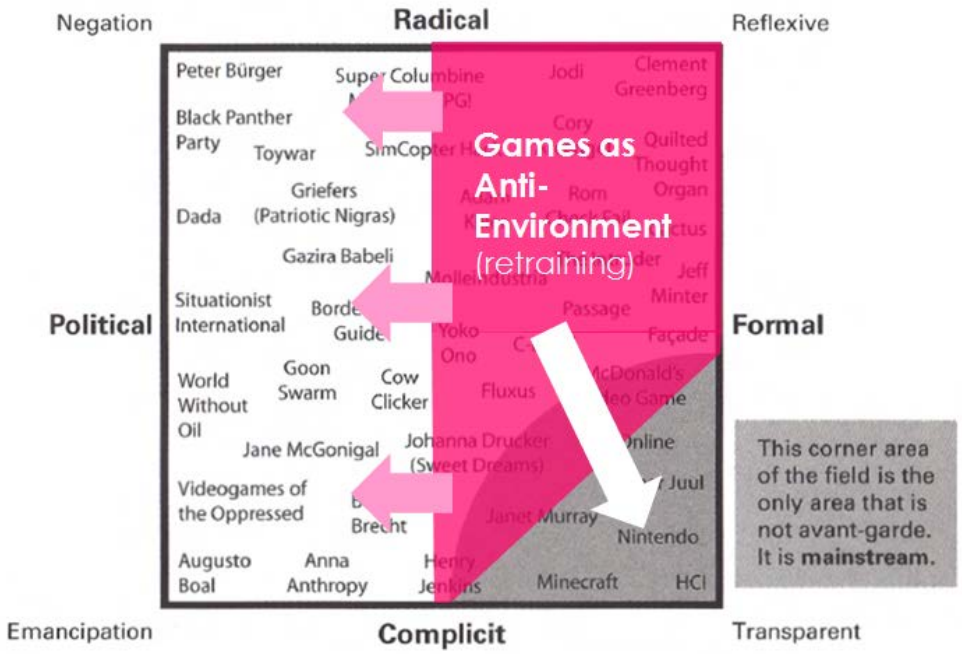

Figure 61 - Games as Anti-Environments

Games occupying the upper right half of the field are engaged in aesthetic experimentation and have a critical orientation toward the platforms and mediums they use. While these games have almost no cultural visibility, they have the greatest potential to affect change in the other domains, especially given the dynamics of the contemporary media ecology (Ch.2).

While a call to focus on the formal avant-garde and experimentation with aesthetic experience may read as a rather untimely and conventional argument for the importance of the avant-garde, based on arguments about Art and a necessary persistence in rethinking or expanding art forms, breaking traditions, and so on. However, my argument here is a neglected one, at least in the academic discourse on digital games and in the communities that assume

games are a vital organ of cultural change. It has less to do with Art and its historical advancement through the avant-garde and more to do with a neglected opportunity for the avant-garde to address our digital moment in a strategic way. The implied goal is a vigilant shaking of the habitual in all domains, but an obvious first task, to my mind, is the active *surrealization* of digital gaming in order to counter its rationalization in the ludic century. This will increase the expressive potential of digital games in general, and it will go a long way toward affirming Roethke's claim and acknowledging Lanier's warning in a crucial domain of contemporary culture.

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Vita

Terry Schenold was born in Chicago, Illinois but grew up in southern California in the city of Whittier. He earned degrees in Philosophy and English at Whittier College before moving to Seattle to pursue graduate work in English at the University of Washington, planning to study American literature and become a Melville scholar. His interest in narrative, poetics, and digital media lead him to digital games. In 2007, he was a founding member of the Critical Gaming Project at University of Washington, and began teaching philosophy, intellectual history, media and game studies courses for the Comparative History of Ideas department. He is also currently adjunct faculty in the Humanities and Sciences department and occasional collaborator in Design at Cornish College of the Arts. He remains in Seattle with his wife and daughter. He still loves Melville.