



Luciana Barroso Gattass

Digital Literature: Theoretical and Aesthetic Reflections

Tese de Doutorado

Thesis presented to the Postgraduate Program in Letters of the Departamento de Letras do Centro de Teologia e Ciências Humanas, PUC-Rio as partial fulfillment of the requirements for the degree of Doutor em Letras.

Adviser: Prof. Heidrun Friedel Krieger Olinto de Oliveira



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Bibliographic Data

Gattass, Luciana Barroso

Digital literature: theoretical and aesthetic reflections / Luciana Barroso Gattass; adviser: Heidrun Friedel Krieger Olinto de Oliveira. – 2011.

192 f. : il. (color.) ; 30 cm

Tese (doutorado)–Pontifícia Universidade Católica do Rio de Janeiro, Departamento de Letras, 2011.

Inclui bibliografia

1. Letras – Teses. 2. Literatura digital. 3. Processos ergódicos. 4. Produção de presença. 5. Interatividade. 6. Intermedialidade. 7. Remediação. 8. Performance. I. Oliveira, Heidrun Friedel Krieger Olinto de. II. Pontifícia Universidade Católica do Rio de Janeiro. Departamento de Letras. III. Título.

CDD: 800

To Bernardo,
my very own listening post.

Acknowledgements

This thesis is the happy result of tremendous influences from the work and guidance of my advisor, Dr. Heidrun Krieger Olinto de Oliveira. All thanks go to Heidrun, whose rare wisdom, kindness, knowledge and sheer *presence* never fail to astound those who are fortunate enough to cross her path. I would also like to thank the National Council for Scientific and Technological Development (CNPq) for the financial support of my research, as well as the PUC-Rio/Brown University Visiting Scholar Exchange Program – Prof. Karl Erik Schøllhammer, in particular – for a most incredible opportunity to spend a semester at Brown University. I am hugely indebted to my professor and friend, Dr. Júlio César Valladão Diniz for his steadfast support of my work. I should also like to thank the committee – Dr. Júlio Cesar Valladão Diniz, Dr. Erick Felinto de Oliveira, Dr. Marcello de Oliveira Pinto and Dr. Rejane Spitz –, whose careful and interdisciplinary reading of the text left me inspired and encouraged to take on *new new media* challenges. I extend my profound gratitude to my supervisor at Brown University, Dr. Roberto Simanowski, whose work first stirred me into academic motion, and to my professor and friend at the Digital + Media Department at RISD, Dr. Francisco J. Ricardo, who gives me more credit than I give myself. I also want to thank Dr. John Cayley at Brown University for four exceptional visits to the CAVE. Finally, a great many friends, family members and colleagues were instrumental during the protracted gestation period of this thesis. These especially include Cátia Assunção, Teresa Bastos, Stella Caymmi, Danusa Depes, Christian Dutilleux, Marcelo Gattass, Ricardo Gattass, Irene Leonardos (in memoriam), Sergio Machado, Mariana Maia, Mariano Marovatto, Mariana Newlands, Mario de Mello Santos, Cesar Olinto, Carlos Pittella, Debora Sapoznik, Peter Shepherd (in memoriam), Fátima Vasconcellos, Roberta Vieira and Bruno Távora. Their humor and friendship have certainly kept me grounded. Special thanks go to Carolyn Oliveira, Marcia Manhães at Sergio Gattáss Arquitetos Associados, Cássio Gondim at Tecgraf/PUC-Rio and Francisca “Chiquinha” Fereira de Oliveira at Departamento de Letras/PUC-Rio. Their unique blend of efficiency and kindness never ceases to amaze me. Needless to say, I would not have been able to write a single line without the love and support of my parents, Marcia Sampaio Barroso and Sergio Gattass.

Abstract

Gattass, Luciana Barroso. Heidrun Krieger Olinto. (Adviser). **Digital Literature: Theoretical and Aesthetic Reflections**. Rio de Janeiro, 2011. 192p. Ph.D. Thesis – Departamento de Letras, Pontifícia Universidade Católica do Rio de Janeiro.

The emergence of a new phenomenon – digital literature – within the field of literary studies calls for the reorganization and creation of new theoretical and analytical repertoires. Since digital literature partakes of literary tradition as well as introduces critical medial and conceptual innovations that challenge the very concept of literary frontiers and spaces, its scholarly analysis demands significant reformulations in literary studies. As models of communication change, so do the reception and production processes accompanying these changes. Within these altered scenarios, the thesis *Digital Literature: Theoretical and Aesthetic Reflections* is a response to the aesthetic and theoretical challenges brought on by computer-based literature. As a methodological strategy, the thesis articulates recent trends in the theory of digital aesthetics – remediation (BOLTER), eventilization (HAYLES), correlations of performativity, intermediality and interactivity with meaning-driven analysis (SIMANOWSKI), *Medienumbrüche* (GENDOLLA & SCHÄFER) – with theories of production of presence (GUMBRECHT), autopoietic communicative models (LUHMANN) and close-readings of digital works. By scripting a dialogue with key theorists from print literary theory as well as new media theorists and artists in the burgeoning field, the thesis offers conceptual and theoretical contributions to the formulation of a poetics of new media.

Keywords

Digital literature, ergodic aesthetics, production of presence, interactivity, intermediality, remediation, flickering signifier, materiality, embodiment, *Medienumbrüche*.

Resumo

Gattass, Luciana Barroso. Heidrun Krieger Olinto. (Orientadora). **Literatura Digital: Desafios Teóricos e Estéticos**. Rio de Janeiro, 2011. 192p. Tese de Doutorado – Departamento de Letras, Pontifícia Universidade Católica do Rio de Janeiro.

A emergência de um novo fenômeno – a literatura digital – na esfera disciplinar dos estudos literários provoca a reorganização e invenção de seus instrumentos analíticos e de seus circuitos de comunicação. Concepções de literatura, historicamente instáveis e deslocando constantemente as suas fronteiras e seu horizonte de expectativa, hoje são marcadas também por travessias do espaço escritural. Neste quadro a tese, *Literatura Digital: Desafios Teóricos e Estéticos* responde aos desafios teóricos e estéticos contemporâneos elaborando novas formas de saber que permitem entender e circunscrever a literatura digital em contextos de produção e recepção alterados. Inserida simultaneamente em uma tradição e defendendo o seu lugar no cenário contemporâneo, este tipo de literatura requer assim revisões e reformulações significativas. Por enquanto ainda faltam contornos à própria literatura digital, e os processos de teorização circulam em espaços predominantemente transdisciplinares. Ao estabelecerem reciprocidade através da epistemologia da complexidade, a cultura midiática e a teoria da literatura vêm desenvolvendo alianças no campo das possibilidades analíticas das obras literárias digitais. Como estratégia metodológica, a tese alia teorias de produção de presença (GUMBRECHT), eventilização (HAYLES), remediação (BOLTER), teorias autopoieticas de comunicação (LUHMANN), análise estética do fenômeno digital – interatividade, intermedialidade e performance (SIMANOWSKI) – e *Medienumbrüche* (GENDOLLA & SCHÄFER) a um olhar sobre realizações concretas (*close-readings*). Em suma, a tese oferece um repertório conceitual inovador formulando fundamentos para uma nova poética digital.

Palavras-chave

literatura digital, processos ergódicos, produção de presença, interatividade, intermedialidade, remediação, materialidade.

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Think of the Turing test as a magic trick. Like all good magic tricks, the test relies on getting you to accept at an early stage assumptions that will determine how you interpret what you see later. The important intervention comes not when you try to determine which is the man, the woman, or the machine. Rather, the important intervention comes much earlier, when the test puts you into a cybernetic circuit that splices your will, desire, and perception into a distributed cognitive system in which represented bodies are joined with enacted bodies through mutating and flexible machine interfaces. As you gaze at the flickering signifiers scrolling down the computer screens, no matter what identifications you assign to the embodied entities that you cannot see, you have already become posthuman.

Katherine Hayles, 1999

1 Introduction

1.1.

Foreword: Not Completely Alone in the Room

Since all presence is presence only at a distance, the tele-presence of the era of the globalization of exchanges could only be established across the widest possible gap. This is a gap which now stretches to the other side of the world, from one edge to the other of present reality.

Paul Virilio, 2005.

This is not a linear thesis. There is no *télos*, in the strict sense of the term, but rather many entry and exit points. In many regards, like its theme, it is a space of theoretical and practical negotiations. Insofar as literary communication can be regarded as a sphere of both reflection and conception of new modes of human self-description, I claim that the phenomenon of *digital literature* is structurally and semantically bound to the medium of its production – i.e., its vehicles of distribution. Because digital literature both inscribes itself in literary tradition and imposes material/medial transformations that redefine what is to be construed as literature, its scholarly analysis calls for significant conceptual revisions and reformulations in literary theory. Necessarily transmodal in the sense that it cuts across modes of cognition, digital literature comprises far more than the typographic sign alone – sound, image and movement being integral constituents of its augmented textuality. My methodology is thus grounded on the hypothesis that by adopting a descriptive tone in the analysis of specific, digitally-born works, original theoretical tendencies will become visible and distinguishable. The idea, rooted in pragmatic and constructivist activities (FINKE, 1989), is to write a scholarly text which stands on

oscillating grounds between empirical analysis and case studies.¹ I am concerned with the two fundamental challenges facing the scholarly assessment of digital aesthetics today: (a) the compilation of a corpus of artworks representative of the multimodality of the field, and (b) borrowing from Anna Münster’s terminology, the “the insolvent place of the body” (MÜNSTER, 2006, p. 3) vis-à-vis processual (code-driven) mediation strategies. I substantiate my hypothesis on the empirical observation that new media objects have been displaying increasing structural ambivalence: the debate on the distributed ontology of “flickering signifiers” (HAYLES, 2006) emerges in the precise cultural moment when aesthetic theory grapples with the “neglected sphere of the body” (GUMBRECHT, 2004). From a systemic-slanted theoretical stance, one must attempt to internally articulate two paradoxical descriptions, namely, the dispersive processual logic of electronic language – the fact that it is a distributed phenomenon of immaterial code-strings (HAYLES, 2005) – with the manifest profusion of sensory-oriented, proprioceptive interfaces, favoring immersion and tactility. My contention is thus that there are theoretical grounds for “reading” these new literary objects in light of non-hermeneutic, presence-driven, aesthetic theories (GUMBRECHT, 2004).

In the preface to their 2007 *The Aesthetics of Net Literature: Writing, Reading and Playing in Programmable Media*, theorists Peter Gendolla and Jörgen Schäfer question whether the underlying openness of networked communications can be successfully integrated with the aesthetic demands of literary closure (GENDOLLA & SCHÄFER, 2007). I submit that the “problem of openness” can be solved by adapting the analyses of digital literary objects to recursive parameters – which imply a readjustment in reader-response models (Cf. LUHMANN, 1995; SCHÄFER, 2010; JÄGER, 2010). Today the boundaries comprising the field of digital literature remain largely undefined. Theorizations and prognoses about this discipline consequently travel in predominantly interdisciplinary spaces.

¹ This tentative new approach seems appropriate in light of a widespread concern with the lack of secure theoretical repertoires with which to analyze digital literature. To cite one example, in her doctoral thesis defended in 2000 at Heidelberg University, *Literatur im Internet: Theorie und Praxis einer kooperativen Ästhetik*, Christiane Heibach suggests the “hyperlectic oscillation” between all aspects of the digital medium, attained through an aesthetic of cooperation between theory and praxis (OLINTO, 2002).

Nesta situação, onde se mesclam convicções epistemológicas e projetos políticos, o acento de sinal positivo é atribuído, de modo geral, a modelos que enfatizam domínios inclusivos, esferas *intermezzo*, espaços *in-between*, que privilegiam heterarquias e heterodoxias, mas que atendem, igualmente, às necessidades de construir campos conceituais de altíssima complexidade e mobilidade, capazes de tornar visíveis os modos de experiência vivencial nas sociedades contemporâneas a partir de seus próprios modelos de representação. (OLINTO, 2009, p. 10)

The coupling of literary theory and epistemology of complexity is not unprecedented in literary studies. In order to establish productive reciprocity, literary and new media theories have been displaying promising paths in the analyses of new hybrid, computer-based, literary communication models. My belief is that through descriptive readings of particular works (a variation on close readings), it will be possible – or more plausible – to develop a conceptual and theoretical repertoire with which to approach digital literature. Methodologically, the thesis *Digital Literature: Theoretical and Aesthetic Reflections* tackles the aesthetic and theoretical challenges wrought by computer-based communications through a heuristic approach to digital literary objects. Highly context-dependent and profoundly informed by cultural and historic specificities of the self-described “information age,” the examples to follow are intended to present scholars with a variegated conceptual repertoire. The five chapters include a selection from the scholarly literature extant in the burgeoning field of digital aesthetics as well as possible interchanges with “print” literary theory.

To agree with Niklas Luhmann by displacing his argument, I posit that society’s “loss of faith in the correctness of its self-description” (LUHMANN, 1998, p. 1) does present us with an advantage: adequacy is no longer an issue and paradoxical conditions can be coextensive within contexts which privilege difference rather than consensus. This is why I cannot completely agree theorist Roberto Simanowski – whose work informs many of my pages – that we should regard a return to hermeneutics as a dismissal of presence theories as per Hans Ulrich Gumbrecht’s theorizations (GUMBRECHT, 1988, 1997, 2004). On the one hand, literature does presuppose recursive semantic operations – not the search for stable, fixed, definitive and “correct” meanings, but the acknowledgement that processes of

signification are inherent to human cognitive faculties. On the other hand, there is a case to be made for the re-inscription of the material body in the artistic midst.

Structure:

Chapter Two both adopts and problematizes Roberto Simanowski's method of close readings in digital literature (SIMANOWSKI, 2007; LOOY & BATENS, 2002). Contesting fundamental intricacies of early terminological debates – Simanowski's claim that *digital literature* is informed by its dependence on the technological medium (the “genuineness of the medium”) (SIMANOWSKI, 2007) –, the discussion recovers key provisional tropes of digital literature, such as interactivity, intermediality and performance (SIMANOWSKI, 1999; 2007). The chapter also sheds initial light on the ontological difficulties embedded in Katherine Hayles' notion of the “flickering signifier” (HAYLES, 2006). The principal examples found therein are the “ambient time-based” poetic language painting, *Overboard* (2004), by John Cayley and Gilles Perring and Alex Gopher's *The Child* (1999), a fringe experiment consisting of a video clip that makes aesthetic use of animated text and sound synchronicity.

Chapter Three pinpoints the evolutionary steps leading to the transition from orality to literacy. Regarding the development of alphabetic writing (ONG, 1982; MCLUHAN, 2008) as a progression of various processes of technological remediation (BOLTER, 1991) – i.e., writing as *téchne* –, I am able to draw parallels between early technological transitions (i.e., codex to the printed book) and the advent of computer-based communications. Additionally, the chapter addresses two key concepts in new media theoretical discourse, namely, hypertext (NELSON, 2003) and ergodic literature/cybertext (AARSETH, 1997). The latter is expanded into a conceptual dialogue with Markku Eskelinen's ludological approach to Genettean narratology (ESKELINEN, 2007; GENETTE, 1972) and Umberto Eco's model of the open work (ECO, 1989). Literary hypertext works, such as *Afternoon: A Story* (1995) by Michael Joyce and *The Impermanence Agent* (2003) by Noah Wardrip-Fruin are analyzed within these frameworks. Noticeably, Chapter Three ends with a

detailed description of Gumbrecht's theories of presence (GUMBRECHT, 1988, 2004) to be revisited within the contexts of mixed media immersion (**Chapter Five**) and embodiment (**Chapter Six**).

Chapter Four explores the work of artist Eduardo Kac as a theoretical point of departure for further investigation of Hayles' oft-quoted posthuman view (HAYLES, 1999). Descriptions of the *Genesis* installation and Kac's *Holopoetry* (1980s) are found therein. Moreover, through the critical examination of Peter Gendolla and Jürgen Schäfer's theories of media upheavals (*Medienumbrüche*) (GENDOLLA & SCHÄFER; 2007, 2010), I sketch an argument around new tendencies in theorizations of digital *literariness* as recovered from formalist debates (SIMANOWSKI, 2010; STREHOVEC, 2010; GENDOLLA & SCHÄFER, 2010). As a theoretical provocation, I revise Stanley Fish's concept of interpretative communities (FISH, 1980) in light of Katherine Hayles' definition of digital literature (HAYLES, 2008). The chapter ends with an epistemological contemplation, revisiting notions of postmodernism (HUTCHEON, 1988; HUYSSSEN, 1986), avant-garde (BÜRGER, 1984; GREENBERG, 1939) and software avant-garde (SIMANOWSKI, 2011; MANOVICH, 2001; STRINGER, 2001; KOSKIMAA, 2010). For illustration purposes, I scour concrete examples of generative text (the "textual instruments," *Regime Change* (2003) and *News Reader* (2004) by Noah Wardrip-Fruin), net.art (*Web Stalker* (1997) by I/O/D and radical experiments such as Caleb Larsen's *A Tool to Deceive and Slaughter* (2009) and Zachary Booth Simpson's *Mondrian* (2004).

Chapter Five opens with a discussion on the close theoretical relationship between concrete and digital/kinetic poetry (HAYLES, 2006; SCHAFFNER, 2010; BEIGUELMAN, 2010). It also introduces a detailed close reading of the immersive interactive installation *Text Rain* (1999) by Camille Utterback and Romy Achituv. Scripting a dialogue with theorist by Francisco J. Ricardo (RICARDO, 2009), my reading of *Text Rain* both comments and expands on issues of digital ontology and altered receptive scenarios, including a brief foray into Niklas Luhmann's systemic approach to theories of interpenetration and communication – which assume premises

derived from Heinz von Foerster's second-order cybernetics as well as Humberto Maturana's autopoietic cognitive biology (LUHMANN, 1988, 1995, 1998).

Chapter Six is the conclusion. It recovers Gumbrecht's reading of Martin Heidegger's concept of Being as it relates to Gumbrecht's concept of production of presence (GUMBRECHT, 2004) and Martin Seel's aesthetic of appearing (*Erscheinen*) (SEEL, 2005). The debates on the granularity of aesthetic experience are readdressed – Gumbrecht's priority of “lived experience” (“*ästhetisches Erleben*”) over “aesthetic experience” (“*ästhetische Erfahrung*”). The chapter also recuperates Hayles' discussion of “flickering signifiers” and disembodied informational patterns as a way to incite debate on Gumbrecht's ontological – i.e., substantialist – claims. The examples discussed are two virtual reality (VR) pieces designed for Brown University's Cave, a room-sized virtual reality display – respectively, Noah Wardrip-Fruin's *Screen* (2002) and Claire Kwong's *Aphasia* (2010). The chapter ends with an extended reading of Ben Rubin and Mark Hansen's *Listening Post* (2003), an immersive installation which utilizes natural-language processing algorithms and a commercial text-to-speech (TTS) engine to parse and synthesize snippets of online conversations culled in real-time from unrestricted chat rooms, bulletin boards and online forums. The data stream collected (text) is simultaneously relayed in varying visual patterns across a suspended array of vacuum fluorescent chain-circuit displays (HANSEN & RUBIN, 2002).

Swallowing the words of this world: timely disclaimers

I structured the discourse of my extended “close readings” after Hans Ulrich Gumbrecht's “descriptive surface perceptions,” deployed in his *In 1926: Living on the Edge of Time* (GUMBRECHT, 1997). The idea in these theoretical exercises is to (as much as possible) “get my hands dirty,” to once again quote Gumbrecht. Then again, given the nature of this assignment, a doctoral thesis, I could not refrain from contextual analyses and theoretical problematizations. I leave the reader with the following consideration extracted from Eva Knodt's outstanding foreword to Niklas Luhmann's English edition of *Social Systems* (1995): “the message announcing the

end of books is [recursively] contained within the covers of – a book” (KNODT in LUHMANN, 1995, p. x). Here, too, presence will be bound to abide by the constitutive tyranny of scholarly writing.

2. Looking Closely

2.1.

Methodological Justifications

Why close readings? One of the proponents of the close-reading approach to digital literature, Roberto Simanowski, founder of the online publication *dichtung-digital*, enthusiastically welcomed the publication of Jan Van Looy and Jan Baetens' *Close Reading New Media: Analyzing Electronic Literature* (2003):

After years of terminological and theoretical debates this book is aiming at providing case studies long overdue. It does not insist on asking whether we should talk of digital, electronic, interactive, or ergodic, of hypertext-, net-, cyber, or code literature but rather asks how we can read this literature. (SIMANOWSKI, 2007, p. 43)

The sheer conviction that terminological and theoretical debates are by no means finalized would prevent me from sharing in this celebration. Nevertheless, I do partake in the enthusiasm accompanying new critical approaches. That theorists and critics have chosen to refocus their studies on *how* we can read digital literature and, more importantly, how to enmesh aspects of digitality with the larger discourse of literary theory seems indicative of a larger epistemic shift – one in which the ontology of the language of new media is no longer challenged (unless it is to formulate theory). For the purposes of these introductory remarks, I would submit the following hypothesis: case studies (i.e., close readings) – which, in the case of this thesis, will translate into methodological strategies of coupling theoretical premises with descriptive analyses of concrete examples – *constitute* the theoretical debates in digital theory.¹

¹ Description here is meant to counter, or problematize, purely interpretative (hermeneutical) approaches (Cf. GUMBRECHT, 1997).

Van Looy and Jan Baetens substantiate the scarcity of critical approaches to digital literature with three principal justifications. I shall follow in their footsteps as a means of: (a) introducing the difficulties with which digital literature was inimically and initially faced, and (b) offering possible counterpoints which help justify my own theoretical interest in the field. Firstly, there was a widespread conviction amongst literary theorists that digital literature was “unworthy” of serious theoretical scrutiny: indeed, that “[critical attention was] not appropriate to works belonging to a medium which has as one of its primary principles the absence of – literally – fixed meanings” (LOOY & BAETENS, 2003, p. 7). Simanowski offers an excellent response to this claim by pointing out that the fact that digital literature is predominantly open should not threaten literary theory, which has had to cope with indeterminacies in the past as per the case of concrete poetry, demanding conceptual adjustments from literary theory and criticism and transferring predicative processes to the “non-linguistic realm” (SIMANOWSKI, 2007, p. 43).²

Secondly, literary critics and theorists operated in accordance with the presupposition that hypertext constituted a marginal genre – one indeed literally born “on the margins of a medium, the computer, which [was] still considered a number cruncher” (LOOY & BAETENS, 2003, p. 8). Clearly dated (digital media can hardly be labeled subsidiary), this objection can now be easily overcome – regardless of whether or not one agrees with theorist Espen Aarseth in his assertion that emerging technologies matter not in themselves, but should be studied because of their potential to frame human communication (AARSETH, 1997). For my part, I do believe that, at the level of operations, technologies do forge communications. Insofar as I understand literature as a byproduct of literary communication, I would therefore argue that a study of digital literature should account for the ways in which new technologies inform the principles of aesthetic communication. The fact of the matter is that literature in the 21st century is “computational,” as N. Katherine Hayles very precisely puts it in her *Electronic Literature: New Horizons for the Literary*

² It is interesting to note, however, that Simanowski opts to speak of hermeneutic approaches without problematizing such notions. For our purposes, it seems essential to remark that Looy and Baetens’ subsequent phrase in the quote reads: “We must add ‘literally,’ since we should not forget that in the traditional view, close reading does not aim to produce *the* meaning of *the* text, but rather to unearth all possible types of ambiguities and irony” (LOOY & BAETENS, 2003, p. 8).

(2008). Consequently, both print and electronic works are deeply “permeated by code,” the distinction being that while in print the reliance on the digital occurs simply on the level of production – print taken to be a particular “output of an electronic text” –, in digital literature the inevitability of code dictates that the text itself cannot be accessed until it is performed in accordance with the rules of processing. This is to say that works of digital literature *emerge* only out of *concrete* user interaction, constricted by the specific set of algorithmic parameters pre-assigned by the programmer. Because interaction occurs at a level that precedes cognitive apprehension and literary *semiosis*, the acknowledgment of the “immediacy of code to the text’s performance” becomes nothing short of an epistemological premise and ontological given of digital aesthetics (HAYLES, 2008, p. 5).

If the medium’s brief history has taught us anything it is that technology dictates drastic aesthetic change. Hypertextual objects of the 1980s have today given way to dynamic, high-speed, immersive, interactive experiences, defying notions of authorship/readership, readability and perception. Categories such as Espen Aarseth’s cybertext and ergodic literature must be revisited under these lights. Digital literature’s intrinsic ability to play with signs, morph both plot and characters and explore time-based production complicates notions of semiosis, fiction and form – let alone crystallized theories of textuality. Therefore, it should come as no surprise that certain genres figuring in the “canon” of electronic or digital literature have come to be known by the software used to create them. For instance, *Afternoon: A Story* (1987) by Michael Joyce and Shelley Jackson’s *Patchwork Girl* (1995) can be seen as prime examples of early hypertext fiction, the latter being the culminating work for what Hayles deems “the classical period” of electronic literature (Ibid.). Both written in Storyspace, a hypertext authoring tool first developed by Michael Joyce, Jay David Bolter and John B. Smith and later licensed to Mark Bernstein of Eastgate Systems, they are distributed as stand-alone objects, available on CD for Macintosh and PC platforms. This becomes significant when one wants to concoct a conceptual topology to orient and navigate the several sub-genres of digital literature – hypertext fictions, based on linking structures, being one of the first in a series of possible

hybridizations.³ Though Storyspace has continued to exert some influence in the field, its limitations are not to be ignored, especially vis-à-vis the ever-changing nature of the Web itself (HAYLES, 2008) (Fig. 1).

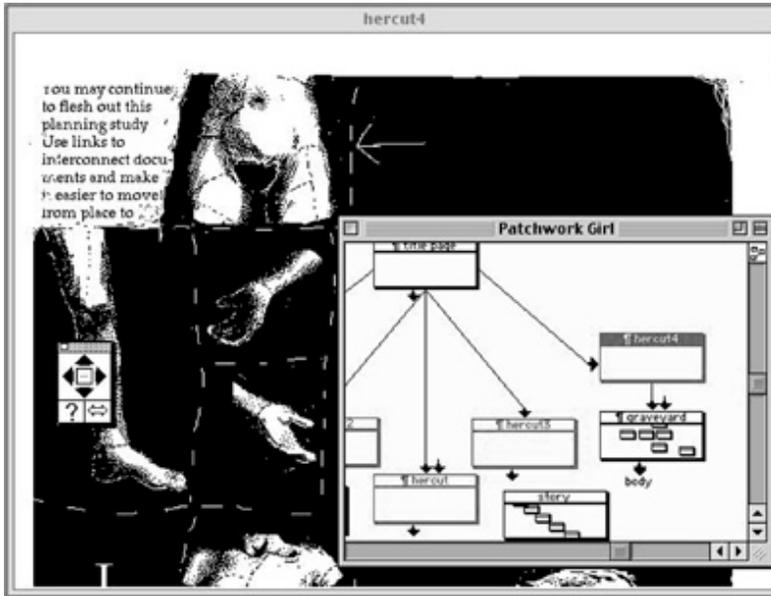


Fig. 1. Screenshot from Shelley Jackson's *Patchwork Girl* (1995).

To speak of the rapid mutability of the Web brings us back to Looy and Baetens' enumeration of reasons for the shortage of critical attention veered towards digital literature: "we often hear this argument that hyperfiction has not yet produced enough interesting works to justify a turn towards a more literal and literary tackling of the material" (LOOY & BAETENS, 2003, p. 8). The authors counter-argue this statement with the following contention: "even if there is not yet any 'high literature,' its works can be significant" (LOOY & BAETENS, 2003, p. 8). From a literary studies standpoint, their argument seems to beg a few obligatory remarks. On the one hand, the authors' strategy to overlook the fact that notions of *high* and *low* in both literature and art have been copiously questioned for at least the past century can be deemed problematic in itself. On the other hand, to dismiss their counter-argument outright could constitute an act of theoretical myopia. If there is one word most

³ More importantly, they are early examples of Espen Aarseth's celebrated nonlinearity, a feature that initially caught the attention of scholars such as Robert Coover and George Landow, who both write about the implications of these linking structures to literary theory.

critics would agree upon whilst describing the Web it is that it is classless, democratic. Suffice it to say that in terms of the high and low culture divide, my point is that the discussion is not only dated but also symptomatic of philosophical and political naïveté. To evoke one instance alone, one could cite Leslie Fiedler's 1969 essay "Cross the Border, Close the Gap," – a forerunner of postmodern manifestos, to be sure – originally featured in the December issue of the unquestionably low-brow Playboy magazine and currently included in practically every "definitive" anthology of literary criticism:

(...) To turn High Art into vaudeville and burlesque at the same moment that Mass Art is being irreverently introduced in the museums and libraries is to perform an act which has political and aesthetic implications: an act that closes a class, as well as a generation gap. The notion of one art for the cultured i.e. the favored few in any given society – in our own chiefly the university educated, and another sub-art for the 'uncultured' i.e., an excluded majority as deficient in Gutenberg skills as they are untutored in 'taste', in fact represents the last survival in mass industrial societies (capitalist, socialist, communist – it makes no difference in this regard) of an invidious distinction proper only to a class structured community. (FIEDLER, 1999, p. 287)

One could argue that the cultural setting described by Fiedler, wherein artists have become the de facto critics, is really not unlike the theoretical and critical landscape Looy and Baetens, Simanowski and Hayles are themselves recounting as they struggle with the institution of adequate terminology with which to describe the relatively new phenomenon of digital aesthetics. The question Fiedler asks in 1969 remains entirely opportune, particularly so in the case of digital literature:

Why not then, invent a New New Criticism, a Post-Modernist Criticism appropriate to Post-Modernist fiction and verse? It sounds simple enough – quite as simple as imperative – but it is, in fact much simpler to say than do; for the question which arises immediately is whether there can be any criticism adequate to Post-Modernism. (FIEDLER, 1999, p. 271)

I shall revisit the issue of postmodernism as it applies to the larger discursive framework of digital aesthetics. In his criticism of Looy and Baetens' third point, Roberto Simanowski admits that the lack of quality in digital literature productions constitutes a tangible difficulty: "The editors correctly object to this argument" (SIMANOWSKI, 2007, p. 43). Indeed they do so by resorting to theorist Marie-Laure Ryan, who argues that the importance of the electronic movement lies in its

capacity to challenge the limits of language (RYAN, 2001). I would concede that, as long as literature pertains to the larger discursive network of culture, it will permanently respond to significant cultural changes, here regarded as recursive systemic interferences (LUHMANN, 1995). It is, thus, only adequate that the emergence of mass media and, adopting theorist Lev Manovich's terms, "new media language" (MANOVICH, 2001), should promote systemic disturbances, which are then resolved internally – which is to say, operationally and semantically – through self-descriptive refashionings, and that these in turn should impart change in mediation processes. That digital literature has yet to produce a grand masterpiece is a valid – albeit debatable – statement, but it can never serve as justification for a dismissal of theoretical exercise. The objection, therefore, is not to Looy and Baetens' observation per se, but to the usage of such problematic terminology as high and low art. Simanowski hypothesizes that even works of questionable quality – "and perhaps precisely these" – can clarify the way in which digital literature can tackle its newfound materiality (SIMANOWSKI, 2007, p. 43). More adequately, in view of these scenarios, I am reminded of Fiedler when he affirms that the intrusion of pop culture into the citadels of high art afforded critics with the necessary freedom to pass judgment on the "goodness" and "badness" of art irrespectively of the constrictive and politically charged binary distinction, "high"/"low" (FIEDLER, 1999).

The development of digital literacy is far from an intuitive process. In his 2011 book *Digital Art and Meaning: Reading Kinetic Poetry, Text Machines, Mapping Art, and Interactive Installations*, Simanowski comments on the increasing importance of digital media in all areas of social and cultural life. That which is now being discussed both academically and extra-academically under the heading of "digital literacy" and "digital humanities" can be split, the author suggests, into two distinct (though arguably intersected) strands of analysis. (SIMANOWSKI, 2011, manuscript). On the one hand, there is a sociological trend in scholarship concerned with the impact (both societal and individual) of new media technologies on culture and behavior – on this side, one would expect to find studies on new phenomena such as "identity tourism," the sociological impact of mass media, "online democracy" and

“the digital divide”. On the other end of the analytic spectrum would lie studies and assessments of the aesthetic potentials of new media. In this sense, not only does digital literacy infer familiarity with both these fields of study but also denotes digital competency – understood here as encompassing basic knowledge of processing and programming (SIMANOWSKI, 2011).⁴

Evidently, processing is a topic deserving of further investigation. For our purposes, I shall limit the scope of the discussion to epistemological conjectures, which is to say, I will not speak of code or programming, but will acknowledge that the materiality of new media presents itself as a fundamentally paradoxical issue. Katherine Hayles has spoken of “flickering signifiers” in her seminal *How We Became Posthuman: Virtual Bodies, Cybernetics, Literature, and Informatics*, 1999. Extrapolating from Jacques Lacan’s notion of “floating signifiers,” Hayles writes that for Lacan, “a doubly reinforced absence is at the core of signification” (HAYLES, 1999, p. 31). To be sure, Hayles is not alone in detecting a reference crisis. Derrida has made similar inferences in his rejection of the binary Saussurean schema (signifier/signified). The introduction of the concept of “flickering signifier” stems from a reconfigured technological paradigm marked by constant processes of intermediation:

Foregrounding pattern and randomness, information technologies operate within a realm in which signifier is opened to a rich internal play of difference. In informatics, the signifier can no longer be understood as a single marker, for example a mark on a page. Rather, it exists as a flexible chain of markers bound together by the arbitrary relations specified by the relevant codes. (...) A signifier on one level becomes a signified on the next-higher level. (HAYLES, 1999, p. 31)

Once the ontology of the linguistic sign is concretely questioned, the degree of contingency usually afforded to literary communication increases. In order to explore the necessary disturbances within the theoretical framework – which occur as a consequence of what linguist Ludwig Jäger has characterized as an epistemology of disruptions (JÄGER, 2010) – one must find solutions descriptively and recursively. This is rooted in a belief in the process of close reading as a means of understanding

⁴ See Noah Wardrip-Fruin’s 2010 book *Expressive Processing: Digital Fictions, Computer Games, and Software Studies* (WARDRIP-FRUIN, 2010).

new phenomena. Because close readings do presuppose interpretation, I should clarify that I shall adhere to them peripherally. Put differently, insofar as digitality mandates that “the sign to a certain degree [lodge] itself in epistemological relation of self to world as a constitutive moment of ‘disruption’,” (JÄGER, 2010, p. 73), the problem of reference is intensified.⁵ For the purposes of uniting presence theory (GUMBRECHT, 1997; 2004), – which requires materiality⁶ – and digital literature – which posits opposite mandates concerning what is to be deemed “material” – I submit that communicative processes must be addressed descriptively, rather than hermeneutically (Cf. GUMBRECHT, 2007).

A frequent theme in the writings on new media theory is self-referentiality. Once mediation becomes central (i.e., computer-based literary models), epistemological problems (i.e., problems of self-description) tend to be addressed recursively. In a comparative study of digital literature and comparative literature, theorist John Zuern argues that though both disciplines have had very different theoretical agendas, both have been at some point induced to look inwards; that is, compelled to redefine the concept of literature self-referentially (ZUERN, 2010). I believe this is precisely the state of affairs now as I produce my own “flickering signifiers” on the computer screen. The hypothesis that digital literature refers only to digitally-born texts requires an investigation into the ontological conditions of digital birth. In Simanowski’s introduction to *Reading Moving Letters: Digital Literature in Research and Teaching*, the author revisits this very question.

It should be underlined that the condition of “digital computation” is not fulfilled by the banal way of being created on the computer. (...) The condition of “digital birth” points to the more existential characteristic of carrying the features of the “parents” such as connectivity, interactivity, multimediality, non-linearity, performativity and transformability. (SIMANOWSKI, 2010, p. 15)

This statement has two inevitable implications: (a) the exclusion of any and all texts or alphabetically-oriented visual experiments that originate in print and are later

⁵ See Jäger: “Epistemology of Disruptions: Thoughts on the Operative Logics of Media Semantics” (2010).

⁶ A word of caution before I proceed: one must not forget that materiality itself constitutes an ambivalent concept. As Karlheinz Bark writes in his “Materiality, Materialism, Performance,” materiality’s inherent obscurity is indicative of a “need for tentative questioning of its meaning and for new kinds of experience” (BARK, 1994, p. 259).

transferred to the screen, and (b) the assumption that genuine digital literature is ontologically indebted to digital media. Needless to say, the category of digital literature excludes print literature that has been digitized. Hayles notes that the Electronic Literature Organization, whose mission is to “disseminate works of digital literature” (<http://eliterature.org/>), has framed a definition wherein digitalized works are excluded. Nonetheless, neither Simanowski nor Hayles seem oblivious to the fact that though the notion of digital birth will suffice for the differentiation between digital literature and digitalized literature, it does not account for the second term in the phrase *digital literature*, namely to the qualities which render it literary in the first place. I shall re-assess this issue in greater detail at a later point in this thesis when I address a revised notion of literariness. For our purposes, the establishment of an interrogative pattern of investigation should prove quite fruitful. It is, after all, curious that, as Francisco J. Ricardo observes in his 2009 book *Literary Art in Digital Performance: Case Studies in New Media Art and Criticism*, theorists will go to all manner of lengths in order to circumvent ontological thinking: “So while the idea of literature and art, fully distended for novel practices, is held up, one also perceives a reaction against insinuations of universals as might underlie electronic works and media” (RICARDO, 2009, p. 5).

Having edited his book in a way that allows for what he calls “post-chapter dialogues,” Ricardo begins his introduction entitled “Juncture and Form in New Media Criticism” by drawing a parallel between art and literary criticism, claiming that while both disciplines have offered articulations for processes of figuration and representation, they have done it in entirely distinct ways. While literature functions with a reliance on semiosis, visual arts operate according to the cognitive possibilities of optical perception. When we come to speak of digital literature, with its intermedial amalgamation of linguistic and visual signs – let alone aural and interactive –, the natural implication is that the processes of figuration and reception should include conflicting modes of signification. Furthermore, it should be of interest to those who study new media, and, specifically, digital literature, to observe how these technological transformations and convergences evolve and (eventually) subvert the boundaries that separate art from literature (RICARDO, 2009). The fact

that electronic media has made possible the coupling of “the entirely participatory and the entirely receptive” not only amounts to important normative and epistemological inquiries, as the author is keen to point out – i.e., “what, in a work that is as visual as it is literary, does it mean to speak of art, or literature?” (RICARDO, 2009, p.2) –, but also to novel practices in close readings, which, I would submit, are conducive to new forms of theorization about the body (*res extensa*), its performative dynamics, its status as interface and external reference, its mergers with machine, its leap into cyborg status.

The challenge lies not in the reformulation of deeply entrenched notions of hermeneutics⁷ so as to encompass the trope of “eventilization” (to borrow from Katherine Hayles’ terminology) or the reflection on the fluid materiality embodied in these new sensory aesthetic objects, but to adequately account for the expansion of literary communication into the realms of physicality (Cf. HAYLES, 2006). In this context, it seems appropriate to note that in his “Reading Digital Literature: A Subject Between Media and Methods,” Simanowski refers to Josette Féral’s 1982 essay “Performance and Theatricality: The Subject Demystified” to draw evident parallels between the emphasis on the “phenomenal body” – the performing body which resists narrativity – and the issue of meaning in performance art and immersive mixed-media digital installations (SIMANOWSKI, 2010a, p. 25). As a proponent of meaning, Simanowski solves this theoretical dispute by claiming that while performance art aims at frustration through semiotic refusal, interactive art produces “space-times” of “inter-human experiences,” thus rendering the issue of meaning secondary or subjacent to the interactive process (SIMANOWSKI, 2010a, p. 25). In the specific case of digital literary objects, this sensory-sensitive turn is aided by – or perhaps exists because of – an intrinsic predisposition manifest in digital works to minimize legibility and favor performatic potentialities. Rather than be read, digital signs instigate a preconscious desire to be played with (Cf. HAYLES, CAYLEY, WARDRIP-FRUIN). As my chapter on concrete and digital poetry shall demonstrate, this is a recurring theme in discussions on digital/kinetic poetry.

⁷ In his *Interfictions: Von Schreiben im Netz* (Frankfurt: a. M. Suhrkamp, 2002), Roberto Simanowski speaks of the development of a hermeneutics of deep information that must include a hermeneutics of interaction as the integral factor in the constitution of signs (121).

In an essay entitled “Text as Event: Calm Technology and Invisible Information as Subject of Digital Arts,” Simanowski quotes Lev Manovich’s 2001 *The Language of New Media*, to argue that literacy appears to be on the decline: “The notion of the decline of the printed word tradition is in line with assumption that electronic media, computer and the Internet undermine the authority and cultural supremacy of the word” (SIMANOWSKI, 2010*b*, p. 1). In his commentary on the increasing pervasiveness of cinematic language, Manovich does draw a parallel between the printed word tradition and pictorial semiotics, detecting a tendency in contemporary culture to convey information “in the form of time-based audiovisual moving image sequences, rather than text” (MANOVICH, 2001, p. 78). That cinematic language has gained currency in today’s cultural discourse is almost a truism. Thus, that the semantics of new media theory – and of literary theory by extension – is informed by fundamentals derived from the pictorial turn is a recursive response to a historically-specific cultural climate. In light of these altered cultural configurations, Hayles’ concept of eventilization (HAYLES, 2006) – invoked by Simanowski in his aforementioned essay – is entirely apropos (SIMANOWSKI, 2010*b*). The notion of digital text as eventilized instantiation speaks to the tension between the distributed materiality of digital texts and their reception (one may reductively call it reading) as post-linguistic objects. As we shall see in radical instances such as Camille Utterback’s *Text Rain* (1999), which I address in detail at a later stage in this thesis, immersive mixed media installations facilitate discussions on the double status of the verbal mark as it is morphed into post-alphabetic object.

2.2.

Going *Overboard*

(...) Till human voices wake us, and we drown. (T.S. Eliot, 1917)

While John Cayley and Giles Perring's *Overboard* presents a less radical example of "text as event" – to borrow Simanowski's phrase –, it suits these introductory purposes. *Overboard* is a gallery piece; specifically it is a "dynamic linguistic 'wall-hanging,' an ever-moving 'language painting,'" as the artists put it in the descriptive text that accompanies the installation (CAYLEY, <http://www.dichtung-digital.org/2004/2-Cayley.htm>). The work operates according to what Cayley deems "ambient time-based poetics"; that is, an algorithmically produced effect that promotes the replacement of letters by means of "iterative transliteral morphs between related texts" (Ibid.).

My investment lies in the belief that relatively simple algorithmic manipulation of basic low-level, parasegmental linguistic systems is able, significantly, to yield rhetorical and, indeed, aesthetic effects which can be correlated with their programmatological generators. (CAYLEY, <http://www.dichtung-digital.org/2004/2-Cayley.htm>)

Cayley's expectation is that by structuring morphs between stylistically similar typographical objects, "abstracted underlying structures" will become visible, thereby shedding light on "higher-level" articulations between texts (Ibid.). By underlying structuring, Cayley means to address concrete interrelationships between algorithmic processing and signification mechanisms. *Overboard* consists of a stable text that sways between visibility and erasure by the illusion of constant movement of the letters "sinking" and "rising" to the surface. Schematically and descriptively, it is possible to subdivide it into two grids, one textual and the other imagetic, each consisting of multiple processual layers split halfway on a rectangular display. On the linguistic side, the fixed underlying text is set out with verse and stanza breaks "in the manner of poetic form" (CAYLEY, 2004, p.1). As "surfacing" algorithms scan the underlying text (first layer), letters slowly emerge on the screenic surface (second

layer), gradually accruing enough textual mass as to form “the textual field” (CAYLEY, 2004, p. 1). Cayley explains that the text is purposefully set in a fixed-width font so that letters in the textual grid can be constricted to regular positions. The non-linguistic side of the screen displays thematic “visual correlatives” of the text in the form of algorithmically-generated cropped fragments of photographic images of the sea’s surface. These micro-images are positioned in correspondence with the textual processing occurring on the linguistic side (Ibid.) (Fig. 2). Cayley elucidates the operative logics of *Overboard* as follows: because the surfaces of the text are distorted as a function of legibility, in “a ‘surfacing’ state, literal points (points on the surface where letters may appear) will tend to ‘rise’ and touch the screenic surface of visibility such that it will spell out the underlying given text” (CAYLEY, 2004). Conversely, in a “drowning” or “sinking” phase, letters are programmed to recede from the screenic surface of visibility – complementary to “surfacing,” in the “sinking” phase the letters either interchange or are morphed to blank space (Ibid.). Finally, in the “floating” state alphabetical text is algorithmically altered so as to appear on the visible surface in an intermittent fashion, “producing a quasi-legibility, a linguistic shimmering on the screenic reading surface” (CAYLEY, 2004). This oscillation, directly affecting legibility, affords *Overboard* with a double status, operating as both digital art and digital literature.

Overboard illustrates a trend in the discussions on digital literature that problematizes the fluid boundaries between art and literature and raises the question of how to talk about literature – presumably identifiable by linguistic markers (HAYLES, 2008) – when the typographic sign is transformed into post-alphabetical object.

I wanted to make a piece that was unambiguously literary but that might perhaps hang on a wall-mounted flat screen, like a kinetic literary painting. The viewer or reader would see a textual image with a recognizable underlying form, but this would change constantly by way of its minimal letter substitutions, ideally such that the changes would be barely perceptible. The piece would seem not to change and yet always to be different, whenever it was given any attention. (CAYLEY, 2004)

In his reading of the piece, Simanowski describes the redundancy of theme and form as remnant of the strategies deployed by concrete poets in the past. Indeed

“rising” and “sinking” letters emulate and reenact the experience of drowning as spelled out by the subjacent (fixed) verse:

... in a mighty storm
a man came above board
and was thrown into the sea

but he caught hold of the halyards
which hung over board
and held his hold
though he was many fathoms under water

till he was hauled up
to the brim of the water ...

(Transcription by CAYLEY, 2004)

In light of concrete poetry debates as well as historical interrelations between pictographic representations and script, the correlation of “linguistic message” and visual reenactment strikes me as primarily a matter of acknowledgment, rather than full-fledged controversy. *Overboard* is, thus, a case in point insofar as processual protocols impose semantic minimizations. One could argue that these minimizations are indicative of the “flickering” ontologies of discrete lexical electronic units (HAYLES, 2006). Evidently, the employment of the term *ontology* requires that one address the concept of materiality. In his “Materiality, Materialism, Performance,” Karlheinz Bark speaks to the conceptual obscurity engrained in term by pointing towards discrepancies between perception and cognition (BARK, 1994, p. 258). If one considers linguistic materiality to always be, to some degree, a result of mediation, which is to say that media-free cognition is an impossibility (JÄGER, 2010), then the discussion is shifted from a normative debate – which would place digital literature in a separate sphere from its print counterpart – to a heuristic inquiry, wherein one would gauge varying semantic and material granularities of particular objects.

In *Overboard* the intermittence of visibility/legibility unveils the need for reception processes that privilege contingency – in Cayley’s example, expressed as algorithmic morphing. Evidently, this is not to undermine the highly probable hypothesis that because materiality in digital media is, of necessity, processual

(HAYLES, 2006) it is conducive to self-reflexive loops which lead digital objects to comment on their materiality. In the words of K. Hayles, the “distinctive materiality” of electronic media lies primarily in its “distributed existence spread among data files and commands, software that executes the commands and hardware on which the software runs” (HAYLES, 2006, p. 181). Consequently, on the issue of materiality proper, while I believe *Overboard* does present a strong case for what can be dubbed the “physical turn” in computing, I maintain that physicality is never a stable entity in the digital realm and has evident ties with Gumbrecht’s concept of presence.

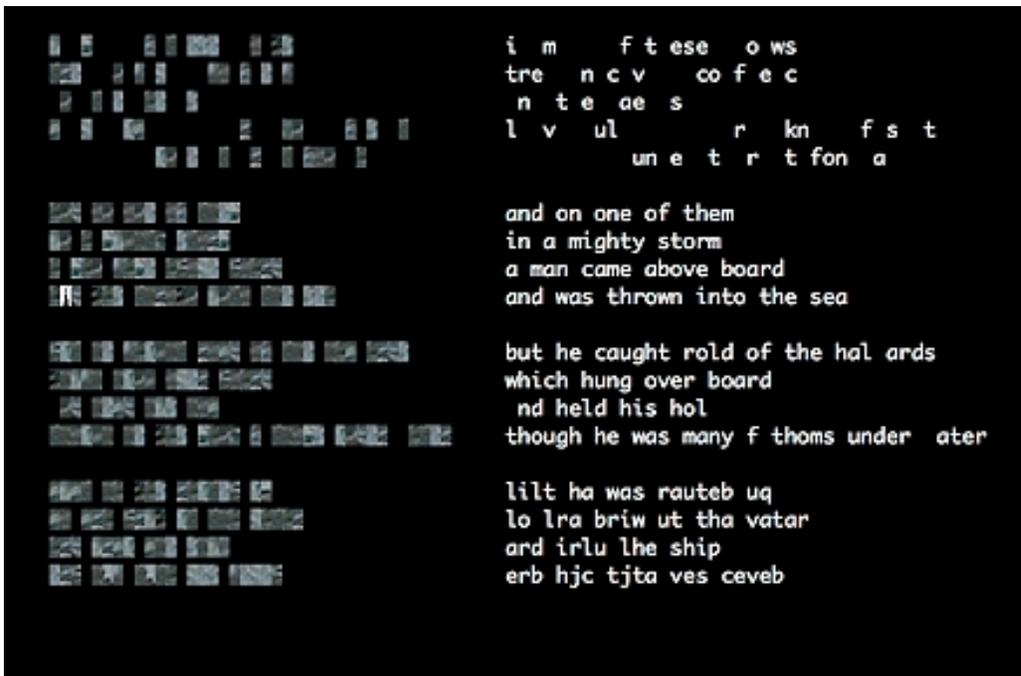


Fig. 2. Image of *Overboard* by John Cayley. In the above picture, whilst the first verse sinks, verses 2 and 3 are at different degrees of reappearance.

2.3.

Intermediations

In his early writings Roberto Simanowski (*Interfictions: Vom Schreiben im Netz*, 1999) employed the term *interfictions* to classify objects created by digital media and meant to be experienced only within digital media. While the prefix *inter* alludes to the relevance of the Internet – or at least to the genre’s intrinsic reliance on the computer’s feedback processes, that is, to intermediality and interactivity –, the term *fictions* points to a multimedial structural order common to literary works – i.e., the combination of visual, aural, kinetic and textual elements for fictive purposes. The author has since abandoned the term *interfictions* in favor of the broader denomination *digital literature* (2007), basing his decision on the fact that while the range of digital literature is vast, it does presuppose certain fundamental characteristics – the term *digital* refers to the medium of its production and not to the “semiotics of its material”. By basing the characterization of digital literature on the technological facet of the medium and not on its semiotic mandate, Simanowski claims to resolve the objection one might encounter with regards to the binary distinction between digital literature and non-digital literature – the operative assumption being that the characterization of the term *digital literature* is informed by its *dependence on the technological medium*, or by what Simanowski describes as the “genuineness of the medium” (SIMANOWSKI, 2007).

The term digital literature seems to offer least occasion for misunderstandings. It does not refer to concrete individual characteristics of digital literature like interactivity, networking, or non-sequentiality as do the terms interactive literature, net literature or hypertext. It rather designates a certain medium, which I am describing as digital and not as electronic in order to ensure the differentiation from other electronic media like cinema, radio or television. (SIMANOWSKI, 2007, p. 47)

Due to the nature of my investigation, I opt to focus on epistemological debates rather than discussions pertaining to the specifics of medial mechanisms of

distribution. Suffice it to say that I concur with Jäger when he affirms that there are no neutral media: “each transmission/transfer of meanings registers silenced semantic processes of constitution (...)” (JÄGER, 2010, p. 79). Complex meaning attribution disputes aside, I claim that the emphasis on production does not solve the problems of reception, where distinctions and differentiations become considerably more problematic. Granted, Simanowski does integrate reception into his triadic topology – interactivity, intermediality and performance⁸ – announcing a shift from “linguistic hermeneutics” to a “hermeneutics of intermedial, interactive, and performative signs” (SIMANOWSKI, 2007, p. 48). According to this reasoning, one should focus not on the meaning of a word but on its performance, be it on a screen, as a hologram or as projection on the interactor’s body.⁹ Insofar as readers can be deemed collaborators or interactors, they become integral parts of the composition – be it by reacting to pre-programmed interactivity (hypertexts), to networked projects or simply by being physically engaged in the digital surface of the work. Reception then requires performance and production anticipates these requirements processually.

The concept of *interactivity* begs the oft-cited topic of the dissolution of authorship. Reader-response criticism and reception aesthetics have made significant contributions to what Gumbrecht describes as “the ascension of the reader to the apex of a hierarchy of concerns” (GUMBRECHT, 1992, p. 15). The advent of hypertext has sparked new life into these discussions. In 1999 Simanowski makes the explosive claim that “while the author is not dead [as he sets up the connections and therefore predetermines the reader’s associations] it is perhaps more appropriate to announce the death of the reader” (SIMANOWSKI, 1999). An analogously radical solution can be found in George Landow’s literal interpretation of Michel Foucault

⁸ In his 1999 text entitled “Towards an Aesthetics of Digital Literature,” after pointing out the necessity of an aesthetic evaluation of digital literature, Simanowski formulates a few criteria to evaluate digital pieces. This he does by identifying a few typical characteristics common to all (most) digital literary works. They are as follows: “(1) Multimediality; (2) Technical aesthetics; (3) Performance; (4) Links; (5) Navigation; (6) Screen Aesthetics” (SIMANOWSKI, 1999, p. 2). In a later essay, the author condenses these categories into three main groups: interactivity, intermediality and performance (SIMANOWSKI, 2007). According to the author, the purpose of this list is primarily to state that the mere existence of a text on a computer monitor is not sufficient to afford it the status of digital literature – encoding not being enough, one must look for the aesthetic interplay of these characteristics in a work of digital literature.

⁹ The term *interactor* was coined in 1992 by Kristi Allick and Robert Mulder with respect to interactive theater (GIANNETTI, 2004).

and Roland Barthes' seminal texts on the death of the author.¹⁰ In Chapter 4 of his *Hypertext 2.0: The Convergence of Contemporary Critical Theory and Technology*, George P. Landow reedits the controversy begun by Michel Foucault and Roland Barthes on the deconstruction of authorship by announcing the emergence of an intrusive reader: "Hypertext, which creates an active, even intrusive reader, carries [the convergence between reading and writing] of activities one step closer to completion; but in so doing, it infringes upon the power of the writer, removing some of it and granting that portion to the reader" (LANDOW, 1997).¹¹ One could read these claims as reifications of Umberto Eco's concept of the open work (ECO, 1989) as well as Wolfgang Iser's asymmetry between text and reader (ISER, 1978). Drawing from Gumbrecht's aforementioned revision of reception aesthetics, I will limit my present claims to the following assertions: critical and theoretical discussions of literature can no longer afford to speak of models based on adequacy, "motivated by the idea of perfectibility in which an ideal reader is supposed to converge with the correct meaning" (GUMBRECHT, 1992, p.15). Rather, literary communication must be seen as a highly contextual "reconstructive effort under which various meanings of a given text are generated by readers whose receptive dispositions have differing historical and social mediations" (p. 15). I shall further elaborate on these claims when I address Espen Aarseth's ergodic models of cybertextuality.

Within the context of these augmented hermeneutics, Simanowski's model of *Intermediality* poses a certain measure of difficulty. Basing his terminology on Jürgen Müller's analysis of intermediality, the author claims that the concept marks the conceptual integrative connection amongst expressive media, drawing attention to the distinction between intermedial and multimedial – the former encompasses the actual integration/cooperation between two or more types of media, whereas the latter refers to their assemblage in the act of performance, (distinguished from an act of conceptual collaboration) (SIMANOWSKI, 2007). The epistemological

¹⁰ Cf. Landow in *Hypertext 2.0* on the "intrusive reader."

¹¹ It should be noted that in "*Qu'est-ce qu'un auteur?*" Michel Foucault draws a crucial distinction between the individual author of flesh and blood and the "author-role" – inexorably linked to a discursive network inscribed in a cultural system.

considerations do not easily translate into practical examples. A case in point is Alex Gopher and Antoine Bardou-Jacquet's *The Child* (1999), a fringe experiment consisting of a video clip that makes aesthetic use of animated text and sound synchronicity. If the ultimate decision lies in the eye of the beholder – “the decision whether a TV documentary or a photo-novel is intermedial or multimedial will depend on the decision of the viewer” (SIMANOWSKI, 2007, p. 46) –, then it becomes clear that distinctions between digital and digitalized literature are only functional on the level of receptive interaction.

In his own reading of Gopher and Bardou-Jacquet's piece, Simanowski inquires:

And what about a work like Antoine Bardou-Jacquet's video *The Child* (1999) for Alex Gopher's song *The Child*, which not only dynamizes the text and parallelizes it with sound and a sample by jazz legend Billie Holiday but also uses text simultaneously as a linguistic and visual sign in the tradition of concrete poetry? Should we grant medial authenticity to such a work? (SIMANOWSKI, 2007, p. 47)

If *genuineness*, as previously explained, is to be determined by the piece's reliance on digital media, then by necessity (and not by fact), in order to exist at all, a genuine work of digital literature must unfold entirely within the confines of the digital medium. By unfold, I mean it should require digital mediation in both the production and reception stage. From this formulation, it follows that even though *The Child's* aesthetics are clearly informed by computer technologies and despite its clear use of such technologies in the process of production, the output differs very little (or not at all) from a conceptual video clip. Simanowski states that “media relevance” must take precedence over “genuineness,” but even genuineness is a complicated matter as he will admit when reminding the reader of Espen Aarseth's argument in his *Cybertext: Perspectives on Ergodic Literature*, namely, the notion of cybertext precedes digital (electronic) mediation.

Using Alex Gopher's *The Child* as a tutor-text, I wish to shed further light on the notion of media relevance. As the term *digital* in digital literature relates to the medium of production and not to the semiotics of the material, a few inferences can be made. Since language is naturally discrete, one could argue, as many scholars in the field do, that literature is always the output of digital encoding. Hence, insofar as

digital literature ought to be different from print literature, it must transcend semiotic digitality. Simanowski mentions semioticians' objections to the expansion of the term *language* adding that a distinction between the *technological* and the *semiotic* notion of the medium allows us to answer questions as to what “non-digital” might mean in contrast to “digital literature” (SIMANOWSKI, 2007, p. 61).¹² In other words, digital literature must connect non-discrete signs (visual, aural and performative elements) to discrete ones (alphanumeric code). Moreover, by stressing the medium of production rather than emphasizing particulars of reception, the term *digital literature* reduces complexity by establishing larger parameters of distinction. Without imposing restrictions framed according to the specific characteristics of digital works, the term becomes a highly pliable concept, applicable to a number of intensely diverse examples. But what constitutes a work of digital literature? The problematic case of Alex Gopher and Antoine Bardou-Jacquet's *The Child* might offer a few provisional answers. The piece's premise and narrative are trite at best: we, the viewers, follow a woman in labor and her partner speeding through Manhattan to get to the hospital. The innovation lies in the replacement of images for linguistic signifiers. As the camera zooms into the Manhattan skyline one realizes the buildings are not really buildings but vertically written text in the shape of skyscrapers (Fig. 3). To an extent, this transmedial operation could be deemed a disguising mechanism for the very triteness I criticize.

¹² CF. SIMANOWSKI, 2007 & HIEBEL, 1997: Hans H. Hiebel proposes a distinction between primary digitality (discrete-distinctive signs) and secondary digitality (digitalization of signs as consequence of the computer) (HIEBEL 1997, p. 8 apud SIMANOWSKI, 2007, p. 61).



Fig. 3. Alex Gopher and Antoine Bardou-Jacquet's *The Child* (1999) - Screenshot (1).

As the camera approaches a particular window, whose shape is composed of the word “WINDOW,” one sees the outline of a woman formed by the words “BROWHAIR/PRETTYFACE/WOMAN/PREGNANT/REDDRESS/SNEAKERS” Next to her is the husband: “BLACKHAIR/PLEASANTFACE/HUSBAND/LITTLEMAN/DARKSUIT.” They go down the “LIFT” in a hurry and, as the man calls out for a taxi, the words “DREADLOCKS/RASTAMAN/CABDRIVER” invade the screen (Fig. 4).

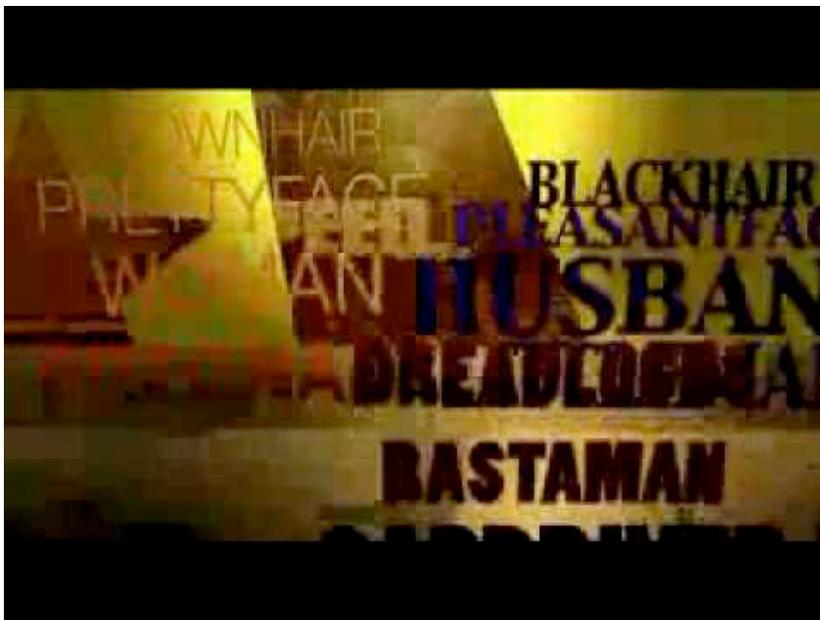


Fig. 4. Alex Gopher and Antoine Bardou-Jacquet's *The Child* (1999) - Screenshot (2).

One would be hard pressed to deny that the strength of Gopher and Bardou-Jacquet's work lies primarily in its conceptualization. When Simanowski asks why we are deprived of information on the sex, ethnicity, build, etc. of the cab driver, he enforces the hypothesis that *The Child*, differently from Jeffrey Shaw's *Legible City* (1989-91) (Fig. 5) "does not tell an invisible story behind walls, but rather reduces the visible objects to their momentary meaning for an unspecified narrator" (SIMANOWSKI, 2007, p. 49). Objects being reduced to their transitory meanings should come as no surprise to the literary scholar relatively versed in the foundational resources of post-structuralism – i.e., one need only recall Derrida's semiotic twist on the concept of *différance* to understand the deferred nature of correspondence between signifiers and signifieds. In *The Child*'s case, that these meanings will, of necessity, be determined by one's (the spectator's) interpretation not only constitutes proof of the permanent possibility of semantic deferral, but also serves as evidence of typically cinematic processes of identification. On the issue of interactivity, or lack thereof, it should be noted that *The Child* – unlike Jeffrey Shaw's *Legible City*, where the interactor is allowed to roam this digitized world and thus fabricate his own multiple narratives – functions very much like a film in that the spectator's gaze is

pre-determined. In this regard, it is only predictable that a Cadillac stretch limousine holding up traffic should only appear endlessly long if you are trying to reach a maternity ward – particularly if the “you” in question is “you,” the spectator undergoing a full-fledged process of identification with the parents’ point of view.

For comparative purposes, it should also be noted that in *Legible City* interactive allowances are limited. Created at the *Institut für Neue Medien* in Frankfurt/M., Shaw’s piece offered interactors a simulated bike ride through the streets of Manhattan, Amsterdam and Karlsruhe. Seated on a stationary bicycle, the interactors were made to “move” through streets projected onto a surface in front of them, only instead of the images of the cities, they were faced with letters replacing buildings. Not unlike *The Child*, *Legible City* does not respond to the user’s interactions per se, rather, as new media artist Camille Utterback observes, it “inserts the user’s point of view via computer-generated linear perspective into a dimensional space made entirely of text” (UTTERBACK, 2004, p. 223).



Fig. 5. Jeffrey Shaw’s *Legible City* (1989-91).

From a post-hermeneutic stance, the question to be addressed is not whether “by casting everything into language” *The Child* truly speaks of the birth of meaning, as Simanowski would have it (SIMANOWSKI, 2007), but whether by doing so (and

assuming that it does not speak of its death by equating signifier with signified) it renders the piece literary. This will be one of the most challenging – albeit arguably open-ended – debates to be faced in the pages to come. I am reluctant to either agree or disagree with Simanowski’s strictness when he states that though *The Child* might appear to be an excellent example of digital literature for “its [exciting] meta-reflexivity,” it does not qualify as genuine digital literature. It should be observed that *The Child* was a video clip shown in movie theaters as Clip Cult Vol. 1 – Exploding Cinema by the Cologne distributor Rapid Eye Movements in 1999 (SIMANOWSKI, 2007). Is physical interactivity a contributing factor to the definition of digital literature or should it be deemed a definitive rule with excluding prerogatives? In the words of Ricardo,

(...) interactivity has produced the consequence of work that often performs neither as literature nor as art, but beyond both; something neither entirely predetermined nor entirely random, but beyond both; and that dwells neither in a single place nor everywhere, but beyond both. (RICARDO, 2009, p. 2)

Perhaps it would be productive to find pragmatic reasons for assigning *The Child* to “the realm of digital literature – just like the text films by David Knoebel and Young-Hae Chang Heavy Industries” (SIMANOWSKI, 2007, p. 50). In light of this inconclusiveness, I can only find solace in the words of Ricardo that due to the “variegated nature of what comprises electronic art and literature” (RICARDO, 2009, p. 2), the premise of intermediation requires that one address the current cultural climate interrogatively (Ibid.). With this in mind, I move on to the pre-history of the genre.

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3. Pre-Configurations and (Re)entries

3.1.

Pre-History: The Extensions of Men and Cognitive Transitions

I would like to begin this brief pre-history with a citation. In an article entitled “What’s a Critic to Do? Critical Theory in the Age of Hypertext,” George P. Landow, an iconic figure in new media studies maintains that “a central fact about the digital word lies in its intrinsic separation of text from the physical object on which it is read” (LANDOW, 1994, p. 4). In other words, one must distinguish between information regimens and their media supports, which are, of necessity, transitory as they rely on historically specific technological affordances. As Katherine Hayles writes: “electronic literature is not print (...) and paying attention to the ways in which electronic literature both extends and disrupts print conventions is a neat trick (...)” (HAYLES, 2008, p. 30) – a trick which I fully intend to master. A brief foray into the history of print seems inevitable.

Before I proceed, I must acknowledge that the topic of the “birth of the digital” is not without a significant measure of indeterminacy. On the one hand, one could venture into a teleological, or dare I say genealogical, retracing of the steps in the history of writing and print as a means of introducing the full-fledged discussion on digital literature, which includes an emphasis on the invention of hypertext, to be sure. On the other hand, one could opt to focus on the end-of-books debate – the all-too-famous disentanglement of word from page initially sparked a debate that remains alive to this day. I would be remiss not to mention it, but I wish to make it clear that I have no interest in dwelling on it.¹ To play

¹ One could trace it back to Robert Coover’s famous article “The End of Books,” published in none other than *The New York Times Book Review*: “In the real world nowadays, you will often hear it said that the print medium is a doomed and outdated technology... Indeed, the very proliferation of books and other printed-based media, so prevalent in this forest-harvesting, paper-wasting age, is held to be a sign of its feverish moribundity, the last futile gasp of a once vital form

into Landow's scenario that dictates "you can't read an electronic book in the bathtub" (LANDOW, 1994, p. 4), I must confess to my total indifference towards the fact that one cannot read electronic books in the bathtub, the ocean or a swimming pool – be it noted that Landow was writing before Kindles and iPads and it is entirely possible (probable, even) that iPad-ready flotation devices are available in stores as I write these pages. My point is simple, but essential: although one must distinguish between digital textuality and its instantiation in changing media, one must never neglect the fact that the histories of these two elements are intermingled.

If we have, in fact, become posthuman, then so has the world around us. It is then not surprising that when Katherine Hayles sets out to define digital literature, she borrows a term from genetics, calling it a mutation, or a "hopeful monster: composed of parts taken from diverse traditions that may not always fit together" (HAYLES, 2008, p. 4). With hybridity as its mark, digital literature has become a space of negotiation ("a trading zone", as the author calls it, borrowing Peter Galison's term), wherein fundamentally inter- and intramedial recursive processes both activate and break with distinct cultural semantics, expertises and classification systems. Digital literature, or electronic literature, must transact with relatively stagnant functions and conventions cemented by centuries of print culture – not to mention the influence of imagetic and cinematic languages (HAYLES, 2008). It stands to reason that readers will approach digital literature with tacit expectations derived from the internalization of print protocols, such as alphanumeric text, pages, etc. Apple's iPad, and before it, Amazon's Kindle – and other such supports –, kept the flipping page as an interface model. One can only assume that this decision was based on the belief that readers/consumers would be comforted by the semblance of printed books, i.e., their material arrangement.

One of the earliest hypertext theorists, David J. Bolter, includes a chapter entitled "Writing as Technology," in his seminal 1991 book *Writing Space: Computers, Hypertext and the Remediation of Print*. While it is intuitive to think of the printing press, the Linotype machine and the typewriter as technologies, he argues, the same logic does not apply to writing. In other words, we tend to *not*

before it finally passes away forever, dead as God" (COOVER, 1992 IN. FRUIN & MONTFORT, 2003, p. 706).

consider alphabetic writing as technology, when in fact the invention of the alphabet should be regarded as one of the greatest technological advances in human history.

Writing is and has always been a sophisticated technology: skill is required to learn to read and write, and penetrating intelligence is needed to invent or improve some aspect of the technology of literacy. (BOLTER, 1991, p. 33)

The intricate correlation between medial supports and human cognition – responsive to cultural and historic specific configurations – gives rise to what Bolter calls “economies of writing” (BOLTER, 1991). According to the author, each culture and period has its own particular economy of writing: “a dynamic relationship among materials, techniques, genres, and cultural attitudes or uses” (BOLTER, 2001, p. 21). This notion proves to be critical because of the intimate relationship between the “writing space” and the kind of writing that is produced as a result of such interdependency – i.e., varying recursive methods of storing, processing and transmitting discourse/data. For example, in late antiquity the shift from the papyrus roll to the codex provided a more effective use of the bracketed, two-dimensional surface: page numbers were then included. In Western Europe, the shift from the handwritten codex to the printed book constituted another such refashioning, and similar logic applies to electronic writing. These “refashionings” exemplify moments of *remediation* (BOLTER, 2001). I shall return to the concept shortly.

The earliest economies of writing arise in Mesopotamia and Egypt. As Sumerians and Egyptians develop a symbolic system comprised of intricate word-syllable scripts, pictographic representations are progressively replaced by phonetic codes.² To be sure, scripts have highly complex antecedents and have proliferated around the globe quite independently of one another. Various societies have adopted a myriad of recording devices and *aides-mémoire* – ranging from notched sticks and pebble rows to the *quipu*, an Incan tallying device consisting of a stick with suspended chords (ONG, 1982). Writing, in its commonest sense, Ong writes, “was and is the most momentous of all human

² Cf. Bolter. The author adds that the Egyptians may have borrowed the idea of phonetic writing – wherein written symbols are associated with sounds of a language – from the Sumerians. In this case, only the Chinese and the Mayans are believed to have adopted phonetic writing independently (BOLTER, 1991, p. 37).

technological inventions” (ONG, 1982, p. 84). Far more than an “appendage to speech,” – or being precisely that – literacy shifts the requisite sensory engagement from the aural to the visual realm: “Notches on sticks and other *aides-mémoire* lead up to writing, but they do not restructure the human lifeworld as true writing does (Ibid.). A detailed study on the full effects of literacy on cognitive operations, however indispensable, falls outside the scope of this thesis. Suffice it to note that around the 8th century B.C. the Greeks adopt alphabetic writing. Old epic songs from the oral tradition are then transcribed to the papyrus scroll, itself acquired from Egypt. In his *The Muse Learns How to Write: Reflections on Orality and Literacy from Antiquity to the Present*, Eric A. Havelock deems the passage from orality to literacy so momentously grand in the course of human history that he declares it the intention of his book to illustrate “the crisis that occurred in the history of human communication, when Greek orality transformed itself into Greek literacy” (HAVELOCK, 1986, p. 1). The earliest text composed throughout as written text was that of Hesiod. Because the language found in Hesiod retains much of the formulaic character of Homeric epic poetry, Hesiod’s example is befitting of David Bolter’s notion of *remediation*, a key term to understanding new media (BOLTER, 1991).

Bolter describes the concept of remediation as “a process of cultural competition between or among technologies” (BOLTER, 1991, p. 23). For many years, Greeks and Romans envisaged alphabetic writing on the papyrus roll in dialectical tension with the oral tradition they had not fully forsaken. Albeit entirely adequate as a descriptive strategy, it should be noted that Bolter’s concept of remediation can be regarded as the output of media history as seen from a teleological stance: “writing on papyrus remediated oral communication by involving the eye as well as the ear and so giving the words a different claim to reality” (Ibid.). Be it noted, remediation is not substitution: when a new medium supplants an obsolete predecessor, it does *not* fully replace it, but rather supplements it by both retaining certain characteristics of the original medium and reconfiguring its representational parameters. As he scrutinizes various surfaces or spaces of text, Bolter draws a parallel between electronic text and Homeric poetry. Detecting certain traces of orality in hypertext structures – such as repetition and associativity –, the author considers the topical structurations of digital electronic texts as counterparts to Homer’s mnemotechniques, namely

epithets and recurring descriptions: “Homer’s repetitive formulaic poetry is a forerunner of topographic writing in electronic writing space. The Homeric poet wrote by putting together formulaic blocks, and the audience ‘read’ his performance in terms of these blocks” (BOLTER, 1991, p. 59). When the papyrus roll remediates oral communication – dislodging speech from aural to visual registers –, it retains manifest residues of rhetoric on its surface of inscription (Figs. 6 and 7).

Kindly turn 90° (↻) to see:

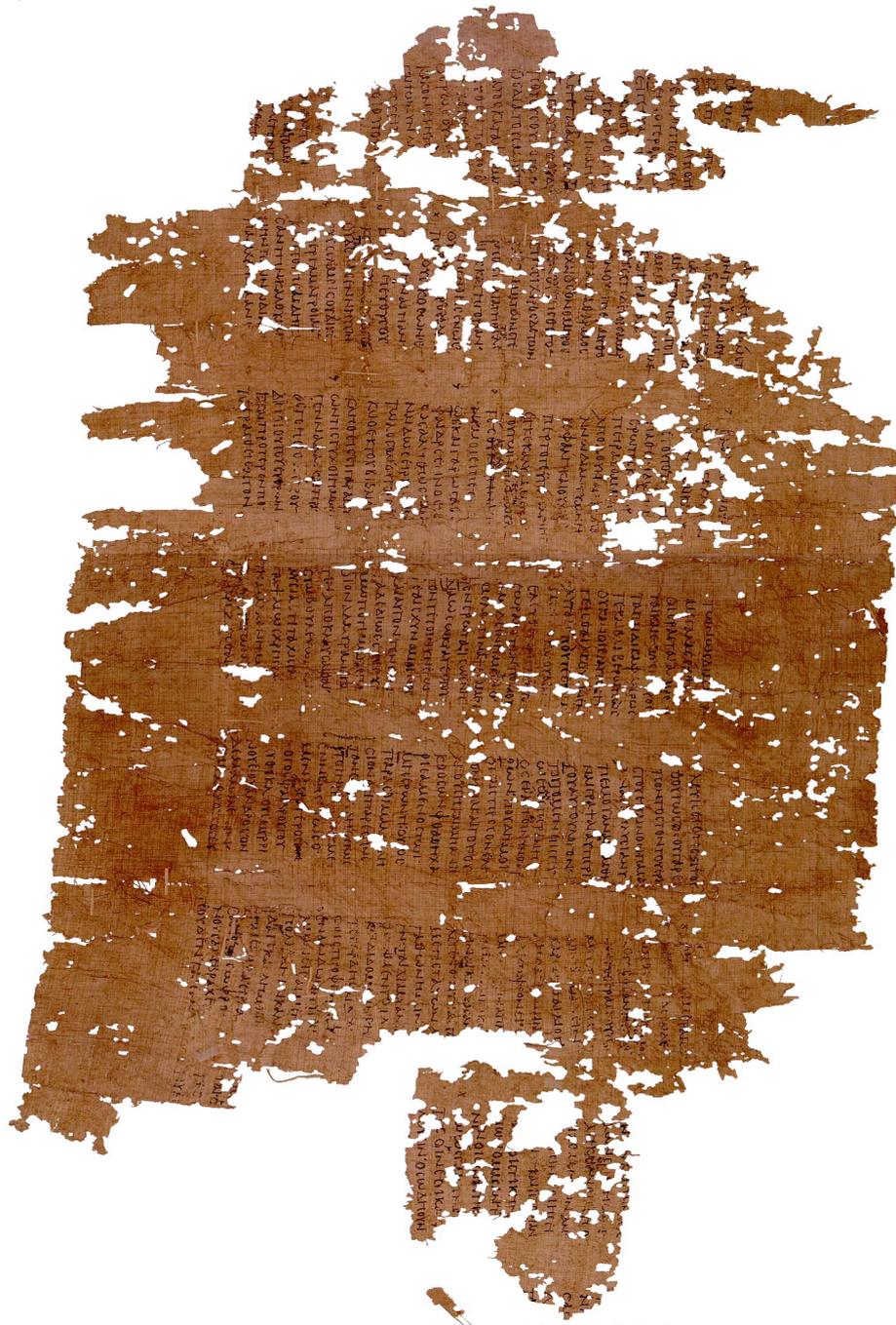


Fig. 6. Facsimile of 2nd century papyrus roll of Plato's *Phaedrus*. (Source: Oxford University's exhibition *Oxyrhynchus: A City and its Texts* (1998): *The Oxyrhynchus Papyri* vol. XVII 2102).

Permalink: http://www.papyrology.ox.ac.uk/POxy/VExhibition/exhib_welcome.html.

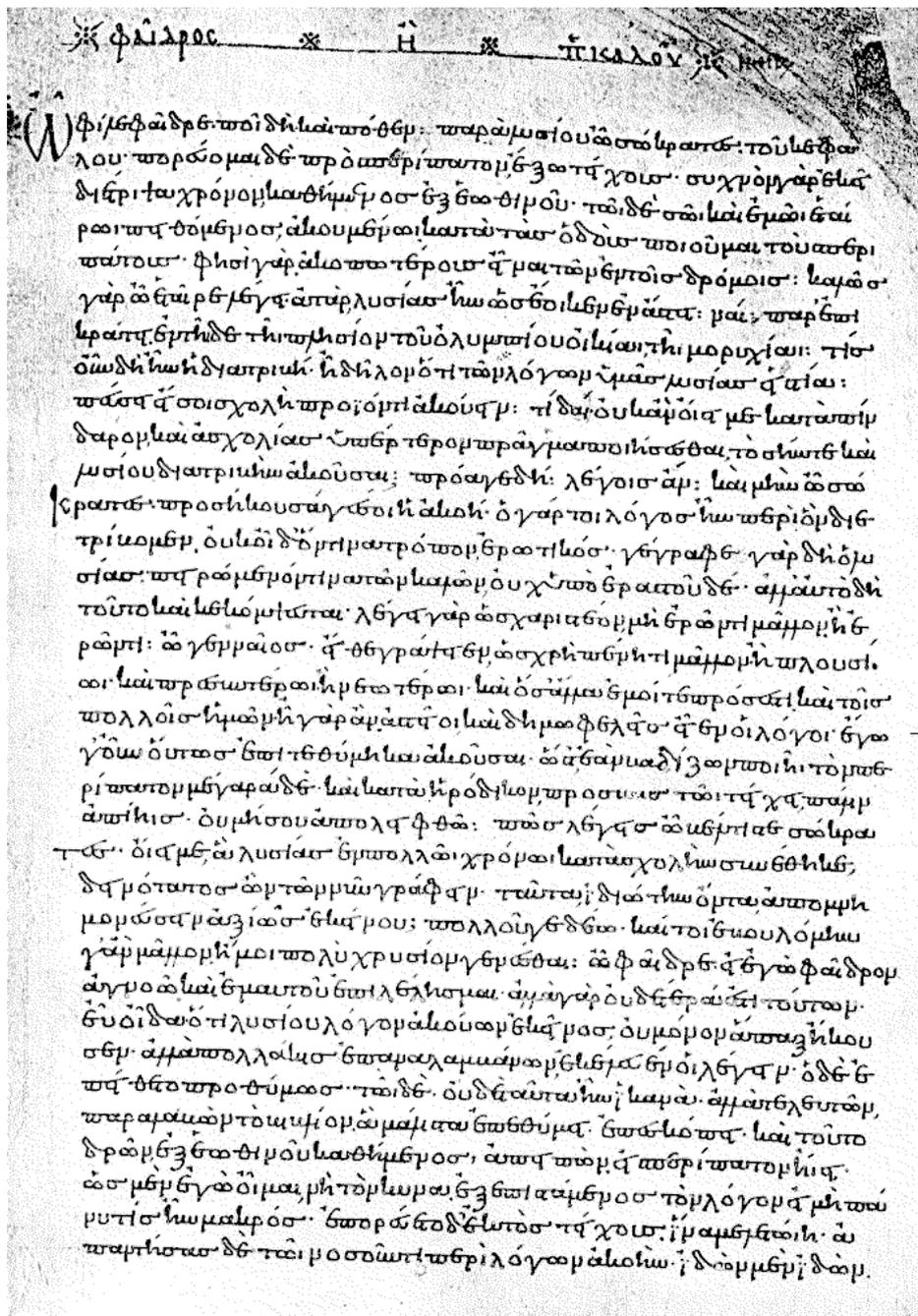


Fig. 7. Facsimile of minuscule parchment containing the first speech of Socrates in Plato's *Phaedrus* in Codex Clarkianus 49, Bodleian Library, Oxford University. (Source: HALSALL, P. Forham University). Original source: *Phaedrus*, 895 CE. Uncial, (STEFFENS 8: Bodleian, Clarke MS 39, fol.224 apud HALSALL). Permalink: <http://www.fordham.edu/halsall/byzantium/paleog.asp>.

The transition from parchment to codex results in the effacement of the former in a few centuries. During the Renaissance, the printed book quite efficiently remediates the codex. The screen, which now remediates the printed book, represents an upheaval (to borrow from media theorists Peter Gendolla and

Jürgen Schäfer's terminology) of even larger proportions. Book historian Roger Chartier deems the “revolution of our present time” more extensive in nature and impact than Gutenberg's, for not only does it alter technologies of reproduction but also – and here I am blatantly extrapolating – de-anchors textual mediation without excluding processes of gradual materialization. According to Chartier, the current state of affairs is only preceded in the West by the remediation of *Volumen* to the codex, which occurs in the early Christian era (CHARTIER, 1995). If the predominance of the codex was conducive to a certain confection logic dictated by the specifics of the supports available – responsible, for example, for the organization of content into chapters –, digital mediation will foster reception practices no longer solely reliant on the mandates of flat typography. This is not to say that digital mediation orders the end of literacy but it does mean that programmable texts will require new modalities of reading, new literacies on par with their processual (executable) instantiations (Cf. HAYLES, 2008; CAYLEY, 2002). Bolter's prediction turned out to be true: the shift to computer did make writing more flexible (BOLTER, 1991, p. 2).

In *Remediation: Understanding New Media*, Jay Bolter and Richard Grusin explain our culture's paradoxical relationship with media by means of a reflection on the theme of remediation: “our culture wants to both multiply its media and to erase all traces of mediation: ideally, it wants to erase its media in the very act of multiplying it” (BOLTER & GRUSIN, 1999, p. 5). Bolter and Grusin write that the concept of remediation is essentially constituted by the representation of one medium in another (1999, p. 45). The double logic of remediation, thus, mandates that it articulate two divergent notions, namely *immediacy* and *hypermediacy* (Ibid.). While the former refers to a tendency in media to feign transparency – which is to say the attempt at the illusion of immediacy by means of a simulated convergence between the thing represented and the act of representation –, the latter points to the spectral-opposite predisposition toward self-reflexivity – i.e., “an intense awareness, and even revealing of the medium” (BOLTER, 2001, p. 25). To be sure, hypermediacy could be regarded as a manifestation of a deep-seated (preconscious?) fascination with representational practices and technological apparatuses. Speculatively, immediacy evinced by Bolter and Grusin as a bird-feeding webcam designed to create the illusion of proximity could be said to attend to conflicting reactions to lack of tactility –

sensory deprivation compensated by informational overload – in contemporary societies. Skype-related applications constitute a case in point, as do entire sections of scholarship devoted to such topics as ubiquitous computing and cloud computing.³ Evidently, one must draw a distinction between materiality of supports and conceptual debates. My investigation pertains to the latter, which is to say, to the conceptual and aesthetic implications to be detected in computer-based and *digitally-born literary* communication. Having said this, remediation, hypermediacy and immediacy serve as tropes of reflection on the mechanisms and logics of digital literature, very often simultaneously operative in the works' production and reception.

In *Electronic Literature: New Horizons for the Literary*, theorist Katherine Hayles starts with the very bold, and in my view, quite pertinent claim: to see electronic literature as a remediation of print, or as she puts it, “through the lens of print, is not to see it at all” (HAYLES, 2008, p. 3). Because their operational logics are recursively linked to new processes of technological mediation, works of digital literature test the limits, or, in Hayles' terms, “test the boundaries of the literary and [challenge] us to rethink our assumptions of what literature can do or be” (HAYLES, 2008, p. 5). Her aim in the chapter opportunely entitled “Electronic Literature: What is it?” being to accommodate both readers new to electronic literature as well as those well versed in the discussions on digital art and media, she chooses to introduce the topic with a “fanciful scenario,” an anecdote about the appearance of the first printed codex.

The Scriptorium was in turmoil. Brother Paul, the precentor in charge, had detected a murmur from the back row and, furious that the rule of silence was being compromised, strode down the aisle just in time to see Brother Jacob tuck something under his robe. When he demanded to see it, Brother Jacob shamefacedly produced a codex, but not one that the antiquarii of this monastery had copied – or of any monastery, for this Psalter was *printed*. Shocked as much by the sight of the mechanical type as by Brother Jacob's transgression, Brother

³ This movement toward proximity and immediacy is one of the reasons that lead me to discuss the topic of presence in the context of digital literature. Of course, the path is not that simple, for on the other side of the double logic of remediation is *hypermediacy*. I am particularly fond of David Sasaki's explanation of “the Cloud.” In his essay “Cloud Intelligence: Explore Human Nature, Envision Human Future,” included in the 2009 volume of *Ars Electronica* entitled *Human Nature*: “The Cloud includes Cloud Computing, Cloud Activism and Cloud Intelligence as three layers, but these layers support each other. Cloud Computing upgrades the Internet infrastructure to a new level to enable global roaming as digital nomads. Cloud Activism improves how people collaborate and take action to change the world. Then we have Cloud Intelligence from persistent connections between people and the information they generate at every second” (SASAKI, 2009, p.20).

Paul so far forgot himself that he too broke the silence, thundering that if books could be produced by fast cheap and mechanical means, their value as precious artifacts would be compromised. Moreover, if any Thomas, Richard, or Harold could find his way into print, would not writing itself be compromised and become commonplace scribbling? And how would the spread of cheap printed materials affect the culture of the Word, bringing scribbling into every hut and hovel whose occupants had hitherto relied on priests to interpret writing for them? The questions hung in the air; none dared imagine what answers the passing of time would bring. (HAYLES, 2008, p. 1 – emphasis added)

Indeed the passing of time has issued more questions than answers – the “transgression” of print being fully reenacted with the advent of computer-aided writing technologies. As author of books such as *How We Became Posthuman* and *My Mother Was a Computer*, Hayles is surely well aware of the epistemological conflicts inherent to hybridizations of man/machine as well as their conceptual and concrete implications to the dynamics of literary and cultural communications. Thus, when she announces that the state of writing is again in turmoil, she understands that she is far from announcing a new fact. Regardless of her motives – by which I mean whether she does it precisely because it is the goal of the chapter to meet the expectations of digitally informed academic readers as well as those of scholars new to the field – the anecdote seems the perfect way to start. To the layman, it serves the function of drawing him in. To the literary scholar, the fictitious and yet highly probable⁴ scene in the scriptorium will certainly conjure Marshall McLuhan’s *The Gutenberg Galaxy* (1962) and Walter Ong’s *Orality and Literacy: The Technologizing of the Word* (1982). While both authors speak of the interiorization of writing and their consequences to human cognitive structurations, both are clear in their understanding of the emergence of the alphabet as an external (at the level of *techné*) imposition to be later processed internally. Nevertheless, insofar as interiorization is a key point, I

⁴ In fact, in the introduction to his 1991 book, *Writing Space: The Computer, Hypertext and the History of Writing*, David Bolter prefaces the chapter with a passage from Victor Hugo’s classic novel *Notre-Dame de Paris*, (1482): “Opening the window of his cell, he pointed to the immense church of Notre Dame, which, with its twin towers, stone walls, and monstrous cupola forming a black silhouette against the starry sky, resembled an enormous two-headed sphinx seated in the middle of the city. The archdeacon pondered the giant edifice for a few moments in silence, then with a sigh he stretched the right hand toward the printed book that lay open on his table and his left hand toward Notre Dame and turned a sad eye from the book to the church. ‘Alas!’ he said, ‘This will destroy that’” (HUGO, 1967, p. 197 apud BOLTER, 1991, p. 1). Bolter explains that the priest “meant not only that printing and literacy would undermine the authority of the church but also that ‘human thought (...) would change its mode of expression, that the principal idea of each generation would no longer write itself with the same material and in the same way, that the book of stone, so solid and durable, would give place to the book made of paper, yet more solid and durable’” (Ibid.).

would submit that because it relates to what Hayles defines as “thinking digital,” from a theoretical stance (with a systems-theory slant), it requires both critical distance (processed recursively and internally) and an insider’s understanding of how digital literature both upsets and expands the conventions of print – internal processing of *external* references (Cf. LUHMANN, 1995). Put otherwise, digital literary communication demands cognitive reconfigurations based on a reentry paradigm of material and (inter)medial restructurings (Cf. HAYLES, 2005; 2008: JÄGER, 2010).⁵

The interiorization of writing technologies provokes an operative change in processes of perception and cognition: “Only the phonetic alphabet makes a break between eye and ear” (MCLUHAN, 2008, p. 27). Referring to the work of J. C. Carothers on the role of written words on perceptive mechanisms, McLuhan notes that techniques of inscription quite efficiently obfuscate the aural dimension of words: when words are written down they become inevitably coupled with the perceptual surface of the visual world, thereby losing “the dynamism which is so characteristic of the auditory world in general, and of the spoken word in particular” (CAROTHERS, 1959, p. 311 apud MCLUHAN, 2008, p. 20). In his *Orality and Literacy*, Walter Ong has a chapter entitled “Writing Restructures Consciousness” wherein he explains that an understanding of oral cultures facilitates insights on the workings of cognition:

Without writing, the literate mind would not and could not think as it does, not only when engaged in writing but normally even when it is composing its thoughts in oral form. More than any other single invention, writing has transformed human consciousness. (ONG, 2002, p. 77)

In a chapter called “Plato, Writing and Computers,” Ong draws an attractive analogy between the initial recalcitrance to the computer as a creative medium and Plato’s notorious rejection of the alphabet (*Phaedrus* and *Seventh Letter*). Plato equated writing with *techné* and argued that its implementation was utterly undesirable: something inhuman, capable of destroying memory, discouraging of

⁵ In his “Epistemology of Disruptions,” Jäger notes that Luhmann’s distinction between medium and form could be transcribed to his own binary distinction of disruption and transparency: “the disruption would be the state of communication in which we would not observe the form *through* (the invisible) medium but would observe *with the* medium the ‘contingency of creating forms’” (JÄGER, 2010, p. 84. Cf. LUHMANN, *Kunst der Gesellschaft*, 168 apud JÄGER).

the intricate intellectual dispositions of the human mind and lacking in the refinements of rhetorical arts (ONG, 1982).⁶

Socrates: At the Egyptian city of Naucratis, there was a famous old god, whose name was Theuth; the bird which is called the Ibis is sacred to him, and he was the inventor of many arts, such as arithmetic and calculation and geometry and astronomy and draughts and dice, but his great discovery was the use of letters. Now in those days the god Thamus was the king of the whole country of Egypt; and he dwelt in that great city of Upper Egypt which the Hellenes call Egyptian Thebes, and the god himself is called by them Ammon. To him came Theuth and showed his inventions, desiring that the other Egyptians might be allowed to have the benefit of them; he enumerated them, and Thamus enquired about their several uses, and praised some of them and censured others, as he approved or disapproved of them. It would take a long time to repeat all that Thamus said to Theuth in praise or blame of the various arts. But when they came to letters, This, said Theuth, will make the Egyptians wiser and give them better memories; it is a specific both for the memory and for the wit. Thamus replied: O most ingenious Theuth, the parent or inventor of an art is not always the best judge of the utility or inutility of his own inventions to the users of them. And in this instance, you who are the father of letters, from a paternal love of your own children have been led to attribute to them a quality which they cannot have; for this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific which you have discovered is an aid not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth; they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality. (PHAEDRUS, trans B. Jowett, 274-5)

In Plato's defense, one must recall that processes of internalization and assimilation have, over the course of time, rendered the exteriority of *techné*

⁶ Just as Plato looked reservedly at the advent of writing, by the mid-1980s it was not obvious to most people that the computer could become a word processor, admitting only its utility as an instrument for calculations, data storage and all kinds of bureaucratic services. Well, if remediation consists of the natural process of media transition toward technological development, we may agree with Walter Ong in that "technology is artificial, but – paradox again – artificiality is natural to human beings" (ONG, 1982, p. 82). It is natural, therefore, that a new kind of literary creation has been born from the artificiality of digital media. Arguably, the aversion to computers mentioned by Ong in his 1982 book has subsided in 2010. There is a reason, after all, why topics such as ubiquitous computing and affective media are increasingly common in new media conferences and seminars. Last semester alone, the Rhode Island School of Design had in its curriculum courses such as "Body Electric" and "Becoming Animal: Technical + Environmental". Such a selection demonstrates the way in which the body and issues of embodiment are increasingly relevant as influencing interface. Affective computing and augmented reality, to cite two examples, are all but "natural" components of a new scenario wherein interface becomes an interstice (in Nicholas Bourriaud's terms), a place of negotiation where things ultimately "happen": the moment of touch between the image of your foot as captured by your Phone camera and the augmented reality view of the street on which you are walking. This is the ground where electronic or digital literature flourishes. Processes of internalization will inevitably adapt to these changes.

essentially invisible.⁷ While the debate on the extent to which language acquisition molds perception is not yet settled – this irrespectively of language being an instinct, as cognitive psychologist Steven Pinker would have it –, there is no question that language is a set of socially constructed codes and that human experience of the world is informed by it.⁸ Plato’s charges against writing as inhuman are somewhat justified and even to be expected. They occurred precisely because the technology of writing could still be regarded as such – i.e., as something pertaining to the external realm of discursivity (Cf. JÄGER, 2010). With regards to the exteriority of technology, one could argue, alongside McLuhan, “[that] those who experience the first onset of technology, whether it be the alphabet or radio, respond most emphatically” (McLUHAN, 2008, p. 23). Not surprisingly in light of his theoretical inquiries, McLuhan correlates the emphasis of culturally specific reactions with sensory “dilations” of our eyes and ears (Ibid.). I shall have more to say on these “novel” patterns of mediated sensory interplay when we get to immersive mixed media installations. According to McLuhan, “the true revolution” occurs in the prolonged adjusting phase when the community starts to perceptually and cognitively adapt to new models of mediation (Ibid.). It stands to reason that computer-based literary mediations should undergo protracted gestation periods of assimilation. When I speak of media revolutions (which indubitably refer to their material substrates) I do not mean to suggest the existence of what Jäger has called a “cognitive original” (JÄGER, 2010, p. 79), but rather that semantics will adapt to media operationally.

⁷ Incidentally, following Havelock’s footsteps, Ong notes that the great irony behind Plato’s aversion to writing is that the philosopher’s entire epistemology was anchored in the structurations of the written text – the visual concept of Platonic form derived from the Latin root *video*. Having nothing of the interactivity and organicity of orality, Platonic forms are static and operationally closed (ONG, 1982). “The term *idea*, form, is visually based, coming from the same root as the Latin *video*, to see, and such English derivatives of vision, visible, or videotape. Platonic form was form conceived of by analogy with visible form. The platonic ideas are voiceless, immobile, devoid of all warmth, not interactive but isolated, not part of the human lifeworld at all but utterly above and beyond it” (ONG, 1982, pp. 79-80). Plato could not have been aware of the unconscious forces latent in his arguments.

⁸ I am not unaware that by this statement I imply that literacy restructures cognitive processes. I refer the reader to Steven Pinker’s *The Language Instinct* (MIT Press) for further reading.

3.2.

Digital Humanities: Hypertext and Beyond

Many new media theorists, beginning with Bolter, have agreed on the importance of the passage from orality to literacy in the larger context of digital humanities – writing establishes what Ong calls context-free language or autonomous discourse: i.e., “discourse which cannot be directly questioned or contested as oral speech” (BOLTER, 1991). With hypermedia, the initial systemic configuration is reversed: as in the oral paradigm of interference-prone Homeric rhetoric, computer-based literature reorganizes the reader’s role in a manner akin to the dynamic workings of oral performances.⁹ Put simply, the reader is often encouraged to actively and dynamically interfere in the verbal and visual organization of the work. Hypertext structures being particularly amenable to such concrete, in Aarseth’s terms, non-trivial modes of interaction, it is not surprising that the topic has gained significant currency in recent epistemological inquiries focusing on revised theorizations of reception theory and reader-response criticism (Cf. SCHÄFER, 2010).

Hypertext:

The father of hypertext is commonly held to be Vannevar Bush with his microfilm-based device for associative writing, the Memex. Theorist Raine Koskimaa explains that the Memex was intended to combine a large database with the possibility of linking different sections of that database to each other. The intention was not simply to make data retrieval and modeling easier but also: “it was Bush’s idea that when a person starts reading a Memex document written by

⁹ Be it noted, however, that Ong coins the terms *primary* and *secondary orality* in order to distinguish between pre-literate orality and “present-day,” post-print orality: “The purely oral tradition or primary orality is not easy to conceive of accurately and meaningfully. Writing makes ‘words’ appear similar to things because we think of words as the visible marks signaling words to decoders: we can see and touch such inscribed words in texts and books. Written words are residue. Oral tradition has no such residue or deposit” (ONG, 1982, p. 11).

another person, she could, through the link structure, access the associative reasoning chain which was behind that particular document” (KOSKIMAA, 2000, <http://users.jyu.fi/~koskimaa/thesis/chapter1.htm#mark5>). Unfortunately, the Memex, not unlike like Stéphane Mallarmé’s *Le Livre*, never came to be. The point here is to remember that the arrival of hypertext was not much different from the advent of script, or the printed book. The turmoil is repeated at every instance of a great change. Hypertext came as both promise of liberation and apocalypse: the thing that would eventually kill the book. Ever glorified for affording malleability to electronic writing surfaces, the term *hypertext* was originally coined by Theodor H. Nelson and first appeared in the article “A File Structure for the Complex, the Changing, and the Indeterminate” (NELSON, 2003, p. 134)¹⁰:

Let me introduce the word ‘hypertext’ to mean a body of written or pictorial material interconnected in such a complex way that it could not conveniently be presented or represented on paper. It may contain summaries or maps of its contents and their interrelations; it may contain annotations, additions and footnotes from scholars who have examined it. (...) Such a system could grow indefinitely, gradually including more and more of the world’s written knowledge. (NELSON, 2003, p. 144)

In his commentary on Nelson’s article, theorist and new media artist Noah Wardrip-Fruin notes that the essay foresees a specific type of hypertext – one, in fact, whose reconfigurable interlinked informational structures allow for

¹⁰ According to Nelson, the best description of his work is by Tim Berners-Lee, quoted here: “(...) Hypertext was ‘nonsequential’ text, in which a reader was not constrained to read in any particular order, but could follow links and delve into the original document from a short quotation. Ted Nelson described a futuristic project, Xanadu[®], in which all the world’s information could be published in hypertext. (...) In Ted’s vision, every quotation would have a link back to its source, allowing original authors to be compensated by a very small amount each time the quotation was read. He had the dream of a utopian society in which all information could be shared among people who communicated as equals” (NELSON’s homepage: <http://hyperland.com/TBLpage>). To these remarks Nelson adds corrections, a few of which I choose to transcribe here: “2. I don’t believe I used the term ‘literary machines’ until 1981, when I made it the title of a book. However, 1965 is when I first used the word ‘hypertext’ in print. 3. It is vital to point out that Tim’s view of hypertext (only one-way links, invisible and not allowed to overlap) *is entirely different from mine* (visible, unbreaking n-way links by any parties, all content legally reweavable by anyone into new documents with paths back to the originals, and transclusions as well as links – as in Vannevar Bush’s original vision). (...) 7. Not ‘all the world’s information’, but all the world’s documents. The concept of ‘information’ is arguable, documents much less so. I believe Tim is finding his concept of pure information, the ‘Semantic Web’, much more difficult to achieve than hypertext documents. (...) 12. ‘Communicated as equals’ is a gracious but confusing phrase. The author and the reader are not exactly equal, they occupy different roles with frequent conflict. If he means that anyone can be an author and anyone can be a reader, that has always been true (since self-publishing has always been respectable). I would say ‘shared a level playing field’. But I appreciate the spirit of this phrasing” (Ibid.).

considerably larger degrees of granular manipulation than those found in the Web's "chunk-style" hypertext model (WARDRIP-FRUIIN, 2003). In light of these significant differences, Wardrip-Fruin pertinently notes that as unmistakable as the "power" of the Web may be, "its workings should not be mistaken for a definition of hypertext" (WARDRIP-FRUIIN, 2003, p. 133). Rather than conceive of the Web as a hypertext system, Wardrip-Fruin suggests we think of it as an enormous, all-pervading publishing sphere – "one that [attains] critical mass by employing a subset of hypertext concepts, primarily those of the chunk style" (Ibid.). According to this view, the future of the Web can possibly benefit from the implementation of other elements derived from Nelson's hypertext visions. Wardrip-Fruin's 2003 revisiting of Nelson's 1965 definition has since been updated as talks of the Web 2.0 (the Semantic Web) have been disseminated throughout the cybersphere. In any event, a doctoral thesis on digital literature would be remiss not to acknowledge the term's first appearance – especially one so deeply embedded in contemporary semantics.

Since the laws of permutation and non-linearity are certainly structuring my thinking as I write these pages, I suggest we now turn back to 1987. The hypertext fiction *Afternoon: A Story* by Michael Joyce is published by Eastgate Systems and received with awe and some critical unease. The first screen shows the following set of instructions:

This story is created with STORYSPACE, a hypertext program which is both an author's tool and a reader's medium. / • You move through the text by pressing the Return key to go from one section to another (i.e., "turn pages"); and you click the Back arrow (on the bar below) to go back ("page back"); /or / • You double-click on certain words to follow other lines of the story. Window titles often confirm words which yield. / The story exists at several levels and changes according to decisions you make. A text you have seen previously may be followed by something new, according to a choice you make or already have made during any given reading.

I haven't indicated what words yield, but they are usually ones which have texture, as well as character names and pronouns. / There are more such words early on in the story, but there are almost always options in any sequence of texts. / The lack of clear signals isn't an attempt to vex you, rather an invitation to read either inquisitively or playfully and also at depth. Click on words that interest or invite you. / Respond to questions using the Yes/No buttons below or by typing. Note that you can also type some words – and occasional one-word questions – in the text entry box to the right of the buttons below. In subsequent readings, you may wish to browse links between screens by using the Browse icon below. You can also print the text of a screen by clicking the Print icon below. The icon bar may be

dragged to relocate it. To stop reading, choose the Reader menu command. (Copyright Michael Joyce, 1987. Software copyright © Eastgate Systems, 1992-2001)

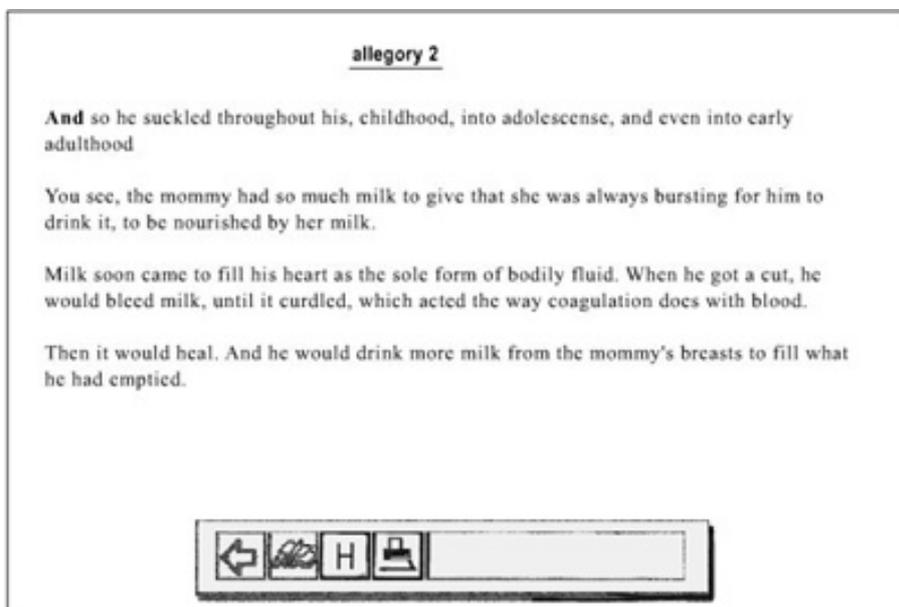


Fig. 8. Screen from Michael Joyce's *Afternoon: A Story* (1987).

In Bolter's close reading of *Afternoon*, he notes that there is a great deal of difference between the hypertextual experience and the act of reading a printed text. In hypertext there is no single, unequivocal plot and "each reading is a version, because each reading determines the story as it goes" (BOLTER, 1991, p. 144). In fact, the author goes as far as to affirm the inexistence of story: "there are only readings" (Ibid.). And Joyce confirms this with the frame (also quoted by Bolter):

Closure is, as in any fiction, a suspect quality, although here it is made manifest. When the story no longer progresses, or when it cycles, or when you tire of the paths, the experience of reading it ends. Even so, there are likely to be more opportunities than you think there are at first. A word which doesn't yield the first time you read a section may take you elsewhere if you choose it when you encounter the section again; and sometimes what seems a loop, like memory, heads off again in another direction. / There is no simple way to say this. (JOYCE, 1987. Software copyright © Eastgate Systems, 1992-2001)

Bolter was not unaware of similar precedents of non-linearity and *ars combinatoria* in literature. It can be also argued, with a considerable degree of certainty, that it is particularly improbable that Bolter was unaware of reception

aesthetics and reader-response theories as he wrote his 1991 book *Writing Spaces*. Evidently, my typology of computer-based literary communication requires that (a) I assume interactivity as a premise, and (b) that I speak of it in terms of gradations. Bolter appropriately notes that the fact that literature is an intertextual system (one of interconnected writings) is no new discovery (BOLTER, 1991). As J. Yellowlees Douglas writes in her 2001 book, *The End of Books – or Books without End?*, one may trace the history of interactive writing back to Laurence Sterne's 1759 *The Life and Opinions of Tristram Shandy* (DOUGLAS, 2001). The very fact that Bolter devotes a section of his book to Marc Saporta's *Composition No. 1* (1962) corroborates the hypothesis that interactivity is not a new trope in literary studies, but rather an epistemic precondition. Saporta's work is in itself an experiment that requires the reader to follow a set of instructions (i.e., to organize the unnumbered pages as a deck of cards). *Composition No. 1* received remarkable notoriety when it first appeared and is still mentioned by virtually every critic of digital/electronic literature (Fig. 9).

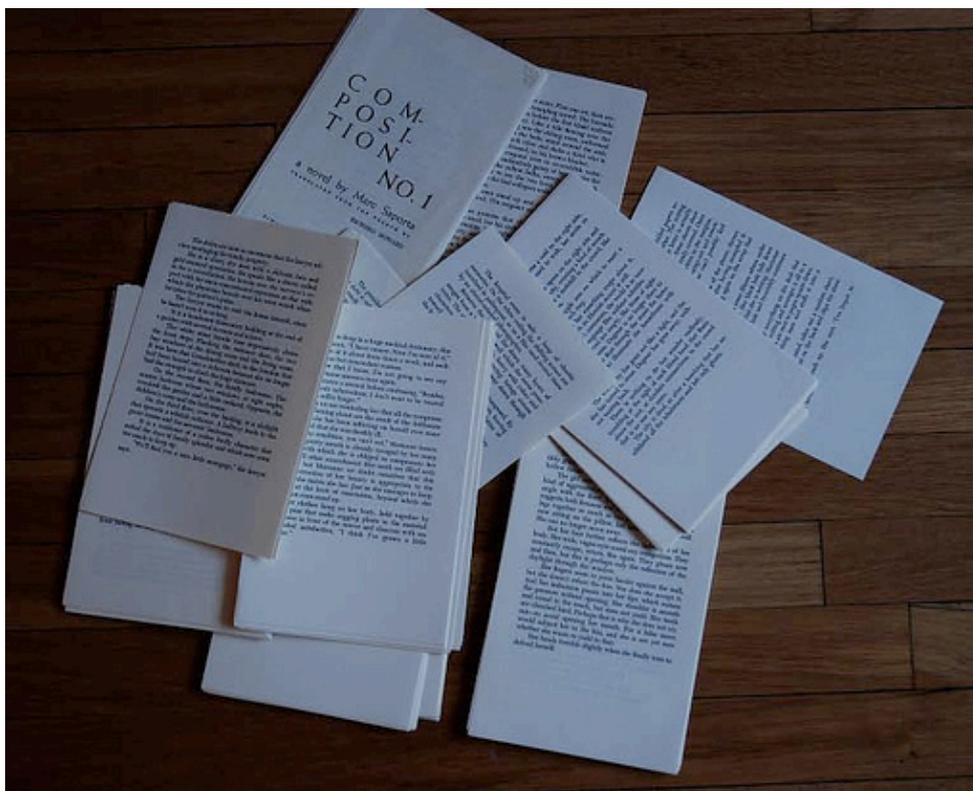


Fig. 9. Image of Marc Saporta's *Composition No. 1*.

Nevertheless, even if he did overestimate the importance of the hyperlink, Bolter's insight on the comparison between topographical writers in print and those of hypertext is entirely valid.¹¹ The authors he mentions – Sterne, James Joyce, Borges, Cortázar, Saporta – are indeed considered “difficult” writers, and why?

[Because] they call to the reader's attention the painful contrast between the temporal flow of narrated events and the interruptions and reversals that the act of writing imposes upon these events. All their experimental works are self-consciously concerned with the act of writing. The concern is shown by the difficult relationship between the narrator and the text, between the text and its reader, or both. (...) In each case, the printed fiction must work against its medium in order to be topographic. There is a conflict between the printed volume as a frame and the text that is enframed. (BOLTER, 1991, p. 143)

When he refers to Joyce's *Afternoon*, Bolter offers theoretical room for contradicting possibilities: “*Afternoon* does openly and with ease what experimental writers in print could only do with great difficulty” (BOLTER, 1991, p. 193). The great revolution of hypertextual writing is thus simple to describe: it turned experimentalism into norm, consequently eradicating the “stubbornness of the printed book” (Ibid.). If works such as *Composition No. 1* by Marc Saporta or Raymond Queneau's *Cent mille milliards de poèmes* represented a sort of literature of exhaustion¹² – i.e., the stretching of the boundaries of print media towards extreme non-linearity and spatiotemporal contradiction –, these extreme discursive configurations become but default settings in hypertextual works such as *Afternoon: A Story* and Shelly Jackson's *Patchwork Girl*. This “second-order writing” is arguably the fundamental contribution of digital writing to the history of literature (BOLTER, 1991). Of course, the corollary should be equally considered: that hypertext structures merely automate the discursive tropes which print literature has deployed for centuries: footnotes, cross-references, intertextuality, etc. It is difficult to dispute that computer-based technologies provide concrete means of “reify[ing] writing as a network” (BOLTER, 1991, p. 23).

¹¹ In her precise synthesis of electronic literature's brief history, Katherine Hayles calls attention to an erroneous association between the hyperlink and an alleged empowerment of the reader. However, as Hayles and Espen Aarseth note, the reader is tied by the rules pre-established by the author who scripted them.

¹² I borrow from John Barth's terminology.

Despite initial expectations, hypertext fictions failed to produce “the great digital novel.” That which would become “the word’s revenge on TV” (JOYCE, 1988) – in the words of Michael Joyce in 1988 – remains only a promise. While early works of digital literature consisted mostly of chunk-style hypertext (interconnected *lexia*), later works tend to exploit multimedial and immersive communicative possibilities thereby prompting highly intricate modalities of semiotic and sensory mediation (Cf. HAYLES, 2008, p. 6). After the emergence of what Hayles terms the “first” and “second generations” of digital literature, more complex protocols eventually become normalized in such works as instrumental texts, kinetic poetry, locative narratives and interactive installations (Ibid.). As sub-genres of digital literature multiply, a variety of hybrid forms invade the digital scriptorium. Enormous as they were, the contributions of early hypertext theorists have, in fact, been constantly revised by new media scholars themselves – prone to both recursivity and self-description, academic discourse tends to respond to environmental changes (here understood as medial) internally. A case in point is Hayles’ attribution of a “sweeping of the board clean” to Espen Aarseth’s seminal 1997 *Cybertext: Explorations of Ergodic Literature*. Due to its innovative “analytical cut through textual groupings” that included computer games and electronic hypertexts as well as works from print literature, Hayles deems Aarseth’s work groundbreaking (HAYLES, 2008, p. 33).

Cybertext and Ergodic Literature:

However self-evident it may appear to more advanced readers, I quote Aarseth’s definition in full as it provides grounds for many of the theoretical exercises included in this thesis.

The concept of cybertext focuses on the mechanical organization of the text, by positing the intricacies of the medium as an integral part of the literary exchange. However, it also centers attention on the consumer, or user, of the text, as a more integrated figure than even reader-response theorists would claim. *The performance of their reader takes place all in his head*, while the user of cybertext also performs in an extranoematic sense. During the cybertextual process, the user will have effectuated a semiotic sequence, and this selective movement is a work of physical construction that the various processes of ‘reading’ do not account for. This phenomenon I call ergodic, using a term appropriated from physics that

derives from the Greek words *ergon* and *hodos*, meaning ‘work’ and ‘path.’ In ergodic literature, nontrivial effort is required to allow the reader to traverse the text. (AARSETH, 1997, p. 1 – emphasis added)

One cannot help but notice that the choice of the verb *to traverse* – vis-à-vis the more tenuous option, *to cross* – underscores the high measure of reader interference anticipated in the interface engineering of the work. At stake are not normative discussions on the trope of interactivity – which is here taken to be an a priori condition of literary discourse. Rather, Aarseth’s cybertextual models speak to the measure of interactivity allotted to the reader: the interaction gradient contained in each text or textual device. According to Aarseth, a reader of print literature is “safe,” whereas “the cybertext reader is not safe [for] the cybertext puts its would-be reader at risk: the risk of rejection” (1997, p. 4). The same could be argued of print literature, but in Aarseth’s terms, “*the effort and energy demanded by the cybertext of its reader raise the stakes of interpretation to those of intervention*” (AARSETH, 1997, p. 4 – emphasis added)

The latter claim is tremendously daring for it directly addresses one of the most fundamental points in Aarseth’s cybertextual framework – one might refer to it as the *aporia* of medial supports, wherein the configuration and design of the work mandate a theoretical and critical shift from “what [is] read,” to “what [is] read *from*” (AARSETH, 1997, p. 3). Since the category of cybertext is not limited to works produced in digital media, it is no surprise that Aarseth should cite *The I-Ching or Book of Changes*, dating from the Chou dynasty (1122-770 BC), as “possibly the best example of cybertext in antiquity” (AARSETH, 1997, p. 9). The Chinese text of oracular wisdom consists of sixty-four symbols, or hexagrams, which are binary combinations of six continuous or discontinuous lines ($64 = 2^6$). The *I-Ching* utilizes rules of permutation and combination as mechanisms of oracular inquiry – such are the *I-Ching*’s affinities with the logics of information technology that it has served as inspiration for the binary mathematics of G. W. von Leibniz, applied today in our very computers. For instance, the manipulation of the hexagram 49, ☰ Ko/Revolution, containing a brief inscription and six sub-texts, is able to generate 4096 diverse texts (Ibid.).¹³

¹³ In poetry, Aarseth mentions Queneau’s *Cent mille milliard de poèmes*, characterized by a mechanism that produces 1014 sonnets, and the *Calligrammes* by Guillaume Apollinaire as examples of non-digital ergodic works. In the novel genre, in addition to *Composition No. 1* by

To be sure, these structural alterations pose significant obstacles to the task of interpretation. Aarseth himself wonders why “variable expression of nonlinear text [is] so easily mistaken for the semantic ambiguity of the linear text” (Ibid.). The author resolves this impasse by reverting to various metaphors for the labyrinth, specifically the descriptive model of thinking of narrative text as labyrinthine: “The problem with these powerful metaphors (...) is that they enable a systematic misrepresentation of the relationship between narrative text and reader” (AARSETH, 1997, p. 3). Aarseth’s spacio-dynamic fallacy requires that narratives be perceived not as presentations of the world – did he mean representations? – but rather holistically, as “that world itself.” Not only does this inference allow him to detect short-circuits in the Saussurean binarism, but also to suggest a suspension of Derrida’s *différance* “that projects an objective level beyond the text, a primary metaphysical structure that generates both textual sign and our understanding of it, rather than the other way around” (1997, p. 4).

If Hans Ulrich Gumbrecht’s post-hermeneutical debate has taught us anything, it is that notions of (re)presentations and further re-presentifications are not as simple as Aarseth would have us believe, even if one evokes Derrida’s notion of *différance* and its alleged suspension. As a matter of fact, one of the fundamental debates on ergodic literature problematizes the limitation of narrative constructs in predominantly intermedial and non-linear contexts. In the course of his theorization, Aarseth contrasts narrative and ergodic modes of textual communication.¹⁴

The study of cybertexts reveals the misprision of the spacio-dynamic metaphors of narrative theory, because ergodic literature incarnates these models in a way linear text narratives do not. This may be hard to understand for the traditional literary

Marc Saporta, the author also refers to *Hopscotch* [Rayuela] by Julio Cortázar, where the reader is invited to read chapters in a non-linear way, according to preset rules (Aarseth, 1997).

¹⁴ According to theorist Markku Eskelinen, who devoted his 2007 Ph.D. dissertation *Travels in Cybertextuality. The Challenge of Ergodic Literature and Ludology to Literary Theory* to the study of Espen Aarseth’s categories of cybertext and ergodic literature, Aarseth contrasts ergodic and narrative modes for very good reasons: “from the outset Aarseth’s concept of ergodic literature seems to concern differences only within one of the seven dimensions, the main dividing line separating the interpretative user function from the three other user functions. Therefore we could begin our investigation by focusing on the other six parameters of his typology of textual communication, as in principle they could all be combined to the interpretative user function within the realm of non-ergodic narrative literature. We’ll have eight major shifts to deal with: from static to intratextual and textual dynamics, from determinate to indeterminate texts, from intransient to transient time, from random to controlled access, from impersonal to personal perspective, and from no links to links and conditional links” (Ibid.).

critic who cannot perceive the difference between metaphorical structure and logical structure, but it is essential. The cybertext reader *is* a player, a gambler; the cybertext *is* a game world or world-game; it *is* possible to explore, get lost, and discover secret paths in these texts, not metaphorically, but through the topological structures of the textual machinery. This is not a difference between games and literature but rather between games and narratives. (AARSETH, 1997, p. 4)

From a systemic perspective, a logical narrative course (a *mythos* in the Aristotelian sense) can always be generated through the operative isolation of distinct routes. Thus regarded, combinatory works (hypertextual or not) then would be nothing but multicursal narratives. More concretely, twentieth-century literature, with textual configurations not based on the linear structure of the simple *mythos*, displays its proclivity for semantic ambiguity and richness in precisely these innovative forms of articulation that do not subscribe to the one-dimensional, beginning-middle-end models.¹⁵ Aarseth does recognize that the cybertextual perspective (AARSETH, 1997, p. 5) – used as a descriptive strategy for “a broad media category” – presupposes an overlap between game and narrative models. In order to clarify this point, I propose we revisit Markku Eskelinen’s essay, “Six Problems in Search of a Solution: The Challenge of Cybertext Theory and Ludology to Literary Theory,” where he proposes a revision of Gérard Genette’s traditional theory of narratological poetics as a method for analyzing ergodic literature.

Though it is not my goal to fully dissect Genette’s rigorous taxonomy, I find value in Eskelinen’s point that while in literature one needs to configure in order to be able to interpret, in games interpretation must precede configuration (ESKELINEN, 2007). I thereby reproduce Eskelinen’s six basic questions and urge the reader to focus primarily on the first, second and third amongst them.

First, as narratives are supposed to be transmedial how should we extend literary narratology beyond its print heritage? *Second* and *thirdly*, in addition to various narrative and would-be-narrative constellations and devices also the relations between texts and the text’s relation to itself have changed. *Fourthly*, all these changes have their bearing on the role of the reader in the situation where the lack of conventions is well matched with the outdated expectations concerning

¹⁵ Cf. Aarseth, 1997, p. 3: “This distinction is inconspicuous in a linear expression text, since when you read from *War and Peace*, you believe you are reading *War and Peace*. In drama, the relationship between a play and its (varying) performance is a hierarchical and explicit one; it makes trivial sense to distinguish between the two. In cybertext, however, the distinction is crucial – and rather different; when you read from a cybertext, you are constantly reminded of inaccessible strategies and paths not taken, voices not heard” (3). Is Aarseth implying that these unheard voices and paths not taken are absent from the so-called linear text?

narratives, texts and transtextuality. *Fifthly*, enter playability and the fear of variety when readers and scholars should perhaps be willing to give up the idea of literary wholes and try to pursue happiness in the form of parts, phases and playthings. *Sixthly*, we'll try to shed some ludological light into the recent trend of building textual instruments and instrumental texts. (ESKELINEN, 2007, p. 179 – emphasis added)

Taking Genette's formal narratology (*Narrative Discourse; Narrative Discourse Revisited*: 1980; 1988) as a point of departure, Eskelinen is able to draw a distinction between ergodic deviations and classical narrative conventions (2007, p. 181). For our purposes, it is important to note that Genette subdivides his basic categories into three groups, namely, *tense*, *mood* and *voice*.¹⁶ *Tense* concerns temporal relations and distortions between *story time* and *narrative time*, which in turn are studied under three registers: order (*ordre*), frequency (*fréquence*) and duration (*durée*) (GENETTE, 1972). We shall focus on selected aspects from the latter triad. According to Genette perfect temporal congruity between story time and narrative time would be unfeasible, for the essential function of narrative structure is to establish consonance between *diegetic* and narrative time – wherein story/diegesis stands for the signified or narrative content and narrative is equated with the signifier, or the text itself (GENETTE, 1980; METZ, 1974). For the sake of clarity, I approach the concept of *diegesis* through Christian Metz's film semiotic stance.¹⁷ In fact, in *Figures III*, Genette opens a chapter on order with the following quotation from Metz:

Le récit est une séquence deux fois temporelle...: il y a le temps de la chose racontée et le temps du récit (temps du signifié et temps du signifiant). Cette dualité n'est pas seulement ce qui rend possibles toutes les distorsions temporelles qu'il est banal de relever dans les récits (trois ans de la vie du héros résumés en deux phases d'un roman, ou en quelques plans d'une montage "fréquentatif" de cinéma, etc.); plus fondamentalement, elle nous invite à constater que l'une des

¹⁶ On this issue, it is pertinent to quote directly from Genette as he explains that "les trois classes proposées ici, qui désignent des champs d'étude et déterminent la disposition des chapitres suivants, ne recouvrent pas mais recourent de façon complexe les trois catégories (...) qui désignent des niveaux de définition du récit : le *temps* et le *mode* jouent tous les deux aux niveaux de rapports entre *narration* et *récit*, et entre *narration* et *histoire*" (GENETTE, 1972, p. 76).

¹⁷ In his *Film Language: Some Points in the Semiotics of the Cinema* (1974), Metz writes that "the word [diegesis] is derived from the Greek διήγησις, 'narration' and was used particularly to designate one of the obligatory parts of judiciary discourse, the recital of facts" (METZ In MAST, COOHEN & BRAUDY eds., 1992, p. 172). Interestingly, in his *Story and Discourse: Narrative Structure in Fiction and Film*, Seymour Chatman verifies a difference between reading time and plot time, "or as [he prefers] to distinguish them, *discourse time* – the time it takes to peruse the discourse – and *story time*, the duration of the purported events of the narrative" (CHATMAN, 1980, p. 62).

fonctions du récit est de monnayer un temps dans l'autre temps. (METZ, 1958, p. 27 apud GENETTE, 1972, p. 77)

The temporal schematics applied to classic narrative structures proves insufficient in computer-based literature, as temporal categories can be algorithmically manipulated – i.e., digital texts are, of necessity, transient and thus set severe procedural constrictions to reception. Eskelinen has a clever way of illustrating the digital reader's predicament:

Imagine your favorite classic that could be read only once or only for two hours, or in the night time or outside office hours only, or of which you are allowed to read only two chapters in a decade or in a lifetime, tempting you to collaborate with other readers or leave it and your vague memories of it as an inheritance to the next generation of readers. (ESKELINEN, 2007, p. 181)

In light of these altered temporal configurations, Eskelinen proposes that two additional categories be added to Genette's equation. In addition to *story time* and *narrative time*, Eskelinen includes *system time* (measuring the permanence of the text, its appearances and disappearances) and *reading time* (measuring the availability of the text to the reader/user) (ESKELINEN, 2007). This schematic approach can be quite beneficial when reading literary hypertext works, such as the aforementioned *Afternoon: A Story* by Michael Joyce. A case in point is Noah Wardrip-Fruin's partly interactive Web browser *The Impermanence Agent*, cited by Eskelinen.¹⁸ In *Hypermedia, Eternal Life, and the Impermanence Agent*, Wardrip-Fruin defines *The Impermanence Agent* as "storyteller, as well as a participant in the stories of the agent and hypermedia" (FRUIN, <http://www.impermanenceagent.org/agent/essay.html>).

The Impermanence Agent was first displayed as a key piece in the "Brave New World" exhibition organized by the Guggenheim Museum in New York in 2001. Interacting with users as a Web browser window, *The Impermanence Agent* consists of a server and a client-side application projected as a small window on the corner of the user's screen. As such, *The Impermanence Agent* does not demand prolonged attention nor does it evoke contemplative gestures. On the contrary, it induces a series of peripheral glimpses – fast, fluid and superficial readings held in accordance with rigid temporal constrictions. When

¹⁸ Of course multi-linearity and time are not conceptually interchangeable. Eskelinen focuses on (reading) time and thus moves away from the original focus on writing space (the different paths through a story).

the program is activated, the user's own navigation drives the narrative, which in turn is only marginally experimented: "*The Impermanence Agent* is art meant (...) to be left open on the desktop for a week. It only tells its story, shows its images, offers its advice while we keep the browser window it watches active" (Ibid.). The output, albeit unpredictable, proves amenable to a variety of theoretical conjectures: the unrestricted access to presumably private user preferences incites discussions on privacy and surveillance, for instance. Once installed, *The Impermanence Agent* cannot be accessed directly, and users/readers are thus held hostage to algorithmic order.

The Web disappoints us with its too-perfect reflection of our ambivalent relationships with impermanence and openness: dynamic and unstable, diverse and overwhelming. In response, some Web businesses are marketing fantasies of agents that will find for us only the information we desire, sheltering us from chance encounters with unpleasant content and broken links. The Impermanence Agent is a different response. (FRUIN, <http://www.impermanenceagent.org/agent/essay.html>)

The Impermanence Agent explores a peculiar sub-genre of digital literature short of the hypertext model proper. In his essay on the piece – which, ironically, is no longer available on the Web for installation – Wardrip-Fruin explains that *The Agent* tells the story of Ikkyu, the Zen master, who questioned death. "Whatever we may say about digital culture, it is always time for something to die" (Ibid.). If, on the one hand, *The Agent* allows for a certain measure of interactivity – the program does track each user's Web browsing habits and processes this information internally so as to customize a story – on the other it is autonomous and self-enclosed (not allowing itself to be accessed directly). *The Impermanence Agent* operatively processes user search routines – in accordance with browsing and random algorithmic calculations. Once user search habits are quantitatively translated into input, the program is able to recursively generate diverse results (outputs). Like a mutant sculpture, adaptable to contingent environments, *The Impermanence Agent* is a Web installation that, by complying with Gilles Deleuze and Felix Guattari's laws of *connection* and *heterogeneity*, provokes recursively dynamic manipulations generally unachievable in print. Eskelinen notes that *The Agent* is able to reduce the number of original *textons* – pre-reception strings of text (as they "appear" to readers before semiosis) – and

scriptons – the ontological configuration of textual strings (as they “exist” in the text) – to zero. This is an extraordinary feat, for it opens many a fitting door to radical customization conjectures (ESKELINEN, 2007). According to Aarseth, any object whose primary function is to relay semantic information would fall under the heading of text. Two inferences follow from this hypothesis: first, semantic selections and their implications are inextricably linked to the materiality of supports (media). Secondly, the materiality of language can be deemed a constitutive “irreducible” only insofar as a distinction can be drawn between text and information (AARSETH, 1997). By information Aarseth means “strings of signs” emerging at the level of production – “which may (but [do] not have to) make sense to a given observer” (1997, p. 62). On a final note, Aarseth’s concept of a *traversal function* is explained as follows: the traversal function is the mechanism through which *textons* generate *scriptons*:

Their names are not important, but the difference between them is. In a book such as Raymond Queneau's sonnet machine *Cent mille milliards de poèmes* (Queneau 1961), where the user folds lines in the book to “compose” sonnets, there are only 140 *textons*, but they combine into 100,000,000,000,000 possible *scriptons*. (AARSETH, 1997, p. 62 – emphasis added)

This is not to suggest that within the cybertextual framework, interpretation occurs at a scriptonic level: “scriptons [are] not necessarily identical to what readers read, which is yet another entity (a *lexie* in the Barthenian sense?)” (Ibid.). Strictly speaking, scriptons are generative outputs of ergodic transactions, which precede semiosis.

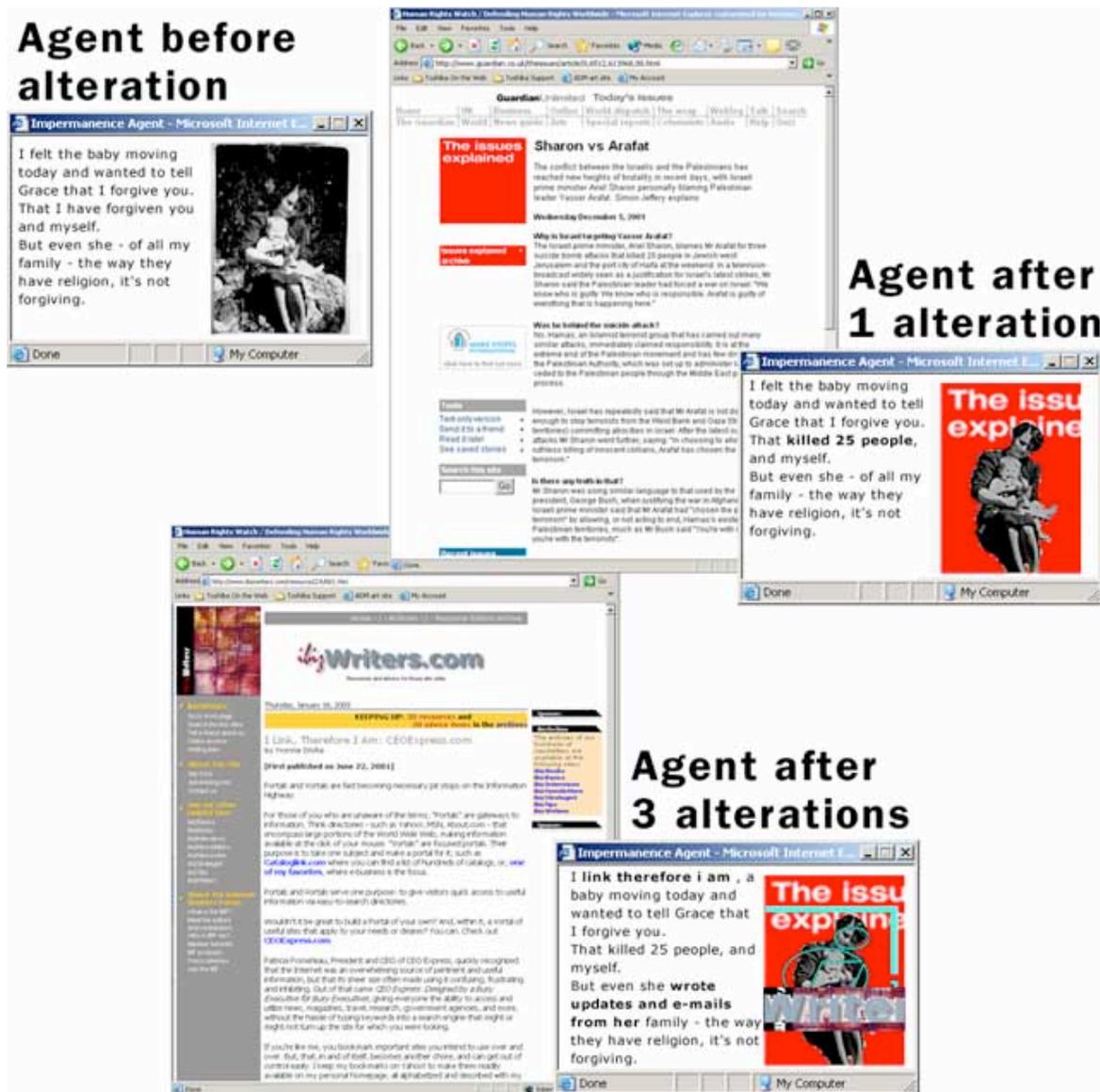


Fig. 10. Image of *The Impermanence Agent* – Noah Wardrip-Fruin (2003).

In light of the hypertextual variations covered thus far, I should like to revert the reader's attention to Genette's category of mood (*mode*) as it relates to Eskelinen's revised typology. As the author succinctly formulates with regards to the Genettean model, "[Mood] deals with various techniques of regulating quantity and quality of narrative information" (ESKELINEN, 2007, p. 182). To be sure, structuralist narratology anticipates mobile narrative instances – i.e., narrators capable of exchanging places, collaborating, expanding their territories

and moving across *homodiegetic* and *heterodiegetic* narrative levels.¹⁹ Mood (*mode*), with its two subcategories, namely *distance* and *focalization*, accounts for these variations:

On peut en effet raconter plus ou moins ce que l'on raconte, et le raconter selon tel ou tel point de vue ; (...) la « représentation », ou plus exactement l'information narrative a ses degrés ; le récit peut fournir au lecteur plus ou moins de détails, et de façon plus ou moins directe, et sembler ainsi (...) se tenir à plus ou moins grande *distance* de ce qu'il raconte; il peut aussi choisir de régler l'information qu'il livre, non plus par cette sorte de filtrage uniforme, mais selon les capacités de connaissance de telle ou telle partie prenante de l'histoire. (GENETTE 1972, p. 183)

It is important to understand that focalization transcends the question of whose voice tells the story, as the focalizer may or may not coincide with the narrator (CULLER, 2009, p. 120). Eskelinen argues that because in computer-based literature traditional narrative devices consist of strings of signs, one should make a further distinction between textonic and scriptonic entities (ESKELINEN, 2007). This means accounting for a “pool” or “archive” of possible narrators subject to cybertextual reconfiguration protocols – i.e., narrators potentially becoming more overt or covert. Eskelinen’s augmented narratology can be used to our advantage when we approach both classic hypertextual models and the more daring “instrumental texts”, such as *Screen* by Noah Wardrip-Fruin. In these altered contexts – and especially in these – the textual string itself becomes a mobile changing entity, intermedially alternating between semantic and typographic instantiations, thus generating both hermeneutical and kinesthetic impacts. The same applies to conceptual reformulations of Genette’s five subtypes of transtextuality (as they relate to cybertextuality).

I would like to focus on two said subtypes, namely, intertextuality and hypertextuality. The first addresses relations of co-presence between two or several texts. This includes quotations, allusions and plagiarism – all assuredly recurring themes in digital literature. However, as Eskelinen cleverly points out, “in these days just because you read it doesn’t mean it is there and vice versa”

¹⁹ Cf. Chatman: “Genette distinguishes between the ‘distance’ (*portée*) of an anachrony and its ‘amplitude’ (*amplitude*). ‘Distance’ is the span of time from NOW backward or forward to the inception of the anachrony; amplitude is the duration of the anachronous event itself. There are different means for joining the anachrony to the ongoing story: external, internal, or mixed. (...) Internal anachronies in turn can be subdivided into those that do not interfere with the interrupted story (‘heterodiegetic’) and those that do (‘homodiegetic’)” (CHATMAN, 1980, p. 65).

(ESKELINEN, 2007, p. 190). In other words, the invisible, occult and inaccessible portions of texts will withhold comfort from the reader accustomed to omniscience or at least to the foreseeable calculation of expectations. The second subtype, hypertextuality, is by all accounts a vital term in the discussion of digital literature, if for no other reason than its relationship with the term *hypertext*.

Earlier I alluded to the first use of the term in the discussion of Ted Nelson's famous 1965 essay. In *Palimpsestes: La littérature au second degré*, Genette defines as hypertextual the text that results in a premeditated transformation of a pre-existing text, as in the case of parody (GENETTE, 1982). If one recalls Nelson's definition of hypertext – i.e., a reweaveable string of “visible, unbreaking n-way [signs], (...) including transclusions as well as links” (NELSON, 1965, p. 136) – one notices a clear affinity with the Genettean designation. Eskelinen explains hypertextuality as essentially a “systematic grafting of a text (a hypertext) upon an earlier text (a hypotext) in a way that is not commentary” (ESKELINEN, 2007, p. 191). These transformations may occur in accordance with two procedural principles: one formal and another thematic (GENETTE, 1982). Eskelinen proposes that cybertext include a third criterion to this typology, namely, that of functionality. A case in point would be a hypertextual fiction of the detective genre whose algorithmically-scripted ability to self-regulate – i.e., through the insertion of conditional links functioning as destructive scriptonic devices – would ultimately generate significant constrictions on reception mechanisms (ESKELINEN, 2007).

(...) reader-users armed with configurative and textonic user functions can have fundamental impact on the text, a possibility not even on the horizon of Genette's work in the early 1980's. To take one concrete example, how should we conceptualize the personalized differences in ergodic works like *Book Unbound* or *The Impermanence Agent*, as the different ways their readers use them will make the versions of them very different from each other? (ESKELINEN, 2007, p. 192)

Indeed, how should we conceptualize these changes? The ways to understand Eskelinen's take on this matter are twofold: either the author thinks interpretation and interaction are dissociated from one another, or he feels that, in the case of ergodic models, interaction precludes interpretative functions. That manipulation of scriptons can alter the material basis of computer-based literature is apparent. The true novelty which digital literature brings to the table is its

capacity to concretize interactivity, or remediate the process of interaction by transferring it from the realm of cognition into surface play.

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(portion from Plaintiff Performance by Bjørn Magnhildøen)

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Having considered these recent conceptual and medial reconfigurations, it seems inevitable to briefly revisit a few key notions derived from literary theory in order to assess the relationship between interactivity and interpretation. What I have in mind is a quick glimpse at the not so recent past: in 1962, Umberto Eco publishes the first edition of his *Opera Averta (The Open Work)*, which in fact is also addressed by Aarseth, who describes it as “perhaps the only major aesthetic theory that directly engages the same types of text as the ergodic perspective” (AARSETH, 1997, p. 51). Due to its capacity to adapt to probabilistic – contingent – medial and representational frameworks, Eco’s open work model is entirely adequate in ergodic contexts. In fact, even more apropos is a particular subtype of open work, the drastic work-in-movement (*opere in movimento*), which provides the reader with the possibility of reorganizing and, in effect, manipulating compositional outputs by means of physical interventions. In this perspective, literary semiosis – which presupposes semantic operations – would occur a posteriori.

Eco begins his explanation of the open work model with a few examples taken from music, namely *Klavierstück XI* by Karlheinz Stockhausen, wherein the performer is given a single large sheet of music paper with a series of note groupings from which he must freely choose. The second is Luciano Berio’s *Sequence for Solo Flute*, in which despite there being a text predetermining the sequence and intensity of the sounds to be played, the performer is again given the

freedom to determine the duration of a note inside the fixed framework. The third example is Pousseur's *Scambi*, where the listener takes an active role in the structuring of the musical discourse: "*Scambi* is not so much a musical composition as a field of possibilities, an explicit invitation to exercise choice" (POUSSEUR apud. ECO, 1989, pp. 1-2).²⁰ To an extent, the reception of a work of art or literature always assumes interpretative choices – largely dictated by historically-specific cultural configurations. The difference between an "open" and "closed" work is then one of scale, which is to say that it lies in the degree of "openness" pre-scripted in the work. Recall, the work of art as an autonomous, balanced whole is *not* put to question by the introduction of the open work, but the manner in which each act of reception inevitably activates both interpretative functions and performative potentialities.

In the introduction to the English version of Eco's work, critic David Robey notes that it is crucial to read Eco's *The Poetics of the Open Work* within the discursive context in which it was produced. Otherwise put, Eco must be read in light of the prevailing Crocean hermeneutical aesthetics that dominated Italian literary studies at the time, placing high value on such concepts as artistic intuition, and thereby limiting critical exercise to the normative act of extracting hidden and *stable* "messages" from texts (ROBEY, 1989, p. ix).

The order of a work of art in this period is a mirror of imperial and theocratic society. The laws governing textual interpretation are the laws of an authoritarian regime which guide the individual in his every action, prescribing the ends for him and offering him the means to attain them.

Evidently, some works are more open – in a more tangible fashion – than others. Underpinning Eco's poetics is a desire to offer alternative theoretical and conceptual tools to analyze antiestablishment cultural trends. Such an inference, I

²⁰ The full description reads as follows "[*Scambi*] is made up of sixteen sections. Each of these can be linked to any two others, without weakening the logical continuity of the musical process. Two of its sections, for example, are introduced by similar motifs (after which they evolve in divergent patterns); another pair of sections, on the contrary, tends to develop towards the same climax. Since the performer can start or finish with any one section, a considerable number of sequential permutations are made available to him. Furthermore, the two sections which begin on the same motif can be played simultaneously, so as to present a more complex structural polyphony. It is not out of the question that we conceive these formal notations as a marketable product: if they were tape-recorded and the purchaser had a sufficiently sophisticated reception apparatus, then the general public would be in a position to develop a private musical construct of its own and a new collective sensibility in matters of musical presentation and duration could emerge" (POUSSEUR apud ECO, 1989, p. 2).

would submit, could well be advanced with regards to the situational context in which digital literature inscribes itself. Eco alludes to James Joyce's *Ulysses* and more radically to his *Finnegans Wake* as quintessential examples of open works in literature. Both the former, wherein "the last residue of Aristotelian categories has disappeared," and the latter, a work that "bends back on itself" in a manner reminiscent of the relativistic paradigm of Einsteinian universe (ECO, 1989, p. 10), depict literary universes that thrive because of their precise reenactment of the semantic inexhaustibility of language. To that effect, Eco mentions Joyce's technique of the *calembour*, or pun, which operates through the combination of several different etymological roots into single words: "The reader of *Finnegans Wake* is in a position similar to that of the person listening to postdodecaphonic serial composition" (ECO, 1989, p. 10).

Displacing the argument to new media as well as cybertextual perspectives, a few observations seem in order. That semiotic processes are always inextricably linked to media-specific procedures is a premise which rehabilitates prognostic activities about the futures of digital literary communications. Aarseth argues that his is a significantly broader perspective than Eco's: "[despite the fact that] some cybertexts use randomness, and many contain structures that need to be 'filled in,' or arranged by the user, the ergodic work is not limited to these means of variation" (AARSETH, 1997, p. 51). This is a discussion by no means resolved. Suffice it to mention that strikingly akin to Aarseth's ergodically-dynamic model is the work-in-movement *Livre* envisioned by poet Stéphane Mallarmé: "Le monde existe pour aboutir à un livre," wrote the poet. Mallarmé envisioned a universe in constant state of emergence, structured around laws of permutability. Though Eco admits to an element of naïveté in the enterprise ("it is not surprising that it was never brought to completion" (ECO, 1989, p. 13), he finds it intriguing that such an example would occur "at the very threshold of the modern period" (Ibid.). I find it highly indicative of structural changes reciprocally reflected in new repertoires of societal self-descriptions. In many ways, *Le livre* is a conjectural precursor of the algorithmic protocols readily available in digital processes of literary communication, where syntax and semantics are subject to the transcriptive logics of intermediation (JÄGER, 2010). Mallarmé's utopian endeavor constitutes a step that far surpasses the strictly recursive operational logics one finds in *Finnegans Wake* or even Samuel Beckett's *Waiting for Godot*.

It is, thus, no accident that we slide into terrains ruled by laws of permutation and grouping when we discuss digital textual instruments, such as Noah Wardrip-Fruin's *Regime Change* and *News Reader* (Cf. Chapter 2) or John Cayley's *Book Unbound* (extract below).²¹

BOOK UNBOUND (Selection)

Indra's Net VI

When you open the book unbound, you will change it. New collocations of phrases generated from its hidden given text - a short piece of prose by the work's initiator - will be displayed. After the screen fills, you will be invited to select a phrase from the generated text by clicking on the first and the last words of a string of language which appeals to you. Your selections will be collected on the page of this book named Leaf, where you will be able to copy or edit them as you wish.

They will also become a part of the hidden store of potential collocations from which the book will go on to generate new text. That is, your selections will feed back into the process and change it irreversibly.

If you continue reading and selecting over many sessions, your preferred collocations may eventually come to dominate the process. The work may then reach a state of chaotic stability, strangely attracted to one particular modulated reading of its original seed text. (CAYLEY, <http://homepage.mac.com/shadoof/net/in/incat.html#BUNB>)

It is precisely in this spirit of “chaotic stability” that we move on to the next section on production of presence.

²¹ For a thorough study of combinatorial theory and its connection to hypertext fiction see Schäfer, J. “Gutenberg Galaxy Revis(it)ed: A Brief History of Combinatory, Hypertextual and Collaborative Literature from the Baroque Period to the Present” IN GENDOLLA & SCHÄFER, 2007, p. 121.

3.3.

Everyday Cartesianism and Its Discontents

Though I am inclined to believe that a distinction between hermeneutic or interpretative readings and ergodic relations should be drawn, I also contend that ergodic and hermeneutic relations are not mutually exclusive. While hermeneutic relations are founded on processes of meaning attribution as well as signifying strategies, ergodic readings presume concrete and programmable actions/interventions at the material, pre-semiotic level – that is to say, physical and non-trivial methods of interactivity. Literature need not be computer-based for ergodic relations to emerge: examples such as those of Saporta and Cortázar, quoted by Aarseth, demonstrate that print literature may well require an ergodic approach. On the other hand, textual installations such as Camille Utterback and Romy Achituv’s *Text Rain* and generative digital poems such as Noah Wardrip-Fruin’s *Regime Change* demonstrate the need for a heuristic approach to digital works, which is to say one wherein the interactor’s sensory-motor engagements are coupled with literary semiosis. Such hypotheses will help bring to the fore an underlying priority of this thesis: that is, a reflection on digital literature as producer of presence effects, as per Hans Ulrich Gumbrecht’s theorizations. A few words of caution seem in order. I do not mean to suggest that digital literature should exclude interpretation. Not at all. I simply wish to propose that digital literature, as a space of negotiation, offers particularly fertile grounds for the emergence of presence effects and that these presence effects – because they can only exist in oscillation with their counterparts, namely “meaning effects” – rehabilitate materiality and embodiment as topics of theoretical reflection. In the end, I agree with Gumbrecht when he affirms that the Cartesian dimension does not “cover (and should never) cover the full complexity of existence” (GUMBRECHT, 2004, p. 142). The question then remains as to the extent to which ergodicity, an a priori setting of digital literature, facilitates non-hermeneutic appropriations of digital works.

Hans Ulrich Gumbrecht’s “A Farewell to Interpretation” is one of the essays that sparked the debate on a reinstatement of body (*res extensa*) in the humanities.

Though the text is significantly more insurgent in spirit and rhetoric than Gumbrecht's later writings on the subject of production of presence, it contains a number of relevant theoretical suggestions. Reacting against what he dubs "everyday Cartesianism," the author emphasizes that the intellectual program, which begins in 1989 with the publication of the *Materialities of Communication* collection and attains full crystallization in his short *Production of Presence: What Meaning Cannot Convey* in 2004, has every intention of being theoretical. Despite the ordinary connotation of the word *theory* (infused with a high dose of abstraction), such a counterintuitive combination – materialities of communication – proves to be adequate. Should the focus on materialities result in viable alternates to metaphysical thought as a chief practice in Western intellectual tradition, then it should be undertaken (GUMBRECHT, 1994, p. 390). Underpinning the criticism against the equation of theory with abstraction is the assumption that the function of theory is to frame alternate modes of societal self-descriptions. Gumbrecht structures his argument around the notion that theory is not – nor should be – a recursive reflection of a pre-existing cultural configuration, but rather an instrument of structural and semantic change, a sphere wherein several forms of human self-reference can be operatively renegotiated. In this context, theories that might appear "counterintuitive" at first glance have a greater chance of actually imparting change than those that simply subscribe to more commonsensical principles (GUMBRECHT, 1994).

For our purposes, it is useful to read "A Farewell to Interpretation" within the greater context of the theorization of production of presence. Evidently, one should trace back this recent emphasis on materiality and sensation in literary theory and aesthetics to Susan Sontag's 1961 essay *Against Interpretation*, and the concept of presence itself to Jean Luc Nancy's *A Birth to Presence*, both acknowledged by Gumbrecht. For now, it is important to establish the difference between Sontag and Gumbrecht, namely, their distinctive views on the hermeneutic paradigm and the place it should occupy within the greater tradition of the humanities. In her *Against Interpretation*, Sontag advocates the abandonment of hermeneutics in favor of what she terms "an erotics" of art:

The aim of commentary [would] be to make works of art – and, by analogy, our own experience – more, rather than less, real to us. The function of criticism should

be to show how it is what it is, even that it is what it is, rather than to show what it means. (SONTAG, 1964, p. 14 – emphasis added)

Sontag's urge for a retrieval of the senses was fostered by a desire to deal with the afflictions of modern life in her time: the policy of excess, the overcrowding of spaces, imagetic and sensorial overloads, etc.: "What is important now is to recover our senses. We must learn to see more, to hear more, to feel more" (Ibid.).²² Despite the fact that since Sontag there have been no significant changes in the perception of excess – except to evince drastic deterioration (increased disorder) –, the rhetoric-of-choice of those advocating pure affect has, nevertheless, been significantly watered down with more cautious discursive strategies. A case in point is the perceivable tonal discrepancy in Gumbrecht's writings between 1989 and 2004. Whereas in "A Farewell to Interpretation" the author warns his audience about the perils of the ever-increasing degree of abstraction inscribed in the semantics of Western intellectual tradition – particularly as embodied by academe (GUMBRECHT, 1994, p. 390) –, in 2004 the author offers the consensual adage: "challenging the exclusive status of interpretation within the humanities, however, does not mean that this book is "against interpretation" (GUMBRECHT, 2004, p. 2).

Contrary to Sontag's hypothesis, which literally preaches the abandonment of interpretative models, Gumbrecht's reflection on presence does not purport to be definitive or exclusive. It does not aim to replace the hermeneutic claim per se, but does seek to challenge its claim to universality (*Geisteswissenschaften*). In light of our present discussion, the implication is that aesthetic experience cannot be reduced to a simple antinomy between presence and meaning. Rather, it invariably occurs in *simultaneous* oscillatory tension – between semiosis ("meaning effects") and sensory activation ("presence effects"). With respect to the latter, one further distinction ought to be taken into account: namely, that of temporality versus spatiality, which sets the tone for the semantic richness embedded in the expression "production of presence":

²² Cf. Sontag: "Think of the sheer multiplication of works of art available to every one of us, superadded to the conflicting tastes and odors and sights of the urban environment that bombard our senses. Ours is a culture based on excess, on overproduction; the result is a loss of sharpness in sensory experience. All the conditions of modern life – its material plenitude, its sheer crowdedness – conjoin to dull our sensory faculties. And it is in the light of the condition of our senses, our capacities (rather than those of another age), that the task of the critic must be assessed" (SONTAG, 1964, p. 14).

The word presence does not refer (at least does not mainly refer) to a temporal but to a spatial relationship with the world and its objects. Something that is “present” is supposed to be tangible for human hands, which implies that, conversely, it can have an immediate impact on human bodies. (GUMBRECHT, 2004, p. xiii)

Presence from the Latin *prae-esse* refers to a pre-reflexive and non-metaphysical engagement with the world – i.e., tangibility to the body. Likewise, production, used in accordance with its etymological Latin root *producere* denotes the effect of tangibility, “the act of bringing forth an object in space” (GUMBRECHT, 2004, p. 1). Built into the expression “production of presence” – wherein producing means the act of bringing forth, presenting, generating, inducing, revealing, elongating, etc. – is an emphasis on spatiality: not unwavering spatiality, but one that is contingent and, in effect, in a constant state of transience. That which is tangible can be so in varying degrees, that is, with greater or lesser proximity and intensity. This accounts for Gumbrecht’s admitted affinities with the work of Martin Seel, to which I shall return, as well as the former’s claim that “poetry is perhaps the most powerful example of the simultaneity of presence and meaning effects” (2004, p. 18). One of the consequences Gumbrecht ascribes to the “enthronement of interpretation” as the chief practice in the humanities is the lack of a suitable repertoire of “noninterpretive concepts” (GUMBRECHT, 2004, p. 52). From a purely academic stance, this presents a difficulty. Descriptive or not, close readings – i.e., *The Agent*, *The Child* and others to come – cannot occur outside discourse. Insofar as the “semantic ratification of meaning [has] its place only within the horizon of meditated and semiological systems of representation” (JÄGER, 2010, p. 76) and insofar as perception is affected by these medial articulations, interpretation – as a cognitive function, and albeit at varying granularities – is rendered somewhat unavoidable.

Gumbrecht underscores the fact that all present objects, or all “things of the world”, will include a “desire for such immediacy,” despite the impossibility of unmediated contact with the world (GUMBRECHT, 2004, pp. xiii-xiv). A possible way of reading these claims is to restate them in terms of the semantic duality embedded in the term *experience*. In his arguably ergodic 1997 book *In*

*1926: Living on the Edge of Time*²³, Gumbrecht has a subchapter – or one of the 51 arrays, as he classifies them – devoted to “Reporters” that begins as follows:

In its June 26 issue, the magazine *Die literarische Welt* presents a debate on “news reporting and literature.” Together with a number of nationally prominent authors, such as Max Brod, Alfred Döblin, Leonhard Frank, and Heinrich Mann, the journalist Leo Lania analyzes the impact of news reporting on contemporary literary studies and genres. Lania focuses on the relation between what he calls “the penetrating voice of the present” and a particular style of thought: “The penetrating voice of the present cannot be ignored. It pushes the most romantic dreamers from their remote corners into the merciless light of day. There, all things acquire new shapes and colors, and their meaning and existence disclose themselves only to those who have the courage to measure its contours without presumption. To look at them, to listen to them, to experience them anew turns them further into lived experience.” (LANIA, p. 322 apud GUMBRECHT, 1997, p. 185)

Key in this passage is the concept of “lived experience” (*Erleben*). The reporter, according to Gumbrecht, “returns from the highly unusual substantive form *der Erleber* (‘the experiencer’)” (GUMBRECHT, 1997, p. 185). What would account for such enthusiasm or discursive persistence? The answer lies in the semantic richness of term *Erleben* (“lived experience”) – in direct contraposition to both *Erfahrung* (“experience”) and *Wahrnehmung* (“perception”), which denote two different albeit relevant approaches. While the latter denotes apprehension of the world by the senses, the former refers to

²³ Although his model is hypertextual, *In 1926: Living at the Edge of Time* is a printed book. Gumbrecht could not have been clearer when he said that the non-inclusion of images or other media aids – which were used in the work’s composition – is intentionally veered towards denying the reader any sensorial help besides the printed word: “Obviously I know that a book will never be so close to the illusion of touching, smelling or tasting past worlds as a movie or museum. This explains the two questions that most dominate me when I write this book: how far can a historiographic discourse go to satisfy the desire to consider past worlds present? Are there specific functions in this approach that a text can cover more efficiently than any other medium?” (GUMBRECHT, 1997, p. 18). Nevertheless, the feeling of reality that the author intends to create and convey does come to be a concrete sensorial reality. In 2008, I directly asked the author about the “historic environment of 1926”, in other words, what type of reality does the book in fact rebuild and he told me to pay attention to the choice of the preposition “in” contained in the book’s title – specifically, to its metonymic proximity to the Heideggerian concept of being-in-the-world (*Dasein*). In the book he does explain that each of the entries comprising the constellation of the 1926 worlds is written with the maximum degree of “superficiality and concreteness” (GUMBRECHT, 1997, p. 1). It is up to the reader to jump from one entry to another, feeling the fragrances of perfumes and car fumes, listening to noises in cafes, dodging the sweat in boxing matches or blood in bullfights, or merely touching the very strange gelatinous thickness of gomina. The reader is invited to participate in this experience according to his wishes and interest, led by a skilled theorist, who abdicates fully from narrative and teleological models of historiographic representation and ventures into the risky, maze-like structure of the hypertextual rhizome, where each of the 51 entries is openly correlated to the others. Gumbrecht’s intention is to compose each entry so that it creates in the reader a certain mood (*stimmung*) corresponding to its theme – i.e., elevators will give a concrete impression, a “mood” of elevators, etc.

experience as the cognitive result of interpreting the perceived world – i.e., according to culturally received categories generated by social processes of communication. Because *Erleben* is placed between perception and experience, it bears close conceptual associations with production of presence.

Gumbrecht's reporter presupposes tangibility, which presents itself as a problematic notion, for it can potentially supplant theories of correspondence with theories of construct (Cf. LUHMANN, 1998) while at the same time presuming ontological articulations – i.e., substance. That which is present is veritably tangible to our bodies albeit in varying degrees. The concept of production of presence, be it also noted, is discursively anchored in the premise of differentiation. Otherwise put, any philosophical or theoretical stance against the Cartesian position – purely dependent on the dissociation of human mind (*cogito*) from the body (*res extensa*) – can become a prospective source of theorization on presence (GUMBRECHT, 2004, p. 17-18).²⁴ In the second chapter of his synthetic *Production of Presence: What Meaning Cannot Convey*, Gumbrecht briefly tackles the pre-history of Western metaphysical tradition. That interpretation came to be seen as the single legitimate mode of world-appropriation is partly attributable to the semiotic a priori of language (GUMBRECHT, 2004).

It should be said that Gumbrecht's take on the history of the Western intellectual tradition is rendered in the form of a tale of systemic shifts. The iconographic tradition of the Middle Ages and Early Renaissance comes to reflect structural changes recursively played out in semantic and normative modifications within societal apparatuses of self-description. While medieval man saw himself as indissoluble from the world around him, early modern man (subject or the Cartesian *cogito*) envisions the self as extramundane, his body (*res extensa*) being relegated to the observable entirety of the world of things. It is important to

²⁴ Cf. GUMBRECHT, 2004: "That any form of communication implies such a production of presence, that any form of communication through its material elements, will 'touch' the bodies of the persons communicating in specific and varying ways may be a relatively trivial observation – but it is true nevertheless that this fact had been bracketed (if not – progressively – forgotten) by Western theory building ever since the Cartesian *cogito* made the ontology of human existence depend exclusively on the movements of the human mind. Conversely and from an epistemological point of view, this also meant that any philosophical and theoretical positions that are critical of the Cartesian dismissal of the human body as *res extensa* and, with it, critical of the elimination of space, can become potential sources for the development of a reflection on presence" (GUMBRECHT, 2004, pp. 17-18).

underscore the fact that as Gumbrecht and Luhmann theorize about the second-order subject, they refer to a long development at the level of *mentalités*, which eventually leads to the notions of the individual subject and modernity.²⁵

(...) the intense discussion about the relationship between the cultural present of the seventeenth century and the classical Greco-Roman age that took place in the Académie Française around 1700, which we today call the *Querelle des anciens et des modernes*, was a further step in the direction toward unfolding the multiple implications of the hermeneutic field. (GUMBRECHT, 2004, p. 33)²⁶

Undercutting these “implications” is the notion that time itself is a historical construct – i.e., the historization of historical chronotope (GUMBRECHT, 1998). The *Querelle* marks a schism which reifies the dominance assigned to the dimension of time over that of space. It is only through time that subjectivity becomes fully possible, for it is through time that subjects connect themselves with the dimension of action in existence (*praxis*). In early modernity we see the “subject” at the moment of its birth – i.e., at the threshold between medieval worldviews and what we have come to subsume under the term modernity, which unravels in several phases. As opposed to chronology as one may be, one needs to assume that – and again, at the level of *mentalités* only – preceding the self-reflexive, second-order observer is the first-order observer. Luhmann explains this transition in terms of the separation or, more precisely, the emergence of the category of the *Umwelt*, or environment, in opposition to the concept of subject.

Much depends on making an effort to reconstruct the concept ‘subject’ with the precision that once gave it its meaning. One can find many forerunners – in the concept of the soul and its cognitive parts, in the form of thought as reflexivity (*noesis noeseos*), or in the Cartesian concept of the ‘I think,’ which designates a

²⁵ Cf. LUHMANN, N. In the English edition of his seminal *Social Systems*, Luhmann addresses the question of the subject as early as in the preface, dubbed “Instead of a Preface.” Adopting a playfully ironic tone, Luhmann writes: “one knows how ‘the subject’ is endangered these days by French aerosols and the ozone hole of deconstruction. But what would there be to save? Is the nostalgia for the concept of ‘subject’ and ‘action’ more than the expression of an emotional attachment to the corresponding traditions? Have these concepts ever been precisely formulated? And what is their empirical reference anyway? Does the subject (in the singular) have teeth and tongues (in the plural)? Are the consequences part of an action or not?” (LUHMANN, 1995, p. xxxviii). In response to these questions Luhmann is clear about affirming the hypothesis to which Gumbrecht subscribes that there ought to be an effort to reconstruct the concept of the “subject,” inaugurated by Descartes’ *cogito* and fully established in the 1800s, when it begins to display the first signs of crisis.

²⁶ In an essay entitled “A History of the Concept of the Modern,” IN Gumbrecht, H.U. *Making Sense of Life and Literature* (1992), Gumbrecht provides the reader with a detailed conceptual history of the concept of the “modern” and its connection with the event that came to be called the *Querelle* (p. 84-85).

self-certainty given independently of whether one is in error or not. But not until the end of the eighteenth century was man understood to be a subject in the strict sense, and thereby unlinked from nature. (LUHMANN, 1995, p. xxxix)

Once mind and body become parallel ontologies, the former loses its claim to material instantiation, thereby becoming disembodied entity. Nowhere is the transition from medieval cosmology to the hermeneutic (subject/object) paradigm more evident than in the Catholic and Protestant versions of the sacrament of the Eucharist. In the medieval (Catholic) version the expression *hoc est enim corpus meum* (“for this is my body”), through which transubstantiation occurs, denotes pure materiality and not a representation of something inherently absent. Thus, the emphasis on spatiality is manifest: each time the ritual of the mass takes place, “Christ’s body and Christ’s blood become tangible in the ‘forms’ of bread and wine” (GUMBRECHT, 2004, p. 28). Gumbrecht’s usage of “form” is largely drawn from Aristotelian schematics, in which the material versus immaterial dichotomy ceases to apply: “the Aristotelian sign, in contrast, brings together a substance (i.e., that which is present because it demands space) and a form (i.e., that through which a substance becomes perceptible)”²⁷ (Ibid., p. 29). Contrary to the concept of representation or *mimesis*, sovereign in the hermeneutic paradigm, the hyphenated concept of re-presentation or, more radically, that of re-presentification, is non-symbolic.

The year 1800 figures prominently in both Luhmann’s and Gumbrecht’s account of the rise of the metaphysical worldview. In the latter’s case, and specifically in *Production of Presence*, the story is told in evolutionary steps that lead to the Enlightenment and the first cracks in the edifice of modernity. The precariousness of the subject-object paradigm begins to show at the very moment the paradigm attains its full potential. Gumbrecht points to the work of Immanuel Kant as symptomatic of this crisis. Though the specifics of Gumbrecht’s critique of Kant need not concern us here, it is relevant to point out that the Enlightenment, despite its bias towards rationality, is also the time of emergence

²⁷ Gumbrecht grounds his notion of presence partly in the connection between the Aristotelian distinction between “form” and “content” and his interpretation of structuralist Louis Hjelmslev’s quadrangle, which is subdivided into four categories: “substance of content,” “form of content,” “substance of expression,” and “form of expression.” According to Gumbrecht, Hjelmslev’s structuring of the non-hermeneutical field “suggested a very schematic sequence of three questions” that would add complexity to his one original question (from *Materialities of Communication*) regarding the emergence of meaning (Cf. GUMBRECHT, 2004, pp. 14-15).

of what Michel Foucault has termed “the crisis of representation” in his *Les Mots at Les Choses: Une Archéologie des Sciences Humaines* (English translation: *The Order of Things: An Archeology of Human Sciences*). In his pre-history of metaphysics, Gumbrecht pays close attention to this epistemic turn and successfully links it to the emergence of Luhmann’s second-order observer. According to both Luhmann and Gumbrecht, this new self-referential observer, doomed to observe himself in the act of observation, marks the beginning of the end of the subject/object paradigm, for observations of the second order necessarily include contingency as a defining factor: “Only observations of the second order provide grounds for including contingency in meaning and perhaps reflecting it conceptually” (LUHMANN, 1998, p. 47).²⁸ The temporary solution adopted in the 19th century to the problem of recursivity and self-referentiality was resolved (internally, to be sure) by the de-paradoxifying articulation of events into narratives. For the genesis of digital media, this is a model no longer sufficient, as per our discussion of the expansion of the Genettean model in ergodic contexts. One of the epistemic consequences of the autopoietic turn²⁹ – which is irreversible – is its applicability to digital aesthetics: the second-order observer brings up a “compatibility” question between world-appropriation by *Erfahrung* (“experience”) concepts and *Wahrnehmung* (“perception”) world-appropriation via senses, which can only be resolved contingently through *Erleben*.

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²⁸ Because observations of the second order are autopoietic and recursive, two inferences become viable (a) that the second-order observer is necessarily aware of his body: “ao observar um ato de observação um observador de segunda ordem torna-se consciente da sua constituição corpórea” (in the act of observing himself the second-order observer becomes aware of his bodily constitution) (GUMBRECHT, 1998, p. 12); (b) that this inevitable self-reflexive loop generates the possibility of an infinity of renditions of that same (?) observation.

²⁹ Luhmann conceives of society, or social systems, in terms of operatively blind autopoietic systems consisting of communication. In Luhmann, the term “autopoiesis” is borrowed from the cognitive biology of Humberto Maturana. Autopoiesis serves to characterize the recursive operations of self-referential systems. According to Maturana such systems are constituted of “networks of productions of components that recursively, through their interactions, generate and realize the network that produces them and constitute, in the space in which they exist, the boundaries of the network as components that participate in the realization of the network” (MATURANA, H. 1981 apud KNODT in LUHMANN, 1995, p. xx).

4 Theoretical Landscapes: Towards a Definition of Digital Literature

*Words strain,
Crack and sometimes break, under the burden,
Under the tension, slip, slide, perish,
Decay with imprecision, will not stay in place,
Will not stay still*

T.S. Eliot (*Burnt Norton*)

We theoreticians have to know the laws of the peripheral in art. The peripheral is, in fact, the non-aesthetic set. It is connected with art, but the connection is not causal. But to stay alive, art must have new raw materials. Infusions of the peripheral.

Victor Shklovsky

4.1.

The *Genesis* of New Poetic Spaces: Holopoetry and Digital Literature

Responsible for such revolutionary works as the *Genesis* installation and the fluorescent GFP bunny “Alba” – a piece of transgenic art consisting of an albino bunny injected with a green fluorescent protein first isolated from the jellyfish *Aequorea victoria* –, Eduardo Kac has been an active voice in the theorization of new media art as well as a remarkable practitioner of new media language. In the foreword to Kac’s *Telepresence & Bio Art: Networking Humans, Rabbits and Robots*, art historian James Elkins states that a reviewer once said of Kac’s work “that [it] is six degrees of separation from every important issue of our time” (ELKINS, 2005, p. v). Alongside such names as Noah Wardrip-Fruin,

John Cayley and Camille Utterback, Kac is an artist engaged in the theoretical discussion of his practice.

Apart from the examples extracted from Kac's *Holopoetry*, any attempt to classify such works as the *Genesis* installation and the GFP bunny as literary would be far-fetched, at best. I shall go into further detail on this matter when I discuss Katherine Hayles' definition of digital literature, as well as her enviable ability to deflect certain issues, which, in the end, prove to be theoretical *mises en abime*. According to Kac, holography is a means of investigating the nature of language as well as its relationship to the visual arts (KAC, 1986).

My work in holography can be understood in the context of language art and visual poetry, two genres that explore the fusion of word and image. I create what I call holographic poems, or holopoems, which are essentially holograms and computer holograms that address language both as material and subject matter. I try to create texts which can only signify upon the active perceptual and cognitive engagement on the part of the reader or viewer. (KAC, <http://www.ekac.org/holopoetry.hypertext.html>)

Because holopoems create visual texts that rely entirely on audience interaction – their perceptual and cognitive engagement as well as their physical interventions –, interactivity could be said to be central to Kac's work. Kac defines his *Holopoetry* project as one of co-creation, a result of collaborative efforts in which “each reader ‘writes’ his or her own texts as he or she looks at the piece” (Ibid.). Surely, Kac's “viewer-activated choreography” is indicative of the reciprocal procedural logics embedded in all computer-based literary communication. I would submit that the true innovation of digital aesthetics – detectable not only in Kac's work but also in the works of a vast majority of new media artists – lies in the complex articulation of material instantiation (presence) with recursive intermediation (i.e., disembodied informational patterns presumably circulating independently from “the medium instantiating [them]” (HAYLES, 1999, p. 13). I mention this to rehabilitate the discussion on the difficulty in ascribing ontological value to “flickering signifiers,” – inasmuch as they consist of strings of signs or informational patterns, they can be said to preclude presence or substantiation (HAYLES, 2006). If print allows words to inhabit immutable surfaces of the page, as our discussion of remediation has indicated, digital poesis is transient, it is code – which, as John Cayley posits,

implies that “transactive mediations” occur at the moment of production.¹ In this regard, it is not sufficient to claim that ergodic relations require discrete reader interference – (reactive interactivity) on a pre-semiotic level (*Erleben*). One must also account for the manner in which perception presupposes mediation. Very succinctly, one also needs to acknowledge that the processual character of digital media effectively repels definitive ontological assertions, which, in the interest of complexity, is also why one must undertake them.

My holopoems don't rest quietly on the surface. When the viewer starts to look for words and their links, the texts will transform themselves, move in three-dimensional space, change in color and meaning, coalesce and disappear. This viewer-activated choreography is as much a part of the signifying process as the transforming verbal and visual elements themselves. (KAC, <http://www.ekac.org/holopoetry.hypertext.html>)

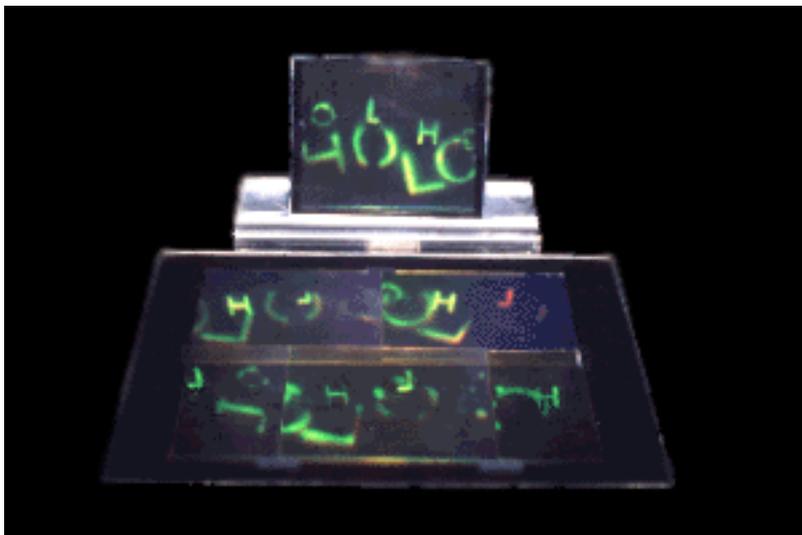


Fig. 11. HOLO/OLHO (HOLO/EYE) 25 x 30 cm. Reflection holograms mounted on wood and Plexiglass. (1983) UECLAA Collection, University of Essex, UK.

¹ In his celebrated essay “The Code Is Not the Text (Unless It Is the Text),” Cayley problematizes the ontological discussion of the flickering signifier as a means of advocating the hermeneutics of the code, wherein criticism of code-making is included in theoretical practices (CAYLEY, 2002).

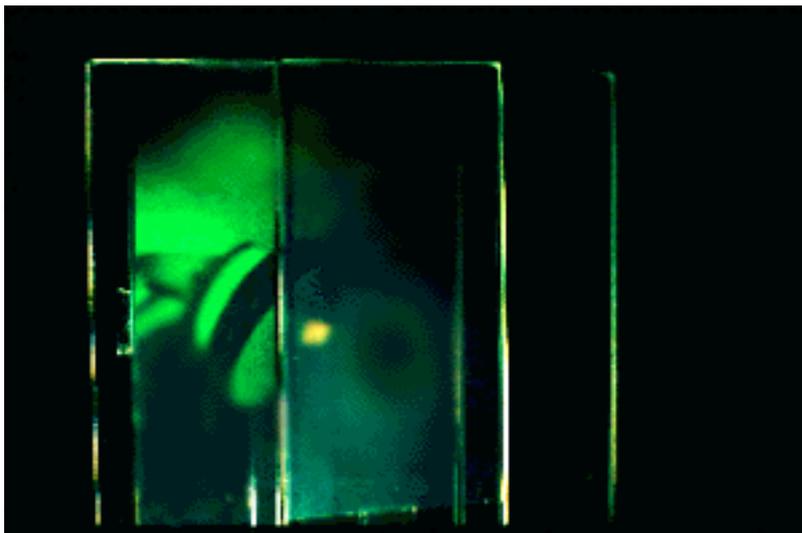


Fig. 12. *OCO 30 x 30 cm.* White light reflection hologram (1985). Original (shown) lost. Remade in 1989 by E. Kac as a computer holographic stereogram (WL transmission).

With regards to media syntax, Kac ascribes specific constraints to the production of holographic poetry: holographic poetry needs to be composed in accordance with the laws, rules and allowances of holographic structures. This claim is analogous to the arguments advanced by Simanowski about the “genuineness” of the digital medium. Otherwise put, though it is technically possible to record any poem on a hologram, a poem composed analogically and subsequently transcribed to holographic film does not constitute a valid example of holographic poetry (Cf. SIMANOWSKI, 2007). Nevertheless, as the discussion of *The Child* by Alex Gopher has revealed, such demarcations are never without a certain measure of indeterminacy.

Interfaces

In his 1998 book *Esthétique Relationnelle (Relational Aesthetics)*, Nicolas Bourriaud coins the term *relational art* to define a kind of art that utilizes the realm of human interactions and their social contexts as its theoretical bases. No longer separated from the autonomous and private space of the museum, relational art invades a fundamentally altered urban landscape, wherein “the pseudo-aristocratic conception of how artworks should be displayed [collapses before our very eyes]” (BOURRIAUD, 1998, p. 14). Bourriaud’s aesthetic experience is

explained in spatial terms: rather than a surface to be *walked through*, art becomes an experience to be *lived in*. Emblematic of the inevitability (and difficulty) of encounter is the modern city, wherein art subjugates itself to the rules of convivial mores. Bourriaud's theorizations refer mainly to installations. Irrespectively of whether electronic art tightens the space of relations – “[producing] specific sociability” (Ibid.) – or disrupts it, the notion of art being interwoven with lifeworlds in a specific interstitial space is one that suits digital literature, particularly the subset which includes immersive installations and VR environments.

In mutually constructive pieces such as the aforementioned *Holopoems* and *Genesis*, one could say that free arenas of exchange are generated. Digital art, in other words, fosters a distinct mode of dyadic interchange,² indeed one that liberates us “from the ‘communication zones’ that are imposed upon us” (BOURRIAUD, 1998, p. 16). Kac's inter-relational works, such as *Interfaces*, a live split-screen video exchange, which took place on the 10th of December 1990, quite efficiently exemplifies Bourriaud's hypotheses. *Interfaces* reenacts the exchange that took place between a group of artists in Chicago and another at the Center for Creative Inquiry at Carnegie Mellon University, Pittsburgh. Because participants in Chicago could not anticipate which images would be sent out by the Pittsburgh group and vice versa, *Interfaces* simulated a natural visual dialogue between participants – “bringing the improvised and spontaneous feed-back loop of a personal conversation to the realm of video” (KAC, 1990) (Fig. 13). The digital dissolution of identity attained through simple video overlapping techniques – parts of a face from Chicago, for instance, would be slowly scanned over another face previously sent by the Pittsburgh group – is less of a technologically fascinating feat today (within contexts of our current over-mediated and over-Skyped lifeworlds) than it was in 1990.

² I allude to Wolfgang Iser's use of the term, adopting the patterns advanced by Edward E. Jones and Harold B. Gerard in *Foundations of Social Psychology*. Additionally, Iser borrows from the psychoanalytical research on communication conducted by R. D. Laing, H. Phillipson, and A.R. Lee. Quoting directly from Laing's *Interpersonal Perception* Iser writes: “My field of experience is, however, filled not only by my direct view of myself (ego) and of the other (alter), but of what we shall call *metaperspectives*—my view of the other's ... view of me. I am not actually able to see myself as others see me, but I am constantly supposing them to see me in particular ways, and I am constantly acting in the light of the actual or supposed attitudes, opinions, needs and so on the other has in respect of me” (LAING, PHILLIPSON & LEE, 1966, p. 4).



Fig. 13. Eduardo Kac – *Interfaces* (1990).

As a fringe theoretical provocation, I will briefly suggest that it is possible to equate Kac's multidirectional communicative schematics to Wolfgang Iser's theory of aesthetic response (*Wirkungstheorie*) wherein contingency is an inevitable component of interaction (ISER, 1978). If the act of reading is to be understood in terms of unpredictability – “as both a constitutive and differentiating element in the process of interaction” (ISER, 1980, p. 163) – then Kac's *Interfaces* and more generally his telepresences³ very aptly exemplify contingent communication models as they are remediated to the digital medium.

Genesis

Let us now shift the discussion to Kac's renowned *Genesis* installation, commissioned by Ars Electronica 99 and first presented online at the O.K. Center for Contemporary Art, Linz, from September 4 to 19, 1999. According to his own description, *Genesis* (1998/99) is a transgenic artwork “that explores the intricate relationship between biology, belief systems, information technology, dialogical interaction, ethics, and the Internet” (KAC, 1999). The connection to Hayles' theorizations on the posthuman is exceedingly blatant: “The posthuman subject is

³ Kac's telepresences function according to premises of instability: “(...) it is necessary to acknowledge the immaterial in art. Immaterial art does not mean art without any physical substrates; rather it signifies the exploration of televirtual domains and the foregrounding of the participant's experience” (KAC, 2005, p. 156).

an amalgam, a collection of heterogeneous components, a material informational entity whose boundaries undergo continuous construction and reconstruction” (HAYLES, 1999, p. 3). In *Genesis*, Kac seeks the visualization of the absurd biblical protein through the conversion of the first sentence of the book of Genesis – “Let man have dominion over the fish and the sea, over the fowl of the air, and over every living thing that moves upon the earth” – into Morse code. The gallery display is as follows: a flexible microcamera, a UV light box and a microscope illuminator allow for the projection of the bacterial division. Facing the projection of the petri dish – with its fluorescent bluish hues remnant of stained glasses from a gothic cathedral – are two large-scale texts applied directly to the wall depicting, respectively, the versicle extracted from the book of Genesis and the *Genesis* gene.

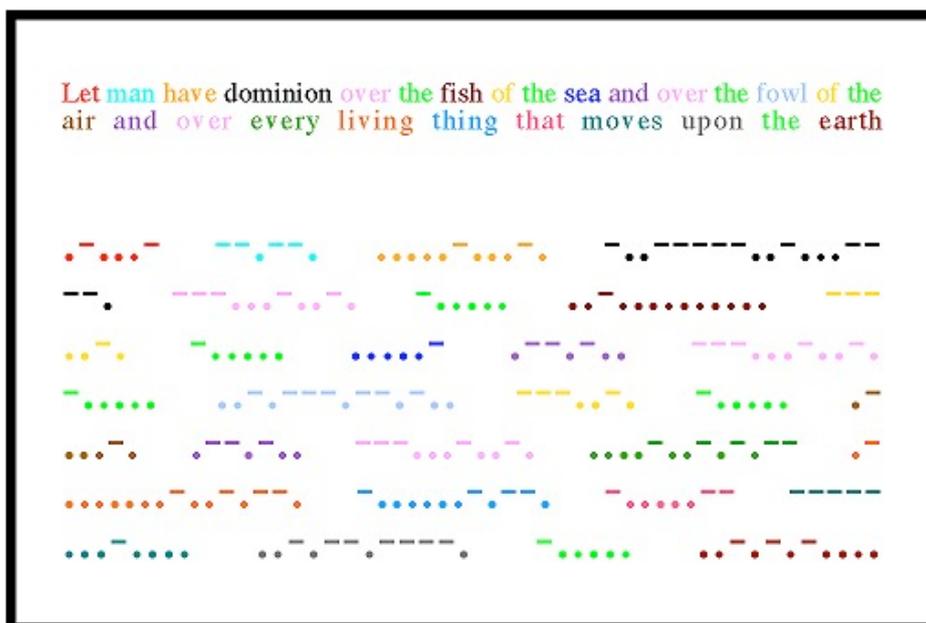


Fig. 14. Translation of the biblical sentence into Morse code. (Back wall).

Kac explains that the biblical sentence was chosen because of its “implications regarding the dubious notion of (divinely sanctioned) humanity's supremacy over nature” (<http://www.ekac.org/geninfo2.html>). Morse code carries a distinctive symbolic value: “[it] represents the dawn of the information age – the genesis of global communications” (Ibid.). Kac converts the Morse code into DNA base pairs according to a principle specially concocted for the work. In an explicative piece, Kac details the procedure as follows: the primary process consists of cloning a synthetic gene into plasmids and the subsequent transformation of said plasmids into bacteria (KAC, 1999, pp. 45-55). This process produces a new protein molecule – the key factor being that such a gene is completely artificial and does not exist in nature.⁴ While the bacteria (ECFP) contain the synthetic gene, the other type (EYFP) lack this gene. The point is that when exposed to UV radiation (302 nm), these fluorescent bacteria emit cyan and yellow light. It should also be noted that as the number of binary fissions increases, mutations naturally occur in the plasmids and new color combinations arise as a result of their interaction. The impact of the UV light disrupts the *Genesis* DNA sequence and, because the gallery display is set up in a way that local as well as remote (Web) participants are able to monitor the evolution of the work, Kac offers the interactor a simple yet moral choice: to click or not to click. My bet is that most people will click. According to Kac, “The ability to change the sentence is a symbolic gesture: it means that we do not accept its meaning in the form we inherited it, and that new meanings emerge as we seek to change it (...)” (KAC, 2005, p. 251). Kac's is certainly one of the many possible readings of the work. Another is Simanowski's, who affirms that though the project's message might be relatively simple – “by acquiring authority over all other living

⁴ The details on the specific kinds of bacteria present in the work are as follows: (a) bacteria that have incorporated a plasmid containing ECFP (Enhanced Cyan Fluorescent Protein) and (b) bacteria that have incorporated a plasmid containing EYFP (Enhanced Yellow Fluorescent Protein). Kac explains that ECFP and EYFP are mutants of the GFP protein (Green Fluorescent Protein – used in the Alba bunny) –, that the strain of bacteria employed in *Genesis* is JM101 and that normal mutation in this strain occurs 1 in 10⁶ base pairs. “Along the mutation process, the precise information originally encoded in the ECFP bacteria is altered. The mutation of the synthetic gene will occur as a result of three factors: 1) the natural bacterial multiplication process; 2) bacterial dialogical interaction; 3) human-activated UV radiation. The selected bacteria are safe to use in public and are displayed in the gallery with the UV source in a protective transparent enclosure” (KAC, 1999, pp. 310-313).

beings, humans destroy the scriptural formation that had originally organized them” (SIMANOWSKI, 2007, p. 59). One must consider that both structurally and semantically, society has fully embraced “cyborg logics” as a strategy of self-description. Kac is most certainly not alone when he affirms that the boundaries between carbon-based life and digital data have reached the frailty of cell membranes – one need only recall Hayles’ third characteristic of the posthuman view, namely that the body “[be] regarded as the original prosthesis we all learn to manipulate, so that extending the body with other prostheses becomes a continuation of a process that began before we were born” (HAYLES, 1999, p. 3). To address the strictly *literary* aspect of the piece, the changed sentence relayed to the audience displays a minimal yet intriguing change: “Let *aan* have dominion over the fish of the sea and over the fowl of the air and over every living thing that *ioves ua eon* the earth.” Is the typographical error to be dismissed as bacterial *non sequitur* or are we to consider the fact that the verses still retain poetic cadence? Does it matter who is speaking – be it human, bacteria or machine?

4.2.

Upheavals in Literary Theory

In their 2007 publication *The Aesthetics of Net Literature: Writing, Reading and Playing in Programmable Media*, theorists Peter Gendolla and Jürgen Schäfer stress such themes as “rupture” and “upheaval” as a discursive strategy to explain the drastic changes computer-based technology and networked communications have impinged upon traditional literary models – describable as processes of communication (production/reception). The very fact that the research center to which both authors belong is called *Medienumbrüche* (Media Upheavals) is quite telling. In order to earn the denomination of “upheaval” a cultural event (which is to say, a variation on the level of *Mentalités*) ought to prompt distinct epistemic disruptions. In the case of the “specific organ of perception” that is literature, a media upheaval entails drastic discontinuities in medial supports, directly affecting processes of production and reception. Insofar as digital literature presupposes remediations, which directly affect cognition – “[literature’s] signs are able to amalgamate the perceptions of our senses in a specific synesthetic way” (GENDOLLA & SCHÄFER, 2007, pp. 17-18) –, it is not sufficient to argue that crystallized categories such as that of the reader, author and text would have to be redefined within these new contexts. Because literature of the 21st century has expanded into “the third domain [of literary communication], namely that of designing and conceptualizing,” literary theory must assess the manner in which technologies of information problematize the *literary* component in computer-based literary discourse (GENDOLLA & SCHÄFER, 2007).

Wherein, despite all differences, lie the common features that allow us to talk of a sphere of objects we can continue to call literature even across historically replaced constellations of media? And what difference is produced by the various media of production, distribution, and reception of literature, or, to put it otherwise: wherein lies the distinguishing feature between the chain of letters fixated in print and the “flickering signifiers” (Katherine Hayles) of computer aided media? (GENDOLLA & SCHÄFER, 2007, p. 19)

In order to address such questions, Gendolla and Schäfer refer to Harmut Winkler's argument that language is a basic technology, and as such, linguistic praxis, or "fluid discourse," is always directly connected to its materiality. Winkler's definition of writing proves particularly helpful in the description of the relationship between "the symbolic" and the technical realms (GENDOLLA & SCHÄFER, 2007). Though the authors' interest in understanding the abstract way in which Winkler arrives at the concept of the sign is admittedly limited (as is ours), for the purposes of the present analysis of digital literature as a literary sub-genre, I reiterate (and extrapolate on) two of their deductions: (a) that semiosis, or the process of signification, is ineluctably technical in that it connects operation and procedure (*techné*)⁵; and (b) that literature is always medially inscribed (GENDOLLA & SCHÄFER, 2007).

For Gendolla and Schäfer it is critical to outline Winkler's theories alongside Espen Aarseth's cybertext theory⁶ in order to attain what they describe as a "model of levels of man-machine-dynamics in net literature" (GENDOLLA & SCHÄFER, 2007, p. 21). Though their full depiction of such a model as well as the specifics of their dialogue with Aarseth and Winkler need not concern us directly, there are a few points to be stressed. Firstly, though I choose not to adopt it, Gendolla and Schäfer's choice for the term *net* literature as opposed to *electronic*, *digital* or *ergodic* helps clarify what they mean by upheaval within the specific context of the literary system. Because both anthropogenic and artificial networks tend to be "self-generating, self-controlling and self-expanding forms of organization," the term *net* underscores the dynamics of networked communications (BÖHME apud GENDOLLA & SCHÄFER)⁷. Secondly, if by net literature they do *not* mean print literature that circulates on the Web – which

⁵ This statement requires that we equate procedure/*techné* with technology. Analogously, semiosis is not necessarily technical or mechanic.

⁶ Cf. My earlier discussion of Espen Aarseth's concept of ergodic literature as characterized by the reader's non-trivial effort to traverse the text.

⁷ The authors cite Hartmut Böhme's definition:

"Netze sind biologische oder anthropogen artifi zielle Organisationsformen zur Produktion, Distribution und Kommunikation von materiellen und symbolischen Objekten. . . . Netze bilden komplexe zeiträumliche dynamische Systeme. . . . Sie tun dies nach stabilen Prinzipien, doch in instabilen Gleichgewichten, selbstgenerativ, selbststeuernd, selbsterweiternd, also autopoietisch und evolutionär." (19)

Nets are biological or artificial anthropogenetic forms of organization to produce, distribute and communicate material and symbolic objects. . . . Nets create complex, dynamic systems of time-space. . . . They do this in a self-generating, self-controlling and self-expanding way according to stable principles, however, with instable balances, i.e. in an autopoietic and evolutionary manner.

would limit the scope of investigation to a mere analysis of modes of distribution – then *net* literature assumes conceptual modifications bearing direct consequences on definitions of literature itself. This is why it makes sense to speak of a collapse of the author/reader/text triad.⁸

Towards the end of their 2007 article, Gendolla and Schäfer are forced to admit that their focus on the technical and formal aspects of what they call conditions of altered textuality proves to be insufficient with regards to aesthetic concerns – “and might as well be applied to all networked communication” (GENDOLLA & SCHÄFER, 2007, p. 27). The authors argue that the “blind spot” in Espen Aarseth’s theory of ergodic literature lies precisely in its lack of a normative framework, whereby it would be possible to distinguish between literary and non-literary texts (Ibid.). If that is the case, then the question becomes whether within altered medial conditions one can still distinguish aesthetic “literary differences” in “net literature,” such as stylistic concerns of fictionality and meta-fictionality from those of traditional, non-fiction, print literature (Ibid.). From their examination, it becomes abundantly clear that Gendolla and Schäfer subscribe to at least one major premise developed by the Russian formalist school: “Literature, with its very special usage of words, indeed differs from everyday language” (2007, p. 27). Central to both the Russian formalists and the Prague Circle’s thoughts is the trope of “defamiliarization” (*ostranenie*) as the determinant constituent of literary composition.⁹

On the question of literature proper (digital or print literary processes) Gendolla and Schäfer’s claims are as follows: firstly, “[Literature] de-automates through distancing, exhibiting irony, and by using effects of alienation” (GENDOLLA & SCHÄFER, 2007, p. 27). It is certainly viable to theorize that literature negates itself by constantly creating aesthetic difference – which, in

⁸ If, however, *net* is to be understood as a system or literary field, then the exclusion of print literature remediated to the Web (digitized literature) would cease to be justified. This is not an issue addressed by the authors. Because of my emphasis on digitally-born works, I choose to comply with the arguments on “net” literature insofar as I understand that even stand-alone objects of digital literature are informed by principles of connectivity.

⁹ In his *Literary Theory: A Brief Insight*, Jonathan Culler states that “literature is language in which various elements and components of the text are brought into a complex relation” (CULLER, 1997, p. 38). What does this mean? Culler explains that should he, for example, receive a letter requesting his contribution to some worthy cause, he would be unlikely to scrutinize the stylistic elements of such a document; however, in literature “there are relations – of reinforcement or contrast and dissonance – between the structures of different linguistic levels” (Ibid.).

turn, is only perceptive because it is directed upon itself, “thereby simultaneously distancing itself from becoming utilitarian” (Ibid.). Being inherently recursive (JÄGER, 2010), literary language (and all language, for that matter) does not allow for simple distancing, rather it operates through the creation of differences, which is to say, it identifies itself by differentiation. Secondly, literature will reflect the media of its production and reception. Put otherwise, the medium is the message insofar as it frames literary discursive practices. Within the context of new media, the negation of the utilitarian usage of language can be described as both the birth of structural self-reflexivity and confirmation that forms and contents are never neutrally transmitted (Cf. JÄGER, 2010). Hence, the binary Saussurean model of sender-receiver (message) is one that requires revision. Gendolla and Schäfer are keen to point out that in digital literary communication, the recursive circulation of signs and symbols can always – perhaps is meant to? – produce unpredictable results. The trope of unpredictability is exactly what leads the authors to ask whether digital literature conserves the “aesthetic differences necessary to render it literary” (GENDOLLA & SCHÄFER, 2007).

If one follows their reasoning, one understands that current literary studies must consider the extent to which these new literary objects – the authors rightfully insist on their networked nature: “this literature: in the sense of networked experimental activities” (GENDOLLA & SCHÄFER, 2007, p. 28) – aesthetically reflect the communicative processes onto which they inscribe themselves. Let us assume that the answer is that they *do* indeed reflect these processes. Let us also agree that they produce unpredictable outputs. That the digital medium allows for the emergence of unpredictability, otherwise known as contingency, merely constitutes grounds to consider it a communicative process. To invoke David Wellbery’s eloquent articulation of the concept of literature as a sub-branch of media studies, I would argue that all transmission occurs in media and that no channel fails to produce noise (WELLBERY, 1990), and I further hypothesize that the unpredictability of output (Cf. *Genesis*) matters only insofar as a discussion on autonomy is concerned, bearing no explicit or definitive implication whatsoever on a normative debate on literary value. Schäfer and Gendolla’s point is that the technical medium allows for a greater measure of autonomy and autonomy means less authorial control (GENDOLLA & SCHÄFER, 2007).

Net literature inscribes its narratives onto this open flank of technically supported processes of socio-cultural differentiation. Media technology then, precisely does not widen, but withdraws individual control; it hinders the transfer of control from individuals or groups to systems functioning without friction as much as possible thereby enabling a transfer necessary for cultural evolution. (GENDOLLA & SCHÄFER, 2007, p. 28)

If we replace the notion of evolution for operation, then the question becomes: what if individuals do indeed forfeit control? What if, as the authors posit, aesthetic processes in networked media *do* encourage ethical debates concerning the neglect for individuality? What if literary *aisthesis*, or perception from the senses (a perception of perceptions), becomes conflictive with the autonomy ascribed to the technical medium? The ethical clash between individual control versus system control suggests a complex discussion which, albeit correlated, falls outside the scope of this investigation. The question I believe one should ask is thus: does the fact that literature has become “less human” necessarily make it less literary? Citing Michael Chaouli’s article on the possibilities of computers and nets, Gendolla and Schäfer speak of a moment where we may have to inquire about the great narrative, whereby they mean the complete, closed work which eludes intervention and disruption (GENDOLLA & SCHÄFER, 2007). This work, I would submit, if it ever existed, in all probability, no longer does. It no longer does because the conceptual frame, which constructed it as such in the first place, ceased to be possible. To refer to Luhmann, “there are no métarécits because there are no outside observers” (LUHMANN, 1998). Additionally, in light of the most basic premises of aesthetic response, I would suggest that the literary text has always been a result of “a dialectical relationship between text, reader and their interaction” (ISER, 1978, p. x). As such, no work of art or literature has ever been entirely autonomous.

In the introduction to *Beyond the Screen: Transformations of Literary Structures, Interfaces and Genres*, Gendolla and Schäfer write: “regarding our specific interest in electronic literature, digital literature, net literature, or whatever the subject might be called (...)” (GENDOLLA & SCHÄFER, 2010, p. 11). The decision to begin the book with a somewhat playful statement speaks to the evident conceptual indeterminacy of the field. The author/reader/text triad,

questioned in 2007, is kept, but pending revision (2010). One could very well argue that it is only natural that a field so dependent on technological innovation be malleable in this context. The authors return to the topic of the autonomous component of the technical medium, reiterating that traditional models of literary communication must be supplemented with the non-human aspects involved in the production of these cyborg-combinatorial literary crossbreeds (GENDOLLA & SCHÄFER, 2010). I submit that a theory of computer-based literature must, of necessity, not only assume revised grammars of interaction, intermedial premises and the pervasiveness of performance (SIMANOWSKI, 2007) – which arguably would fall at the production end – but also, in terms of reception, new media theorists must ask themselves the extent to which reading (is it really only reading?) specific computer-generated/interactive texts differs from the reception of a text produced by human beings.¹⁰

Due to its inherent reliance on algorithmic operations (code), digital literature naturally tends to be more autonomous than its print correlate. Surely, one could argue that the algorithmic mandate itself is nothing but the result of human computation, thereby slipping into the realms of processing – specifically “expressive processing” as defined by Noah Wardrip-Fruin in his 2010 homonymous book.¹¹ More to the issue at hand is the examination of the changes incurred in reception mechanisms as a result of generative interactions. What are the cognitive consequences of “reading” computer-generated texts? Is the process more prone to disruptions to the point where these become the norm? If their 2007 essay ended with uplifting remarks on digital technology and the prospect of humans and machines symbiotically cohabiting the planet, the question now returns as: what are the productive and receptive implications of texts or textual objects – installations, locative narratives based on GPS navigation through real space and their integration with fictional fragments – jointly conceived by man and machine? “In what way do all of these projects carry on the long history of literature that has already survived several media upheavals” (GENDOLLA & SCHÄFER, 2010, p. 11)?

¹⁰ Cf. N. Katherine Hayles’ discussion of the Turing test in the prologue to her seminal *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* (HAYLES, 1999) as well as Raine Koskimaa’s discussion of cyborg authors in “Approaches to Digital Literature: Temporal Dynamics and Cyborg Authors,” 2010.

¹¹ See FRUIN, N. W. *Expressive Processing*, 2010.

4.3.

Digital Aesthetics

There are several possible answers to the questions posed at the end of the last section. To be sure, a theory of computer-based literature requires terminological recapitulations as well as a revision of classical theoretical repertoires such as reader-response criticism and formalism. Whether a defense of ontological thought (*literariness*) proves to be accommodating of reader-response parameters remains doubtful. Remove these improbable theoretical iterations, however, and distinctions between the literary and non-literary cease to be feasible – be it in digital or print media theory (GENDOLLA & SCHÄFER, 2010).

In the 2010 essay “Reading (in) the Net,” Gendolla and Schäfer rephrase earlier questions adopting a patent formalist slant: can one discover a new quality of literariness in presumably literary communication rendered via digital media? “Is there a unique *aesthetic difference* regarding literature in computer-based and networked media?” (GENDOLLA & SCHÄFER, 2010(a), p. 82). Surely the answer cannot lie in purely ergodic restructurations, i.e., that the digital medium is conducive to dispersive or open models of literary discourse. That the dissolution of the classic narrative structure occurred before literature migrated to the screen is an indisputable truism: one need only glance at Borges, Calvino, Joyce and Woolf, and before them to Defoe and Proust, to be entirely reassured. If 20th century literature has taught us anything is it not that the limits of *mythos* in the Aristotelian sense can be lengthened, bent, circumvented to the point of exhaustion? The confines of classical narrative structures vis-à-vis ergodic models have been previously addressed in this thesis. Dynamic articulations resulting from the recursive interplay of authors, programs and interactors are abundantly noticeable in both digital and print examples (HAYLES, 2008). As for digital literature, with its manifest lack of an indisputably *literary* repertoire, the question remains as to the extent to which such drastic processes of remediation restore the normative claim to literariness.

Gendolla and Schäfer extend their discussion to two pieces by Noah Wardrip-Fruin, *News Reader* and *Regime Change*. Subscribing to the authors' assertion that the selections can be regarded as digitally instantiated critical revisions of Burroughs's cut-ups and Duchamp's ready-mades, I opt to reproduce them here (Figs. 15 and 16). If one considers digital literature to be a manifestation of the aesthetic postmodern, such discussions prove to be immensely productive. Though the authors refrain from using the term, I believe it befitting to our discussions, which overtly or not, problematize notions of continuity, discontinuity or at a bare minimum, dialogue between present and past.¹² Insofar as postmodernism¹³ is to be regarded as an *aesthetic* manifestation, or an essentially self-reflexive semantic designation (Cf. LUHMANN, 1998),¹⁴ – as opposed to the more problematic description of a “social and philosophical period or ‘condition’” (HUTCHEON, 1989, p. 23) –, then it applies to Gendolla and Schäfer's assessment of *News Reader* and *Regime Change*.¹⁵ That several elements of the 20th century avant-garde continue to impact computer-based literature is derivable from recent scholarly production (GENDOLLA & SCHÄFER, 2010; SIMANOWSKI, 2010). In order to round off these blatantly brief prefatory remarks, I should like to formulate a few guiding questions: is Fruin's work able to establish a parodical (in Hutcheon's terms) rapport with its predecessor (Burroughs)? Or are we simply dealing with a matter of remediation? Is it critical? Is it avant-garde?

¹² It goes without saying that I am not unaware of the loaded nature of the term *postmodern(ism)*, and, in a certain sense, were I to plunge into these waters I am afraid I would drown before I could surface my way back to digital literature.

¹³ I am well aware of Hutcheon's distinction between postmodernity and postmodernism. Hutcheon criticizes Frederic Jameson's reading on the basis that “The slippage from postmodernity to postmodernism is constant and deliberate in Jameson's work: for him postmodernism is the ‘cultural logic of late capitalism’” (HUTCHEON, 1988, p. 25). I have opted for the term *postmodernism* here, which in Hutcheon's view (and my own) is descriptive of a certain aesthetic trend rather than a period (although Hutcheon herself admits that what she wants to call postmodernism “is fundamentally contradictory, resolutely historical, and inescapably political,” and later “Postmodernism has a direct link with what most people seem to have decided to call modernism. Whatever the disagreements about what precisely characterizes modernism, we appear to have agreed upon recognizing its existence” (HUTCHEON, 1988, p. 37).

¹⁴ For Hutcheon, the quintessential postmodern form is parody for it both incorporates and challenges the thing parodied: “through a double process of installing and ironizing, parody signals how present representations come from past ones and what ideological consequences derive from both continuity and difference” (HUTCHEON, 1998, p. 93).

¹⁵ On his website, Noah Wardrip-Fruin explains that the two instruments operate using the statistics of n-grams, a technique used in textual games for over 50 years. The n-grams consist of word chains, which are shared chains between documents as “bridges, allowing movement from the text of one document into a body of text created from others” (<http://www.turbulence.org/Works/twotxt/nr-index.htm>).



Fig. 15. Noah Wardrip-Fruin's *Regime Change* (2003). *Regime Change* starts off with a news article from April 2003, following the US incursion on Iraq. NWF explains that playing *Regime Change* "generates texts from a document that records a different US attitude toward presidential assassination and eyewitness intelligence – i.e., the report of the Warren Commission" (<http://www.turbulence.org/Works/twotxt/rc-index.htm>).

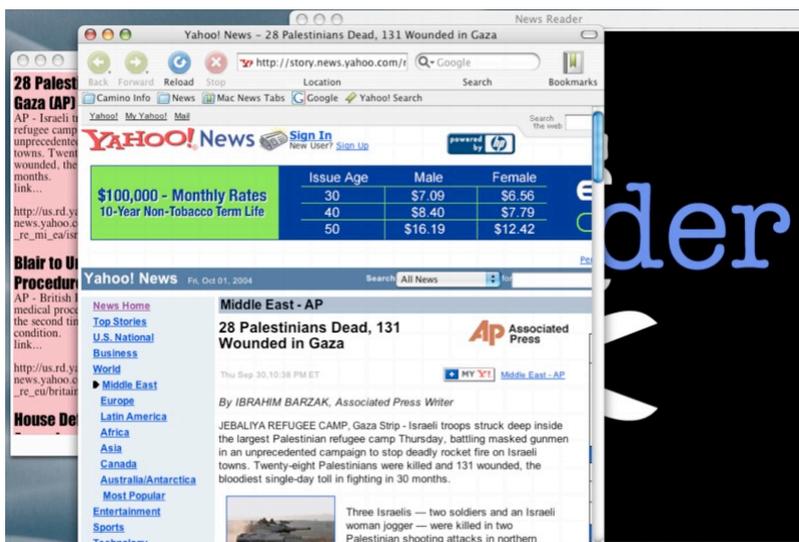


Fig. 16. Noah Wardrip-Fruin's *News Reader* (2004) is a software program "for reading and playing the network news environment" (<http://www.turbulence.org/Works/twotxt/nr-index.htm>). The algorithm operates on a feedback loop that culls "top stories" from Yahoo! News' RSS feed and manipulates user interaction in order to generate and re-introduce alternate press stories into starting texts.

After describing the algorithmic logic behind his text-machines, Noah Wardrip-Fruin opportunely draws a connection between his works and Burroughs's cut-ups:

By using this approach to make text playable, by taking the logic of word chains to defamiliarizing and sometimes humorous extremes, *Regime Change* and *News Reader* provide ways to perform William Burroughs's injunction to "cut word lines" – to break the chains of conceptual association that say this follows from that, the constant association of these words in the speech we hear and echo to others on a daily basis. (<http://www.noahwf.com/rcnr/index.html>)

Despite the author's explicans, it would be difficult not to consider generative texts such as *Regime Change* and *News Reader* as examples of what Dadaist poetry could have become had the technology been available at the time of production (Cf. GENDOLLA & SCHÄFER, 2010). Were that the case, than a rhetoric of simple remediation would supplant one of parody – for Hutcheon, the quintessential postmodern form as it both incorporates and challenges the thing parodied: "through a double process of installing and ironizing, parody signals how present representations come from past ones and what ideological consequences derive from both continuity and difference" (HUTCHEON, 1998, p. 93). Gendolla and Schäfer's observations on the (dis)continuities between Duchamp and Fruin might support the claim of postmodernism per Hutcheon's definition, but do very little to illuminate the component of experimentalism manifest in the works themselves, or for that matter, any indication of *aesthetic difference*.

In his 1984 essay "Mapping the Postmodern," literary and cultural theorist Andreas Huyssen dismisses the notion of the postmodern as the "latest fad, advertising pitch and hollow spectacle" (HUYSSSEN, 1984, p. 8). Detecting an evident change in sensibilities and discourse formations, the author distinguishes between what he terms a "postmodern set of assumptions and experiences" and the semantics of the preceding period. Displaying little of the critical function evinced in art *engagé* (vanguardism and aesthetic negativity), post-modern aesthetics is to be bracketed as a historically specific condition: "it becomes possible and indeed important to unlock the critical moment in postmodernism itself and to sharpen its cutting edge, however blunt it may seem at first sight" (HUYSSSEN, 1984, p. 9). Transitions from high modernism to post-modernism, however conceived, deviate from the discussion on digital literature proper – which as a separate and novel genre, partakes cooperatively and simultaneously in both traditions. Suffice it to mention that at a certain stage in the late 1970s, post-modernism leaves America and migrates to Europe – along with Kristeva and

Lyotard in France, and Habermas in Germany (Cf. HUYSSSEN). In the meantime, critics in the US begin to discuss the possible relations between post-modernism and French structuralism in its “peculiar American adaptation, relying on the assumption that the avant-garde in theory somehow had to be homologous to the avant-garde in literature and arts” (Ibid.). Despite the skepticism with which avant-garde is met in the 1970s, the “vitality of theory” remains unquestioned. By the 1980s the modernism/postmodernism dichotomy establishes itself as one of most prolific sources of debate in Western intellectual circles (Ibid.).

Digital literature’s propensity to promote “the bridging of art and life” (SIMANOWSKI, 2011, manuscript) could be read as a reiteration of Huyssen’s well-put adage: “pop was the context in which a notion of the postmodern first took shape” (HUYSSSEN, 1984, p. 16). That Simanowski should devote a particular section of his conclusion in *Digital Art and Meaning: Reading Kinetic Poetry, Text Machines, Mapping Art, and Interactive Installations* (2011) precisely to the category of the avant-garde is indicative of the inherent ambivalence of new media rhetoric towards the high and low culture divide. Beginning with a very basic assertion: “a question that is raised frequently concerning digital arts is: is it avant-garde?”, Simanowski bases his case on a brief reading of Clement Greenberg’s formalistic approach allied with Peter Bürger’s “political understanding of the avant-garde” (SIMANOWSKI, 2011, manuscript).¹⁶ At face value, a theory of autonomous art – *l’art pour l’art* – seems incompatible with art inherent to praxis – conceivably, computer-based art. Focusing on distinguishable avant-garde traits such as formalism and self-referentiality – i.e., that any technical effect for effect’s sake warrants formal investigation –, Simanowski cites the 1997 “politically charged art browser” *Web Stalker* by I/O/D (1997) as an example of net avant-garde (SIMANOWSKI, 2011).

Web Stalker is a highly stylistic work that can be regarded as a graphic depiction of the act of Web browsing itself. I shall not dwell on it extensively but I do wish to point out that the algorithmic logic behind *Web Stalker* is rather undemanding: the typing of a URL address prompts (a) a peek into the page’s

¹⁶ Incidentally, Greenberg’s observation on the birth of the avant-garde coinciding with the advent of the industrial revolution is very much analogous with Gendolla and Schäfer’s view of the emergence of *Medienumbrüche*.

mark-up source code (HTML) and (b) the conversion of hyperlinks into graphics. As users open *Web Stalker*, they see a blank screen. With the mouse it is possible to draw rectangles and assign one of the following six functions to them: Crawler, Map, Dismantle, Stash, HTML Stream, Extract. In the “Read Me” document attached to the piece, I/O/D – a London based collective – explains that the Crawler function is the part of *Web Stalker* that establishes the connection to the Web. While the Crawler window shows the current status of *Web Stalker*, the Map function depicts the links between HTML documents (Fig. 17).

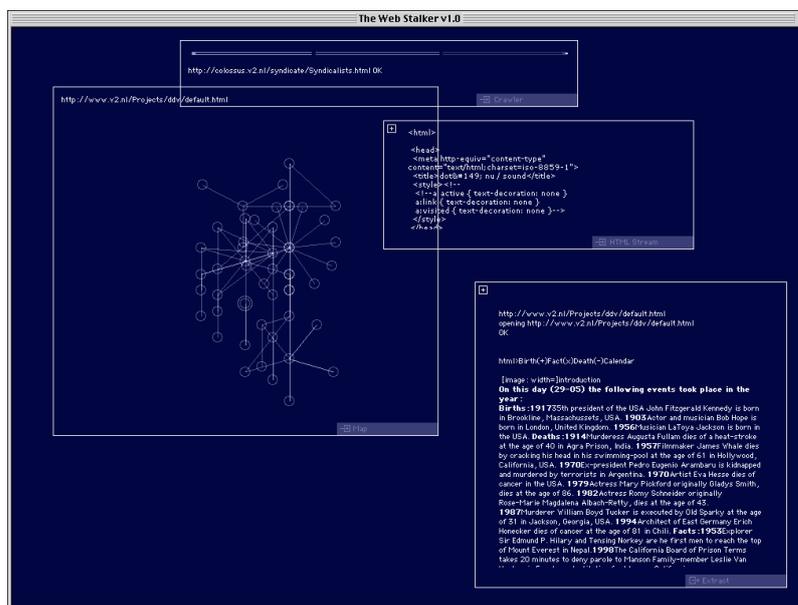


Fig. 17. Frame from *Web Stalker* by I/O/D (1997).

Any such celebration of processing can be regarded as inviting of formal investigation – particularly one wherein an analysis of the uniqueness of the medium denotes a connective to the category of avant-garde: “the less animation conveys content the more it draws attention to its form; the less it represents meaning the more it presents itself” (SIMANOWSKI, 2011, p. 3, manuscript). At this point, a brief word on the concept of avant-garde seems apropos: while Greenberg employs the term *kitsch* as an antonym to autonomous art (GREENBERG, 1939), Bürger accepts the autonomous claim of Aestheticist art as a precondition for the emergence of the avant-garde, but only as a precondition. Per Bürger, the second half of the 19th century witnesses an institutional détente: “The apartness from the praxis of life that had always constituted the institutional status of art in bourgeois society now becomes the content of works. Institutional

frame and content coincide” (BÜRGER, 1980, p. 27). Pertinent to our incipient discussion on net avant-garde is Bürger’s observation that because Aestheticist art draws attention to the medium of production it becomes self-critical – as evinced by Mallarmé’s failure at his principal literary project, “Valéry’s almost total lack of productivity over two decades, and Hofmannsthal’s Lord Chandos letters” (Ibid.). As institution and content converge, art’s “social ineffectuality” is laid bare and self-criticism becomes essentially indistinguishable from attack on institution (BÜRGER, 1980, p. 27).¹⁷

In his dissertation “How does the tradition of the avant-garde continue on the Internet in net.art?” (2001), Daniel Stringer deploys systems-theoretical tactics to compare Bürger’s and Greenberg’s conceptions of the avant-garde: “Greenberg’s descriptions of self-critical approaches to the medium could be understood in Bürger’s terms as ‘system immanent criticism’” (STRINGER, 2001, p. 10). Bürger sees little or no point in ascribing value to purely aesthetic experiences devoid of social import: in fact, critic Schulte-Sasse detects “an implicit assumption” in Bürger that art be coupled with social consequence, else it fails as a practice (SCHULTE-SASSE, 2009, p. xiv).¹⁸ Recall, Bürger understands socially disengaged aesthetic experience to be bereft of intrinsic value. The extent to which digital art and literature are capable of displaying the same revolutionary verve (as, say, Dada) is debatable. With Stringer, one might argue that the avant-garde is a historical phenomenon that failed to achieve its goals (STRINGER, 2001). Surely, if one constricts the definition of avant-garde to a historical period, only movements occurring in the early 20th century can cleanly fit into the category – later movements such as neo-Dada of Rauschenberg, Johns and the Fluxus group being forcibly relinquished to a class of their own (for Bürger, incidentally, the post-avant-garde). Very conclusively,

¹⁷ Bürger’s avant-garde is a historical category and as such it hails Dada for its ability to criticize art as an institution.

¹⁸ At this point I should admonish the reader that the sheer complexity of a polyvalent concept such as that of avant-garde (particularly in the age of digital reproduction) would warrant a thesis entirely devoted to its study. I thereby justify my micro-excursus with a contextual observation: a homogeneous art system, if it ever existed, no longer does. Both aesthetically and socially, we live “after the great divide”: there is no line separating high and low culture, at least not one that cannot be bent, circumvented or erased at will. As I play with Andreas Huyssen’s term, specifically his *After the Great Divide: Modernism, Mass Culture, Postmodernism*. I specifically wish to call attention to the following passage: “both politically and aesthetically, today it is important to retain that image of the now lost unity of the political and artistic avant-garde, which may help us forge a new unity of politics and culture adequate to our own times” (HUYSSSEN, 1986, pp. 6-7).

once the autonomous realm of art assimilates radical movements of change, these are stripped of confrontational or revolutionary thrust: in a post-avant-garde phase, “the institution accepts everything asserted as art” (STRINGER, 2001, p. 10).¹⁹

Simanowski seems to subscribe, at least partially, to Bürger’s premise which claims an incompatibility of avant-garde poetics with mainstream discourse: “since the undermining of what art means has become mainstream in the art business such undermining can hardly anymore be considered avant-garde” (2011, manuscript). Basing his argument on new media critic Tilman Baumgärtel’s collection of interviews with authors of net.art, the author draws attention to the digitally-instantiated dissolution of such quintessential aesthetic loci as the museum or the art gallery: “Baumgärtel’s notion provokes Bürger’s approach to avant-garde as a revolt against the art system and dominant aesthetics,” he notes (SIMANOWSKI, 2011, manuscript). Because the stuff of net.art and the stuff of praxis are one and the same, net avant-garde transpires in comparatively less delineated, far more hybrid cultural climates – wherein praxis-insertion and self-referentiality, far from being tropes of mutual exclusion, recast themselves as intertwined strategies of both political and aesthetic discourse.²⁰

Despite infusions of daily life – shreds of newspaper, oil-cloths and ready-mades helping forge its insurgent rhetoric –, separation and rarefaction turned out

¹⁹ In his dissertation, “How does the tradition of the avant-garde continue on the Internet in net.art?” (2001) – <http://sparror.cubecinema.com/dan/diss.html>, Daniel Stringer provides the reader with a history of the concept of net.art: “There is no official history of net.art but certain important examples recur in the debate on the subject. (...) The term *net.art* was allegedly taken from an anonymous email received by Slovenian artist Vuk Cosic in 1995. Due to some error the email had been infected rendering the message unreadable apart from that very word *net.art*. It is for this reason that the term is used to describe a variety of practices and activities stemming from groups of ‘leftist intellectuals, tech whizzes, subversives and artists’ of which Cosic was a part. These groups of people communicated through the Internet via bulletin boards, email lists and discussion forums, examples including Nettime.org, Thing.net and Rhizome.org. These service-providing sites were spawned on the Internet between the years 1995 and 1996, lubricating and encouraging community, discussion and promotion of net.art projects” (STRINGER, 2001, p. 2).

²⁰ On the one hand, works developed in and for 3D immersive spaces such as Brown University’s Cave – where one is required to enter an unmarked empty chamber, put on 3D glasses, and literally see things that do not exist in the real world – display a great deal of autonomous formalism, self-referentiality and even separation from praxis. Heterogeneity being its trademark, however, digital art displays no shortage of self-referential, politically-charged and praxis-emerged examples of net art such as Caleb Larsen’s *A Tool to Deceive and Slaughter* (2009). I shall return to the Cave in greater detail (Ch. 6). Suffice it for now to mention that the Cave is an eight-foot cube powered by a high-performance parallel computer. The floor and three walls are projected with high-resolution stereo graphics to create a virtual environment designed to be viewed through special “shutter-lens” glasses. A Macintosh sound server provides positional sound and enhances the Cave’s performance potential by surrounding the “reader/user” with dynamic three-dimensional sound in addition to visuals (Cf. Cave Writing Workshop website).

to be the fate of the historical avant-garde. Conversely, by its very mandates net.art obliterates whatever coterminous frontiers still separate high and low cultures (avant-garde and *kitsch*, if you will): “the medium of Net art is the same one used for working, shopping, information-gathering, corresponding. (...) Unlike visiting a museum or going to the theater, all that is required is a click” (SIMANOWSKI, 2010, manuscript). Precisely because of its media-specificity – as well as the open and unpredictable (why not democratic?) disposition of its medium of inscription and instantiation – net.art can never fully partake in avant-garde’s removal from praxis. Net.art, or digital literature – for the present purposes, the two should be considered interchangeable –, can be read as an argument (through negation) against the autonomy of art and hence for its reinsertion into praxis. One might argue that digital literature, insofar as it can indiscriminately permeate multiple layers of everyday-worlds, is, in Greenberg’s terms, *rear-garde*: “that thing that the Germans give the wonderful name of *kitsch*: popular commercial art and literature (...)” (GREENBERG, 1939, p. 5).

Extrapolating on Huyssen, I would submit that any debate on “net avant-garde” should revisit Bürger’s concern with “institution art” and the formal structure of the avant-garde work (HUYSSSEN, 1986, p. 8). In addition, such questions as raised by Huyssen in 1986 might enormously contribute to the debate on digital aesthetics as it currently recaptures avant-garde rhetoric – “How precisely did the dadaists, surrealists, futurists, constructivists, and productivists attempt to overcome the life/art dichotomy? How did they conceptualize and put into practice the radical transformation of the conditions of producing, distributing, and consuming art? What exactly was their place within the political spectrum of those decades and what concrete political possibilities were open to them in specific countries?”

In 2001 Baumgärtel convincingly speaks of net specificity as a narrowing requisite of net.art: “Net art addresses its own medium; it deals with the specific conditions the Internet offers. It explores the possibilities that arise from its taking place within this electronic network and is therefore ‘Net specific’” (BAUMGÄRTEL, 2001, p. 34). In 2011, a few adjustments would be required – as discussions on ubiquitous computing and calm technologies gain currency, the term *net specific* alludes to a considerably larger referent. In *A Tool to Deceive and Slaughter* Caleb Larsen purports to combine Robert Morris’s *Box with the*

Sound of Its Own Making with Baudrillard's writing on the art auction. The result is an eight-inch gloss black cube docked with a small micro-controller and Ethernet adapter. Essentially, the sculpture in permanent transactional flux does nothing extraordinary, being simply designed to re-auction itself off on eBay. Larsen's algorithm acts as follows: at ten minute intervals, the black box pings a server on the internet to check if it is available for sale on eBay. The program automatically creates a new auction of itself each time a particular auction session has ended (LARSEN, <http://www.caleblarsen.com/projects/a-tool-to-deceive-and-slaughter/>). Should a new buyer appear, the current owner is contractually bound to send the cube to the new owner, who, in turn, must plug it into the Internet so as not to disrupt the cycle. The political implications of the piece are almost too obvious to mention: Larsen's cube is a commentary not simply on the commoditization of art, but on the transience intrinsic to what we now call new media. You buy it, but you cannot keep it. You see it, but then it flickers before your eyes. There is nothing to retain and ownership must be forfeited. One pays for experiences rather than things and the cube is the material evidence of an immaterial society. It seems appropriate to transcribe a portion of a conversation between the artist, art writer Thyrza Goodeve and theorist Joseph Nechvatal which took place at Tazza Café in Providence, RI on April 20th, 2009:

TNG: So [the exhibition] is about selling nothing, with no objective but to do nothing.

CL: Right. The whole project started with the joke, "How can I make money with art." [laughs] Well, it's not really a joke, it's a real problem. But, more specifically I asked, "How can I make my art actually make money, as a money making apparatus not as a commodity." From there, as I kept working on it, it kept going until it got to the point where there really was nothing left. Just the transaction.

TNG: Just the transaction. It's like you are post... post-commodity critique. Because it's about having the commodity disappear. It's about the transaction. It's also about digital technology. I mean, could you have the same kind of piece without the Internet?

JN: Yes, because this actually reminds me, maybe too much, of Yves Klein's work where he sold nothing and he was paid in gold and the gold was then sprinkled into the River Seine. So that was a pure transaction without object. And he was selling the void at the same time. (LARSEN, 2009, p. 44)



Fig. 18. Caleb Larsen's *A Tool to Deceive and Slaughter* (2009).

The notion of “selling the void” is indicative of contemporary art’s penchant for subversion. Yet, as post-commoditized objectless transactions become the norm, the more discursive (descriptive) question remains – and this is precisely Stringer’s point – of why is it that art that resembles the historical avant-garde in intention and form should not be considered so (STRINGER, 2001)? In order to provide an adequate answer, it would be profitable to recall that the historical avant-garde’s ultimate failure to integrate life and art unveils what Huyssen has elsewhere identified as the “hidden dialectic of the avant-garde and mass culture” (HUYSSSEN, 1986, p. 9). That mass culture is unthinkable without 20th century technology is patently obvious. Pertinent to a discussion on a medium that subsists on “clicks” is the direct correlation between the demise of the avant-garde and the rise of mass culture (Cf. HUYSSSEN, 1986). To exist at all, mass culture requires technologies of mass reproduction and mass distribution, which ultimately serve to homogenize differences. Earlier, I called attention to the fact that Gendolla and Schäfer, amongst others, correlate aesthetic changes (media upheavals) to technological updates. In the opening lines of their latest publication, *Beyond the Screen: Transformations of Literary Structures, Interfaces and Genres* (2010), the authors postulate that traditional models of literary communication in computer-aided and networked media have come to

both adapt and reflect technological changes. While it is vastly recognized that technologies have generated substantial transformations in everyday life in the 20th century, relatively little has been written on the effects of a progressively technologized everyday-world on the institutions of art and literature (HUYSSSEN, 1986). Recent new media scholarship offers valuable contributions on this point, to be sure. Particularly fruitful in new media debates is, I would submit, Huyssen's proposal to take up the "historical avant-garde's insistence on the cultural transformation of everyday life" and recast it as a discursive ploy (HUYSSSEN, 1986, p. 7). Though Huyssen seems to share Bürger's skepticism vis-à-vis a revival of the avant-garde, he clearly does not partake in the latter's pessimism in the fate of the post-avant-garde. The former sees a key connection between the demise of the avant-garde and the rise of mass culture – this is the point that should interest us in our discussion of digital aesthetics. According to Huyssen, the use of Marxist categories such as criticism and self-criticism presupposes that the "negation or sublation (*Aufhebung*) of the bourgeois 'institution art' [be] bound to the transformation of bourgeois society itself" (HUYSSSEN, 1986, p. 8). Because this transformation does *not* take place, the avant-garde's attempt had to fail, and it is precisely this failure that justifies its labeling as historical (HUYSSSEN, 1986).

In hindsight, it is undeniable that technology played a key role in the avant-garde movements of the early 20th century, in many cases allowing for entirely novel techniques such as assemblage, collage montage and photomontage.²¹ Huyssen reminds us that the separation between cultural and industrial reality was the fuel that propelled bourgeois ideology – praxis proving impervious to bourgeois reliance in notions of high, autonomous culture, the historical avant-garde faced a predictable demise (HUYSSSEN, 1986, p. 11). Freed from its functional role, technology is rendered iconoclastic – i.e., in Marcel Duchamp's exhibition of a mass-produced urinal in the sanctified space of the museum. With

²¹ If we accept the premise that avant-garde was somewhat propelled by technology, then Dada's subversion becomes all the more remarkable when recast in the context of current discussions on digital aesthetics. Recall, Huyssen affirms that in Dada the experience of technology was rooted in the battlefields of World War I: "While technology revealed its destructive power in the big *Materialschlachten* of the war, the Dadaists projected technology's destructivism into art and turned it aggressively against the sanctified sphere of bourgeois high culture whose representatives had enthusiastically welcomed the war in 1914" (HUYSSSEN, 1986, p. 11).

regards to contemporary manifestations of the avant-garde, the point Huyssen makes with respect to Dada and technology applies to examples such as Caleb Larsen's *A Tool to Deceive and Slaughter*, wherein technology and its counterpart – market economy – are turned against themselves as the algorithm undermines eBay's auctions. Larsen's piece acts as a silent bomb thrown from within the system to question the very premises of technologized commerce – an effort comparable to Dada's use of technology to scourge and dismantle bourgeois ideology.

In a 1999 essay “Avant-Garde as Software,” new media icon Lev Manovich argues that “new” avant-garde is “no longer concerned with seeing or representing the world in new ways, but rather with accessing and using in new ways previously accumulated media” (MANOVICH, 1999, p. 7). It is precisely because it makes use of old media as its primary material that new media can be called post-media or meta-media. One could simply argue, alongside Simanowski, that avant-garde visions have been remediated to the computer screen, or that it remains unclear “[the] extent to which new media is avant-garde or just a transformation of avant-garde visions into computer software” (SIMANOWSKI, manuscript). If the mere use of new media technology constitutes an act of self-reflexivity, then clearly it serves as a poor criterion to discern the avant-garde from the non-avant-garde. In 1986, Huyssen speaks of the obsolescence of avant-garde shock techniques once they become co-opted by the cultural industry: “in an age saturated with information, including critical information, the *Verfremdungseffekt* has lost its demystifying power” (HUYSSSEN, 1986, p. 15). This affirmation remains as valid today as it was in 1986: if it is no longer shocking, is it still avant-garde (regardless of its being software)? Difficult as it may be to dispel the argument that if something were truly avant-garde, it would cease to be shocking (because shocking is now routine) (SIMANOWSKI, 2011), one must still acknowledge the theme of the digital avant-garde as it has clearly gained scholarly currency.

I draw on Simanowski's example of the exacerbation of *techné* as code in *Mondrian* (2004) by Zachary Booth Simpson (Fig. 19) in order to address the premise that net avant-garde ceases to be scandalous as it embraces the aesthetics of the technologically fascinating (SIMANOWSKI, 2010).



Fig. 19. Snapshot from Zachary Booth Simpson's *Mondrian* (2004).

In *Mondrian* Simpson utilizes infrared sensor technology on a rear-projected screen to create an interactive work of art that allows any user – irrespectively of artistic ability – to create a composition in the style of abstract artist Piet Mondrian. By dragging a hand across the screen, one can create the vertical and horizontal lines; by holding one's hand in place, one can color the particular area. The extent to which the installation is thought-provoking will depend on the characteristics one chooses to emphasize. The less subliminal hermeneutic consequence is surely one of disappointment: users ultimately rendered compliant to pop directives of banalization. At first glance, Simanowski seems to take offense at the trivialization of Mondrian's abstractionism – “while we don't know how long it took Mondrian to create his paintings or ‘compositions’ as he called them, we know it took him a while to overcome his naturalistic and impressionistic style and find his own voice” (SIMANOWSKI, 2010, p. 144). Nevertheless, from a processing standpoint, the author acknowledges that Simpson's sophistication could be seen as counterstrike of parallel complexity: his creation of a machine that emulates simplicity renders the installation “a better candidate for homage” (Ibid.).

Simpson's *Mondrian* is an ill-suited example of digital literature for it does not contain the fundamental (albeit provisional) element which renders literature

what it is, namely text – but it does serve to underscore the virtuosity of code. To return to the dialogue with the concept of avant-garde, *Mondrian* is shocking because it is shockingly trivial: “Create your own composition in 10 seconds!”. A closer look at the installation would suggest that it is a commentary on digital art itself, its appeal to the senses aided by an intrinsic adversity to narrative models – Simanowski finds theoretical footing in art critic Rosalind Krauss’s notion of the grid as the force opposing narrative model (SIMANOWSKI, 2010, p. 145). I would submit that neither virtuosity of code nor indeed the piece’s ability to comment on a predecessor would truly secure its status as avant-garde. Simanowski’s evasive, albeit elegant, answer might be repeated here: “We may use the *Mondrian* example to end this book with the indication of a bigger picture” (SIMANOWSKI, 2011). A bigger picture, wherein “to go digital” means to redraw the world “within a grid of discrete values” (KOEPNIK, p. 48 apud SIMANOWSKI, 2010, p. 146). I could never pretend to reduce such complexities here. Simpson’s work might exemplify art’s liberation from craftsmanship, but recall, it was the cultural industry and not the avant-garde which truly transformed daily life in the 20th century. And the Internet is mass culture today. This is what is meant by living after the great divide; one must look for different questions, art must search for different functions and academic discussions must accompany these trends. I agree with Huysen when he claims that “the best hopes for the historical avant-garde may not be embodied in artworks at all, but in decentered movements which work toward a transformation of everyday life” (HUYSEN, 1986, p. 15). I believe digital literature, and more amply, the tendency it has displayed towards experiences of presence, bodily engagement and embodiment proper could be regarded as the sort of decentered mobilization of which Huysen speaks.

4.4.

Defining Digital Literature

The Literary

That the poetics of digital literature is informed by visual aesthetics is simply a reflection of a certain cultural climate wherein information is rendered visually with greater frequency than it is transmitted textually. The ergodic mandate of digital media requires cognitive alterations in reception. Put otherwise, it requires a fluency in the sort of digital literacy which takes into account a tacit knowledge of the pictorial/performative turn. Of the 60 works contained in the ELC (Electronic Literature Catalogue) compiled by the Electronic Literature Organization (ELO) (Fig. 20 and 21), perhaps one-third have no recognizable text and virtually all rely heavily on visual and aural elements (HAYLES, 2008). Nonetheless, Hayles and the ELO consciously make the decision to call these works “literature” in order to elicit questions about the nature of the literary phenomenon in the digital age. Must a work contain lexical marks in order to be deemed literary? The answer requires the not-atypical solution of a “broader notion of the literary” (HAYLES, 2008, p. 4).



Fig. 20. Electronic Literature Collection Vol. 1 (<http://collection.eliterature.org/1/>).



Fig. 21. Electronic Literature Collection Vol. 2 (<http://collection.eliterature.org/2/>).

Headed by theorist and artist Noah Wardrip-Fruin, the ELO committee, whose mission is “to promote the writing, publishing, and reading of literature in electronic media,” decided to consider as digital literature both works performed in digital media and works created in the computer and later transferred to print (HAYLES, 2008, p. 3). The fact that Hayles’s chapter, “Digital Literature: What is it?” was later included as an appendage to the Electronic Literature Organization’s website (www.eliterature.org) – whose formulation reads “work with an important literary aspect that takes advantage of the capabilities and contexts provided by the stand-alone or networked computer” (Ibid.) – attests to a measure of arbitrariness embedded in the definition of *literary* – a designation that opens onto the formalist claim that literary language distinguishes itself from ordinary speech in that it possesses the ineffable quality of *literariness*.

In 2007, Gendolla and Schäfer inquire about the underlying distinction between “chains of letters of a text fixated in print and the ‘flickering signifiers’ (Hayles) of computer aided media” (GENDOLLA & SCHÄFER, 2007, p. 19). In the same volume – encouraged by the analysis of Camille Utterback’s *Text Rain* or Alex Gopher’s *The Child* – Roberto Simanowski writes:

How can we measure the primacy of the word? By the space it takes on the monitor or in the memory? After the attention it captivates or the amount of information in comparison to visual elements? (SIMANOWSKI, 2007, p. 47)

“Hybrid [literary] arrangements,” as Jürgen Schäfer calls them (SCHÄFER, 2010, p. 25), recast digital literature as a practical and theoretical phenomenon of change. Hayles points out that not only does the ELO’s description of digital literature raise questions pertaining to both production and reception, but its appropriate “slightly tautological” assumes a prior knowledge of what is meant by “important literary aspect” (HAYLES, 2008, p. 4). Instead of tautology I would argue that it would be best to speak of recursivity. As a conceptual tool, recursivity repositions literature as a device of broader communicative processes, effectively accounting for the overarching fact that readers will come to electronic literature with pre-conceived notions welded by centuries of print tradition: “of necessity, electronic literature must build on these expectations even as it modifies and transforms them” (HAYLES, 2008, p. 4). However, to the reader versed in literary theory the flagrant fact is that the “important literary aspect” can only be construed in formalist terms – i.e., that there is something inherently literary in the texts, which will then render them recognizable as such. In this sense, the tautology/recursivity in the ELO’s definition could be counter-argued with elements derived from reader-response criticism, specifically Stanley Fish’s 1980 book, *Is There a Text in This Class? The Authority of Interpretive Communities* (FISH, 1980).

In his “Introduction, or How I Stopped Worrying and Learned to Love Interpretation,” Fish revises the impact of his earlier position (held in the 1970s) wherein he advocated the displacement of meaning from text (as a stable entity) to reader. The author’s initial question had been reasonably simple: “Is the reader or the text the source of meaning?” The very framing of this question relies on a fallacious assumption, namely that both instances – text and reader – were stable entities, “that they [would] hold still” (FISH, 1980, p. 1). Fish recognizes the influence of William Wimsatt and Monroe Beardsley’s essays on the affective and intentional fallacies – i.e., since authorial intentions are generally unavailable and interpretation is inherently variable, only the text was indisputably stable. Consequently, to focus on the causes of a poem or on its effects meant that one was essentially replacing objectivity with “impressionism and relativism” (FISH, 1980, p. 2).

How to refute such claims? Fish's initial strategy was to attack the "affective fallacy"²² by claiming that not only was the text not the repository of hidden stable meanings, but that something else was, "at the very least, contributory." This "something else" was, of course, the reader (FISH, 1980). Fish challenged textual autonomy by claiming that a text's spatial configuration is always temporally inscribed – the presumption that meanings are actualized by successive reader responses finally dismantling the affective fallacy. Simply put, the text as *a stable entity* disappears as it becomes the output of temporal actualizations. Fish claims to have "escaped formalism by displacing attention from text, in its special configurations, to the reader and his temporal experience" (FISH, 1980, p. 4). Meaning is an event, an emergence resulting from the relationship between readers, their expectations and projections, their interaction with a dynamic text:

In practice, this resulted in replacing one question – what does this mean? – by another – what does this do? –, with *do* equivocating between reference to the action of the text on the reader and the actions performed by the reader as he negotiates (and in some senses, actualizes) the text. (FISH, 1980, p. 3)

Not all problems were solved by this approach, for Fish soon realized that the shift from the spatial dimension of the text to the temporal nature of reading (the actualization of meanings) does not resolve the possibility and, in fact, the probability of the existence of as many meaning experiences as there are readers. The author attempts to circumvent the variability of interpretation by recurring to the Chomskyan notion of universal linguistic competence – "a linguistic system that every native speaker shares" (FISH, 1980, p. 5). At face value, that all readers will share "a basic data of the meaning experience" on a common primary (perceptual) level simply necessitates a distinction between primary experience, or the "actual reading experience" and "whatever one might feel or say in retrospect" (FISH, 1980, p. 5). If differences are only manifest at the secondary layer, then it becomes the task of literary criticism *proper* to "[suppress the subjective] and

²² A quote from the "The Affective Fallacy" appears in Fish's essay "Literature in the Reader: Affective Stylistics," a text which first appeared in *New Literary History* 2, no. 1 (Autumn 1970): 123-62. "The affective fallacy is the confusion between the poem and its results (what it is and what it does)... It begins by trying to derive the standards of criticism from the psychological effects of the poem and ends in impressionism and relativism. The outcome... is that the poem itself, as an object of specifically critical judgment, tends to disappear" (FISH IN TOMPKINS, 1980, p. 70).

idiosyncratic in favor of the level of response that everyone shares” (FISH, 1980, p. 5).

Though the dual-layer hypothesis did serve Fish well – critical variation could be accounted for as system-immanent distortion educed by second-order analyses –, the author still could not truly escape the assertion that his was a model resting on the problematic assumption of textual integrity: “thus I retained the distinction between description and interpretation and by so doing affirmed the integrity and objectivity of the text” (FISH, 1980, p. 8). The solution would only emerge from the revision of the key term *interpretation*. Initially, Fish assigned interpretation to the level of second-order textual experience (FISH, 1980, p. 9). Once the author restructures his argument in more constructivist directions, interpretation and experience merge into a single complex:

The equivocation finally rests on the key word “interpretation.” In the first statement of the position (in “Literature and the Reader”) interpretation is characterized as a second-level response that prevents us from recognizing the shape of our immediate experience; but in this essay interpretation is identified with the experience when I declare that the reader’s activities are interpretative. (p. 9)

The statement “the reader’s activities are interpretative” points to our prior discussion of *Erleben* and *Erfahrung*. Fish assumes that all perception is pre-framed by certain culturally specific delimitations: there is no pure perception or unmediated contact between reader and text. To put it in Luhmannian terms, we see what we are taught to see, for “every cognition is construction as cognition,” and “the external can only be attained from within” (LUHMANN, 1998, p. 34). Consequently, the formalist claim of the specificity of literary language (versus ordinary language) falls apart: if literature is a conventional category, then “what will, at any time, be recognized as literature is a function of a communal decision as to what will count as literature” (FISH, 1980, p. 10). Any text is potentially literary if an interpretative community of readers decides it is so.

The conclusion is that while literature is still a category, it is an open category, not definable by fictionality, or by a disregard of propositional truth, or by a predominance of tropes and figures, but simply by what we decide to put into it. (FISH, 1980, p. 11)

If we take the *literary* not as an ontological a priori but as a system-immanent process of inscription, then literature, as a phenomenon of notation,

will vary in accordance to culturally/historically specific conditions.²³ In the particular case of digital literature, the simple presence of the alphabetic sign does little to facilitate distinctions. Be it noted, nevertheless, that to say that what is deemed literary is the result of a collective decision is not to demerit the process of designation, for such decisions are always triggered by certain literary devices (*dispositifs*), which include distinctive features in the fabric of works themselves – tropes of figuration, fictionality, etc. – not to mention the inscription of these context-specific artifacts on larger discursive networks. Literary communication is, of necessity, recursive, but it is also flexible and open. Recall David Wellbery’s words on Kittlerian post-hermeneutic logics: “What we call literature stands in an essential (and again, historically variable) relation to a non-meaning, which it must exclude” (WELLBERY, 1990, p. xiv). This thinking of the outside, unreachable via hermeneutical thought, happens to be the locus of post-hermeneutic criticism, to which this thesis largely subscribes (Cf. WELLBERY).

When Stanley Fish speaks of “interpretative communities,” he draws an important distinction with regards to interpretative strategies:

Interpretative communities are made up of those who share interpretative strategies not for reading, but for writing texts, for constituting their properties. In other words, these strategies exist prior to the act of reading and therefore determine the shape of what is read rather than, as is usually assumed, the other way around. (FISH, 1980, p. 14)

Fish cleverly evades the theoretical paradox by positing that reading strategies do exist a priori and therefore shape the thing that is being read. In this regard, Hayles’ decision to call the 60 works contained in the ELC literature seems entirely appropriate. As pointed out, Hayles herself admits that her decision was meant to provoke debate: “my co-editors and I hope to stimulate

23 Recall Ricardo’s astute observation on the general aversion to ontological thinking amongst the contributors to his *Literary Art and Digital Performance* (2009): “Only *qualia*, distinct from characteristics that can be in works, are considered real or legitimate; of these the assumed ones are the poetic, the aesthetic, and the literary, and considerable effort is spent on clarifying them throughout. And where this is not evident with certain authors, analytic emphasis centers on the ‘apparatus effect’ of those processes implemented electronically, processed physiologically, or experienced phenomenologically. Despite the choice of analytic emphasis, no author here denies that the presence of something literary, for example, pervades the works examined here. Why *qualia*, as non-instantiated properties, would be acceptable, even implicitly, while any notion of an ontology of new media art or literature is not, marks a paradoxical turn folding into a larger ontological uncertainty, because the existence of such *qualia* is premised on conditions in an object that are necessary and sufficient for it to be poetic, aesthetic, or literary in the first place” (RICARDO, 2009, p. 5).

questions about the nature of literature” (HAYLES, 2008, p. 4). But if one accepts literature as a historically-specific occurrence, as we do here, then the question immediately following Hayles’ argument is: what would this “broader notion” of the literary necessarily include now, in this particular moment when media upheavals are taking place? Her answer: “(...) one that encompasses the kind of creative work on display at the ELC” (HAYLES, 2008, p. 4). But lest one consider this definition to be endowed with the same degree of tautology Hayles ascribes to the ELO’s self-description, she adds that the “the literary” is defined as: “creative artworks that interrogate the histories, contexts and productions of literature, including as well the verbal art of the literary proper” (HAYLES, 2008, pp. 4-5). That the actual determination of the “literary” would fall outside the scope of her study on electronic *literature* should be underscored. With Ricardo, one might understand the “literary” as *qualia*, but the underlying question would remain: how to reconcile ontological thought with cybernetic logic? Perhaps more solutions can be found in our upcoming readings of immersive installations. Let us now speak of literariness.

Of Literariness

In the essay “Reading Digital Literature: A Subject Between Media and Methods,” Roberto Simanowski claims that however one defines literariness “it undermines the identity of digital literature as literature” (SIMANOWSKI, 2010, p. 16). If digital literature is more than literature in that it presupposes aesthetic mediality, then its textuality must encompass non-textual elements. With Simanowski, one might argue that this textuality in an expanded field undermines the importance of text. Subscribing to John Zuern’s contention that computation in digital literature is essential not only to the definition of a specific kind of artifact but also to the particular literary properties of the text (ZUERN, 2010), Simanowski identifies what he terms the paradox of digitality – i.e., that the de-emphasis on the textual aspect of digital literature inevitably undercuts its *digital* mandate.

Simanowski’s paradox rests on the following notions partially derived from Zuern’s essay “Figures in the Interface: Comparative Methods in the Study

of Digital Literature” (ZUERN, 2010). Firstly, features of digital technology – intermediation, interaction, performance and perhaps even coding – are constitutive and inseparable from the textual aspects of the work of digital literature. Secondly, the trope of figuration as opposed to literal deployment of language is that which distinguishes a literary from a non-literary text. Thirdly, “literariness” exists only when there is a “constitutive intersection” between the “identifiable qualities of the medium with identifiable strategies of figuration” (ZUERN, 2010). This line of reasoning assumes the existence of a reader capable of identifying distinctive literary language in any given text – be it digital or otherwise. Zuern speaks of “literary singularity,” a quality he borrows from Dereck Attridge: “specific words in specific arrangements” (ATTRIDGE, 2004, p. 65). Zuern’s concern is certainly valid: the author fears that excessive preoccupation with media specificity might distract us from critical and pedagogical projects of a comparative nature. But what to do when it is precisely this media specificity that defines digital literature as such? Let us try to approach these issues from another angle.

Simanowski argues that, with respect to the “semiotic paradigm,” literature has always been the result of digital encoding. As such, if the production of linguistic signs in digital literature requires the use of binary code, then, according to the author, “literature becomes digital in a double way” (SIMANOWSKI, 2010, p. 17). The logical implication of this statement is that digital literature can only be defined as such because of the aesthetic use of non-linguistic tropes. Hence, the digitality of the linguistic sign alone – or what the author calls “the first layer of digitality” – i.e., that alphabetic letters are discrete, finite and endlessly combinable units – being insufficient to render a work of literature digital, “real” digital literature ought to proceed beyond the linguistic layer of digitality (Ibid.).

I suspect that to delve further into these issues of layered digitalities, which Simanowski will pertinently relate to the possibility of distinction between digital art and digital literature, will lead us to distinctions of the second-order. For the present purposes, it would be more productive to again take up the initial purpose of this sub-chapter, namely, the search for literariness in digital literature. Alluding to Janez Strehovec and Raine Koskimaa’s contributions to the volume *Reading Moving Letters: Digital Literature in Research and Teaching*

(SIMANOWSKI ET AL., 2010), Simanowski asks: “what are the equivalent strategies of figuration and estrangement when literature is digitally born?” (Ibid., p. 16). The question is based on Strehovec’s assertion that the concept of “defamiliarization” needs to be extended in order to encompass not only the linguistic but also the “cyber” realm – including visual and acoustic material as well as “genuine features” of digital literature, such as intermediality, interactivity and animation. Though Strehovec’s declared intention – namely, to search for “poetic specificity” – does not offer a solution to the tautology implied by the literariness argument, his choice to speak of Russian formalism within the context of novel textual practices of “liquid textscapes, blog-based remixability, the multi-sensory textscape experiences” should not be overlooked (STREHOVEC, 2010, p. 208). Strehovec opposes Roman Jakobson’s concept of defamiliarization (*ostranenie*) – defined as a series of deviations from “ordinary language” – to mimesis, or “literature as a reflection of social reality” (STREHOVEC, 2010, p. 211). But to define *mimesis* as mere “reflection” is to adhere to a dated and indeed truly problematic notion of the term, one which oversimplifies and overlooks studies on the concept of mimetic representation and contemporary literature.²⁴ Certainly, Strehovec’s decision to speak of defamiliarization (as opposed to mimesis) seems more amenable to debates on digital poetry, textual installations and even simple hypertext. For Strehovec, defamiliarization in terms of digital poetry means “the authors arrange the subject’s feelings, sensations, dreams, projections (...) in an unfamiliar way” (Ibid.). This brings us back to Simanowski’s suggestion that the *literary* would presuppose a certain reassembling of the material, or the use of linguistic tropes in an atypical way so as to preclude automatic perception in favor of aesthetic perception (SIMANOWSKI, 2010).²⁵

²⁴ Cf. Mimesis cannot after all be reduced to mere representation. It is a highly complex concept which cannot be dissociated from performance. Cf. Wolfgang Iser’s discussion of mimesis and performance in the epilogue of his *The Fictive and the Imaginary: Charting Literary Anthropology (Das Fiktive und das Imaginäre: Perspektiven literarischer Anthropologie)*, Johns Hopkins: 1993.

²⁵ Naturally, this will depend on what one considers aesthetic perception to be. Here I would propose that we subscribe to Martin Seel’s notion that aesthetic objects derive their distinctness only in relation to other (types) of objects, and consequently aesthetic perception, as “a widespread form of human behavior”, is exercised in both ordinary and extraordinary situations. The important fact is that the possibility of aesthetic perception is open to us at all times “as long as external and internal pressure does not deny us the latitude necessary for engaging in it” (SEEL, 2005, p. 20).

Not unaware of the assumptions embedded in his argument, Simanowski demands: “How can we identify the ‘unusual’ in a realm of expression not yet old enough (and growing too fast) to have established the ‘common’?” (SIMANOWSKI, 2010, p. 16). Referring to Koskimaa’s “Approaches to Digital Literature: Temporal Dynamics and Cyborg Authors,” the author wonders how it would be possible to look for experimental writing in a field lacking the basic differentiating qualities of conventionality. According to Koskimaa, “all digital works are in a very concrete sense experimental writings” (KOSKIMAA, 2010, p. 130). Dealing in augmented (digital) textuality, works of digital literature will necessarily experiment with the limits (and limitations) of new media. Nevertheless, their mode of experimentation is not one out to challenge conventions as much as it is an attempt to foster new conventions (KOSKIMAA, 2010). Whether it is the breaking *with* or the establishing *of* new conventions, there is at least one problem with the arguments mentioned above. They seem to somehow require that one equate experimentalism with literary language: Koskimaa goes so far as to classify works of digital literature as “technological avant-garde” (KOSKIMAA, 2010, p. 131). Yet if all digital literature were experimental, then all digital literature would produce estrangement and defamiliarization. That is, of course, an unsolvable tautology. Koskimaa offers a clever solution: let us acknowledge that literature is a historically-specific concept, or, to put in the author’s terms, a “historically changing concept” which will adapt to medium-specific or experimental changes as these appear. For Koskimaa then, with regards to digital literature, the central question becomes: is the code part of the work? – a question undertaken by those devoted to such topics as expressive processing, to be sure. For the time being, suffice it to say that though digital literature is interpenetrated by code, its aesthetic analysis does not necessarily entail or demand a specific knowledge of programming/processing. On the one hand, insofar as digital literature makes use of new media and pushes the boundaries of the norm, it may well be considered experimental. On the other hand, experimentalism, as Koskimaa understands the term – i.e., literary works which hold on to new digital technologies –, might not suffice to warrant the use of a radical category such as that of the technological avant-garde as we have hitherto understood the term.

With regards to the issue of literariness, I propose we briefly turn to print-based literary theory where I believe we might find some solutions to the questions posed by many of the new media theorists today. In his *Literary Theory: A Brief Insight*, Jonathan Culler has a chapter entitled “Literariness Outside Literature.” Analyzing classic “non-literary” language, such as historical discourse – *nouvelle histoire* excluded – and Sigmund Freud’s account of psychoanalytic cases, Culler concludes that, being evidently present in non-literary discourse, literariness in itself is an insufficient criterion to define literature (CULLER, 1997, p. 25). So how does one distinguish ordinary language from literary discourse? The answer must lie outside the text. Illuminating in this respect is Gendolla and Schäfer’s hypothesis of a radical change prompted by computer-based. The authors concede that resemblances between new media art and the modernist tradition are indicative of a profound radical change, one that requires cognitive modifications at least at the reception end:

From the point of view of the reader, spectator or listener, we could argue that these tools [“Story-Sprawl” in lieu of cut and paste] demand a much higher grade of activity than the coughing, snorting and hawking which John Cage activated in his famous composition 4’33.” (GENDOLLA & SCHÄFER, 2010, p. 82)

One is left to wonder what a “higher grade of activity” encompasses: is a more frenetic, essentially disruptive approach to a text indicative of the *aesthetic difference* that Gendolla and Schäfer deem literary? In spite of their attentiveness to terminology – the need to refer to *digital* literature as *net* literature –, the question common to almost all theorists of new media is not whether a “new” literature is arising (that, I believe, is a self-evident fact) but how to address it aesthetically and critically. From a theoretical standpoint, this would imply examining its newness. Whether much of said newness is a result not of the virtuosity of what is seen in terms of active communications but rather of what stays hidden, the code itself, is yet another question to be undertaken.

5 Concrete Digitalities

5.1.

Finding Concreteness in Digitality: Analog and Digital Concrete Poetry Meets *Text Rain*

When I think of my body and ask what it does to earn that name, two things stand out. It moves. It feels. In fact, it does both at the same time. It moves as it feels, and it feels itself moving. Can we think of a body without this: an intrinsic connection between movement and sensation whereby each immediately summons the other?

Brian Massumi, 2001.

To say that digital poetry recaptures some of the fundamental theoretical debates from concrete poetics is not to establish a teleological pattern of investigation. As transnational as I wish these interrogations to be, I draw on the advantages of the Brazilian context to briefly elaborate on this argument. Digital poetry per se is not the focus of this thesis and I believe the sub-genre would require one entirely devoted to its study. Nonetheless, in my attempt to offer a panorama of digital literature, I would certainly be remiss not to address kinetic poetry. The commonplace contention is that it would only be natural for digital poetry to be framed against critical and theoretical biases of Concrete rhetoric. As theorist Giselle Beiguelman writes in her “The Reader, The Player and the Executable Poetics: Towards a Literature Beyond the Book”:

Locating digital literature in general and more specifically cyberliterature, in relation to Concrete Poetry is particularly relevant in the Brazilian case because of the influence some of its main artists had – and still have – on first generation multimedia artists

(such as Leonora de Barros, Arnaldo Antunes, and Andre Vallias, among others), due to their pioneering in incorporating the beyond the page media such as videotext, video itself, and electronic billboards into their writing. (...) (BEIGUELMAN, 2010, p. 404)

A Concrete poem is, as Manuel Portella of *PO-EX: Poesia Experimental Portuguesa – Cadernos e Catálogos* puts it, a “self-referential poly-sign that, through fractal self-similarity between graphic and semantic form, seeks to enclose its field of reference in its own materiality” (PORTELLA, 2008, <http://poex.net/>). It stands to reason that digital poetry should also seek to enclose its field of reference into its significantly more complex material makeup. In the Brazilian scene, one could cite the kinetic poetry of the Campos brothers – two icons of Concretism who have adopted “click poetry” as an aesthetic medium. To say that one can detect tropes of Concrete rhetoric in electronic poetry is not to suggest a pattern of oversimplified remediation. To be sure, the Campos brothers’ re-compositions of the poems *Bomba* and *Parafísica* as well as Kac’s holopoems cannot be discussed in chronological terms alone (BEIGUELMAN, 2010) – i.e., Augusto de Campos’s statement that “a prática tem demonstrado que as antecipações da poesia concreta encontram no computador o veículo adequado para suas novas proposições verbais” implies a notion of historicity and diachrony I do not wish to pursue (CAMPOS apud. BEIGUELMAN, 2010, p. 407). As my previous discussion on Eduardo Kac’s holopoetry has shown, every instance of successful remediation promotes its own modality of syntactic/semantic disturbance. Instead of a causal model, I submit that the study of digital poetics adhere to the recursive logic of cooperative theorization (Cf. Chapter 1).

In her essay “From Concrete to Digital: The Reconceptualization of Poetic Space,” theorist Anna Katharina Schaffner proposes to investigate “how two of the main concerns of concrete poets – the poetics of space and the exploration of the concrete materiality of the medium – translate into the digital domain” (SCHAFFNER, 2010, p. 179). While an analog poetics of space necessitates the analysis of strictly Concrete discursive strategies, a digital spatial poetics ought to encompass the direct effects of programmable language on ontological parameters (“material performances of the text”) (HAYLES, 2006, p. 186). I would like to dwell

on the notion of space inasmuch as it permeates much of the theoretical discourse on digital literature. Bi-dimensional space is surface – I shall address three-dimensional complex surfaces in the manner of John Cayley, but suffice it for now to think of space as non-complex surface, as a page. In printed text, space is mostly fixed – cognitive implications stemming from reader-response criticism and reception theory, notwithstanding. Quite schematically, Concrete poetry’s emphasis on design and spatial grammar triggers two distinct (albeit inextricably conjoined) reception strategies, namely, those of “reading” and those of “viewing”. Incidentally, the trope of optical fluctuation in Concrete poetics is precisely what Brazilian Concrete poet Augusto de Campos and other co-members of the Noigandres group of São Paulo (Décio Pignatari and Haroldo de Campos) have attempted to subsume under the heading of the “verbocovisual” function¹ – semantic and visual (formal) constituents being synchronically deployed. It is significant to note that the term *verbocovisual* is itself borrowed from James Joyce’s “verbivocovisual presentment” (Book II, Episode 3 of *Finnegans Wake*). In his “Versatile Vanguard Vectors,” literary critic Charles A. Perrone stresses the function of the triple feature contained in the hyphenated version of term *verbo-voco-visual* – i.e., “the triple feature [clarifies] the idea of the simul-tan-eous presence of semantic, sonorous and optical elements. By the end of 1955, in any case, their published elucidations would utilize the amalgamated term” (PERRONE, 2007, p. 1). By turning poetic space into an integral semantic layer, Concrete poets effectively transform spatial syntax. The poets of the Noigrandes group elaborate on the notion of “poetic nucleus” in their *Plano-Piloto para Poesia Concreta (Pilot Plan for Concrete Poetry)* as follows:

O núcleo poético é posto em evidencia não mais pelo encadeamento sucessivo e linear de versos, mas por um sistema de relações e equilíbrios entre quaisquer partes do poema.

- *funções-relações gráfico-fonéticas ("fatores de proximidade e semelhança") e o uso substantivo do espaço como elemento de composição entretêm uma dialética simultânea de olho e fôlego, que, aliada à síntese ideogrâmica do significado, cria*

¹ Cf. FINIZOLA, F. Augusto de Campos: “The ‘verbivocovisual’ function of the concrete poem valorizes the word’s every sense of communication, its semantic load, its sound and visual shape. All these elements now influence simultaneously the reading, which receives not only a verbal but also non-verbal character, outlining a phenomenon of meta-communication” (*Poesia Concreta Contemporânea - Novas Interferências do Meio Digital*, 2009).

uma totalidade sensível "verbivocovisual", de modo a justapor palavras e experiência num estreito colamento fenomenológico, antes impossível.

(The poetic nucleus is no longer evidenced by the successive and linear chaining of verses, but by a system of relationships and equilibriums between all parts of the poem.

- graphic-phonetic functions-relations (“factors of proximity and likeness”) and the substantial use of space as an element of composition maintain a simultaneous dialectic of eye and voice, which, allied with the ideogrammic synthesis of meaning, creates a tangible “verbivocovisual” totality. In this way words and experience are juxtaposed in a tight phenomenological unit that before was impossible.) (CAMPOS et Al., 1956).

ra terra ter
rat erra ter
rate rra ter
rater ra ter
rater a ter
raterra terr
arattera ter
rarattera te
rrarattera t
errarattera
terrattera

Fig. 22. Décio Pinatari's *Terra* (1956).

A full critique of the Noigrandes poets' phenomenological agenda need not concern us here. Given that “concrete poetry begins by being aware of graphic space as structural agent,” (CAMPOS et. al, 1970, p. 71) one can extrapolate, with regards to a poetics of the screen, that the repercussions of “detached” signifiers in fluid surfaces will be numerous. Surface itself, within this realm, can only be rationalized metaphorically: there is no true stability to speak of; there are only gradual, ever-minute, instantiations of permanence. The “media-constituted diegetic world,” to borrow from John Cayley's terminology, is if nothing else a place of flux and constant change (CAYLEY, 2010). Digital poetry requires that the tension between

semantic value and what Schaffner has successfully termed “the graphic gestalt of letters” be placed in the fore alongside kinetic and interactive practices (SCHAFFNER, 2010). In the electronic poetry of Argentinean Ana Marie Uribe, for instance, it is the author’s contention that visual associations activated by discrete morphological manipulation serve as “constituents of meaning” (Ibid, p. 181),² a point easily evidenced by the image (animation) below (Fig. 23).

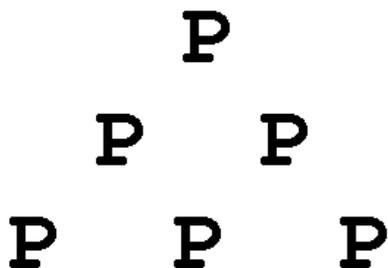


Fig. 23. Ana Maria Uribe’s *Gymnasia* (1998). In the animated version the P’s become R’s, thus mimicking an elongation drill in gymnastics.

As my earlier discussion of Cayley’s *Overboard* has indicated, digital encoding injects complexity into interface text – binary code instantiating multiple screenic planes. At the interface level, this logic translates in the interplay of text as both signifier and “post-alphabetic object”.³ If the requisites of Concrete poetics disrupted Western reading practices of linearity and hierarchy, in digital poetry the imbrications between what can provisionally be termed a signifier and fluid material arrangements become all the more malleable. At the outermost layer – interface text – words tend to tilt, dance, crack and generally thwart legibility. With Hayles, one might argue that digital-instantiated text presents a distinct type of materiality, one which invokes proprioception as well as kinesthetic engagement (HAYLES, 2006, p. 184). Strictly at the level of reception, it is safe to assume that processes of signification in programmable media arise from concurrent engagements of affects and percepts.

² The concept of meaning here is to be taken with the proverbial grain of salt – let us, along with Hans Gumbrecht, attempt to detract notions of universality and depth from it. But the point is that the semantic structuring of the digital poem includes non-verbal elements.

³ The latter is borrowed from Simanowski’s terminology.

Additionally, insofar as they are *processes*, not to mention outcomes of *processing*, digital poems require a de-emphasis on spatiality in favor of temporality. In other words, these objects often demand careful, albeit fleeting, forms of perusal (FUNKHOUSER, 2006). This is not to undermine spatiality or form, but simply to suggest that the digital poem ceases to exist as a self-contained unit to operate as a time-instantiated entity, “an event brought into existence when the program runs on the appropriate software loaded onto the right hardware” (HAYLES, 2006, p. 181). The processualization of poetry has at least one further significant implication. If theories of aesthetic response have taught us that text emerges out of a series of cognitively activated interactive procedures, the distinctions brought about by digital literature are of an entirely different nature: “Although print readers perform sophisticated cognitive operations when they read a book, the printed lines exist as such before the book is opened, read, or understood. A digital text does not have this kind of prior existence” (HAYLES, 2006, p. 181). Digital text owes its material (ontic) inscription to an intricate network of human and machinic entities.⁴

It might appear counterintuitive to reconcile presence theory’s emphasis on spatiality with Hayles’ temporalizing take on the nature of digital poetry: “thinking about the digital poem, paraphrasing William Carlos Williams, as a machine to organize time” (HAYLES, 2006, p. 181). As tutor texts, Hayles examines John Cayley’s *riverIsland* along with Stephanie Strickland’s Web poem *V: Vniverse* with its companion print book, *V: Wave.Son.nets/Losing L’Una* (STRICKLAND, 2002). Inasmuch as space is to be associated with the tangible realm of existence (GUMBRECHT, 2004), one must discern materiality as such (apparent *stasis*, as Cayley would have it) from material gradations – the intervening stages between encoding and interface. As a provisional hypothesis I would argue, extrapolating on Cayley’s deductions, that the screen as a surface of textual inscription is not a

⁴ The contention that digitality detracts from the poem’s self-containment is hardly disputable. I should note that in light of all the discussions stemming from reader-response criticism and reception theory, the notion of self-contained stable texts is, in itself, highly debatable. In his 1980 book *The Act of Reading*, Wolfgang Iser underscores the importance of the asymmetry between text and reader as he speaks of interaction: “To sum up the asymmetry between text and reader stimulates a constructive activity on the part of the reader; this is given a specific structure by the blanks and the negations arising of the text, and this structure controls the process of interaction” (ISER, 1980, p. 170). See also his discussion of Roman Ingarden’s concept of *Unbestimmtheitsstellen* (translated “spots of indeterminacy”).

transparent medium of delivery, nor “should [it] be cast as a bearer of multiple (flat) successive ‘states of text.’” Precisely because it is *space* that can act as a *temporal* repository, both monitoring and retaining traces of all recursive stages of programmable text, it should be treated as a complex surface (CAYLEY, 2005).

In my prefatory remarks on the distinction between digital literature from the broader umbrella of digital art, I commented on Hayles’ suggestion that the “verbal mark” can operate as a provisional criterion – provisional being, of course, the operative term in this assertion since the complexity of individual works (their very readability as textual objects) will often vary, thereby rendering such clear cut demarcations almost impossible. Here I suggest to expand on notions of “genuine” digital literature and argue that textual installations such as *Text Rain* (1999) by Camille Utterback and Romy Achituv or *text.curtain* (2005) by Daniel Howe, wherein legibility is algorithmically predicated, are nonetheless literary works insofar as the presence of the linguistic sign will draw a distinctive kind of attention (one may call it an impulse to “read”) on the part of the spectator. Simply put, if there is an “A” falling on my shoulder instead of the image of a raindrop, it will make a difference. I will want to find out what sentences are formed by these strings of signs even if I am denied totality and ultimately walk out of the installation without a clear notion of what the full text was about. I shall resume the discussion on inter- and intrapersonal boundaries in my descriptive and systems-theoretical analysis of *Text Rain*. The contemporary tendency towards dematerialization – clearly evinced in the elusive poetics of *Text Rain* – does, however, echo Gumbrecht’s caveat against the universality of metaphysics: “Rather than having to think, always and endlessly, what else could there be, we sometimes seem to connect with a layer in our existence that simply wants the things of the world close to our skin” (GUMBRECHT, 2004, p. 106).

The fact that Hayles addresses an epistemic shift in information theory remnant of the years following World War II (from the present/absent binary distinction to a pattern/randomness paradigm) is precursory of the debates one can hope to attain at the intersection of digital aesthetics and post-hermeneutical theory. In contemporary society, information is defined as a “pattern of randomness.” With Hayles, one might

argue that the confluence of “signal and materiality” endows bodies and texts with “a parallel doubleness” (<http://www.english.ucla.edu/faculty/hayles/Flick.html>).

Just as the human body is understood in molecular biology as simultaneously a physical structure and an expression of genetic information, so the literary corpus is at once a physical object and a space of representation, a body and a message. Because they have bodies, books and people have something to lose if they are regarded solely as informational patterns, namely the resistant materiality that has traditionally marked the experience of reading no less than it has marked the experience of living as embodied creatures. (Ibid.)

Granted, while carbon-based bodies are relatively stable organic substrata genetically adhering to their material configurations, the same cannot be said of digital artifacts.⁵ Changes in the body (“the material substrate”) and “changes in the message” (“the codes of representation”) led Hayles to adopt the term “flickering signifiers,” which she describes as “characterized by their tendency toward unexpected metamorphoses, attenuations and dispersions” (Ibid.). Lacanian incursions through “floating signifiers” aside, I shall retain the notion of “flickering signifiers” in my discussion of the visual-textual installation *Text Rain*. Lastly, my meditation on *Text Rain* will also take into account Hayles’ notion of “eventilization,” or the fact that in digital media “the poem has distributed existence spread among data files and commands, software that executes the commands, and hardware on which the software runs” (HAYLES, 2006, p. 182). That said, some texts are more visibly stable than others and I think that is Hayles’ point. Put differently, digital literature contains a strong element of performativity, which explains why it is safer to call a digital text a *process* instead of an *object* (HAYLES, 2006). While a portion of the performative potential inherent to digital texts can be traced to the prior execution of code (processing) – hence John Cayley’s, Talan Memmot’s and others’ battle for the inclusion of code in the study of digital literature –, the other equally performative characteristic lies in ergodic (tangible) procedures unraveling at the level of interface. With these reflections in mind, I proceed to a close reading of *Text Rain*.

⁵ Hayles admits this is a point of usual dispute and writes that the material performance to which she refers – which is the one I understand to happen in digital literature – precedes “whatever cognitive processing the user performs to read and interpret the text” (HAYLES, 2006, p. 185).

5.2.

Exhibit A: *Text Rain*

One evening in 1911, four members of the Parisian avant-garde attended a bizarre theatrical presentation: Marcel Duchamp, Guillaume Apollinaire, Francis Picabia and Gabrielle Buffet-Picabia went to see *Impressions of Africa*, a performance based on a novel by Raymond Roussel. “It was tremendous,” Duchamp was later to say of that night. “On the stage there was a model and a snake—it was absolutely the madness of the unexpected. I don’t remember much of the text. One didn’t really listen.

Rosalind Krauss, 1971.⁶

In his *Digital Art and Meaning: Reading Kinetic Poetry, Text Machines, Mapping Art, and Interactive Installations*, Roberto Simanowski vehemently presents his case for interpretation as follows -

In postmodern times interpretation is no longer about control or truth. It is not about solving the puzzle of meaning a work of art represents. It is about suggestions, playing with ideas, reflecting and sharing the thoughts and feelings triggered in the interaction with the artwork. No single interpretation should be the end of this process. But there should also be no end to interpretation. (SIMANOWSKI, 2011, manuscript)

That meaning is plural seems to be a consensus amongst theorists. In his *On Grammatology*, Derrida speaks of the end of the age of the sign (which Gumbrecht reads as “the end of metaphysics”) (GUMBRECHT, 2004, pp. 51-52). According to Derrida, it is not a matter of endings but simply one of closure (*clôture*): it is entirely possible that “the age of the sign will perhaps never end. Its historical closure, however, is outlined” (DERRIDA, 1967, p. 14). Post post-structuralist semiology, however educed, can no more retain the binary Saussurean distinction between signifier and signified than communication/information theory can afford to be

⁶ KRAUSS, *Passages in Modern Sculpture* (Cambridge, MA: MIT Press, 1977), 69. (Pierre Cabanne, *Dialogues with Marcel Duchamp* (London: Thames and Hudson, 1971), 71. Apud RICARDO, 2010, p. 58.) Ricardo notes that that both the event and a photograph of it appear in RoseLee Goldberg, *Performance Art: From Futurism to the Present* (London: Thames and Hudson, 2006 [1979]), 76.

reduced to a sender/receiver (message) transmission model.⁷ To quote directly from Derrida's text:

La « science » sémiologique ou, plus étroitement, linguistique, ne peut donc retenir la différence entre signifiant et signifié — l'idée même de signe — sans la différence entre le sensible et l'intelligible, certes, mais sans retenir aussi du même coup, plus profondément et plus implicitement, la référence à un signifié pouvant « avoir lieu », dans son intelligibilité, avant sa « chute », avant toute expulsion dans l'extériorité de l'ici-bas sensible. (...) Bien entendu, il ne s'agit pas de « rejeter » ces notions : elles sont nécessaires et, aujourd'hui du moins, pour nous, plus rien n'est pensable sans elles. Il s'agit d'abord de mettre en évidence la solidarité systématique et historique de concepts et de gestes de pensée qu'on croit souvent pouvoir séparer innocemment. Le signe et la divinité ont le même lieu et le même temps de naissance. L'époque du signe est essentiellement théologique. Elle ne *finira* peut-être jamais. Sa *clôture* historique est pourtant dessinée. (DERRIDA, 1967, p. 25)

Whether the “age of the sign” will come to an end is not clear in Derrida's text. More importantly, the debate seems a matter of theoretical conjecture, which quite frankly ceases to make sense. Rather than partaking in fruitless futurology exercises – and ever subscribing to the systems theory adage that “future” is a matter of self-referential differentiation⁸ – I opt to expand the limitations of the semiotic paradigm and delve into the uncharted waters of the here and now. In this sense, Gumbrecht posits a pertinent question: “at least from my point of view, then the most urgent question is: Who will be patient enough – infinitely patient enough – to agree with Derrida?” (GUMBRECHT, 2004, p. 52). As mentioned, the point is to *supplement* (in the Derridean sense) interpretation with the neglected sphere of the body. I bring this up to introduce the textual installation *Text Rain* precisely because, in many ways, the piece reenacts the “drama” of the end of metaphysics.

In his notable analysis of Camille Utterback and Romy Achituv's 1999 textual installation *Text Rain*, theorist Francisco J. Ricardo writes that *Text Rain* functions and presents “several discursive spaces or moments of being, revealing themselves in

⁷ See LUHMANN, N. *How Can The Mind Participate in Communication?* 1994, p. 371. Also see LUHMANN, 1998 on second order observations as the operative basis for structural differentiation between systems. According to Luhmann “society can conduct observations only in the form of communications, not in the form of conscious internal operations and above all not in the form of perceptions” (LUHMANN, 1998, pp. 56-57).

⁸ Cf. LUHMANN, N. *Observations on Modernity (Beobachtungen der Moderne*. English translation: William Whobrey) Stanford U. Press, 1998. Specifically, chapter 3, “Describing the Future.”

gradual fashion” (RICARDO, 2010, p. 58). In his introductory remarks, Ricardo references an oft-quoted passage from Susan Sontag’s *Against Interpretation*: “The function of criticism should be to show how it is what it is, even *that it is what it is*, rather than to show what it means” (SONTAG, 1964, p. 14). The ontic axiom “how it is what it is” denotes an “implicit line” between interpretation and close reading (RICARDO, 2010, p. 55). This is a particularly pertinent distinction with regards to this thesis because I start out announcing a firm belief in close readings whilst rather subversively advocating Gumbrecht’s theories of presence – versus interpretation. The truth, or least my truth, lies in the middle. This is why (albeit for distinct reasons than his own) I agree Roberto Simanowski that given the chance to rewrite her article today, Sontag would probably not repeat her vehement attack on interpretation (SIMANOWSKI, 2011). It is my hypothesis that she would veer towards the line of reasoning that Gumbrecht defends.

Particularly suited to my take on *Text Rain*’s immersive wordplay logics is Ricardo’s distinction between interpretation and close reading. While interpretation lends itself to variation (a myriad of viewpoints will produce multiple interpretations), close readings in Ricardo’s sense entail more rigorous scrutiny and analysis. Nevertheless, and this is key point, the author realizes that any reading, however rigorous, remains “a” reading (one out of an infinite range of possibilities). Furthermore, to speak of such differentiations implies a discussion of the non-interpretive, sensory aspects of the work, hence the self-posed questions:

What then of the multimodality of imagery and text that new expressive forms and media have attained, all the re/ mediation to use another phrase, all the convergence? Why all of this if not to take the receiving audience to new landscapes of imagination, and therefore interpretation? Ought we reasonably disallow the greater contemporary need for new interpretive positions in light of media, products, and works that bring novel sensory impetus and user participation? (RICARDO, 2009, p. 56)

The short answer to these questions is no, one should not disavow interpretation but one should recognize that new media theory ought to develop an adequate repertoire with which to conjugate affect (one might safely call it presence) and hermeneutics. The *transmodality* of which Ricardo speaks is elucidative of the intricate and distinctly novel literary fabric of *Text Rain* – one which subsists on the

simultaneous deployment of imagery, performance and pure text. With Krauss, Ricardo regards Duchamp's reception of *Impressions of Africa*, characterized by the latter's inattentiveness to text, as indicative of "the sensory montage of multiple modalities, and [of] the dominance of action in the visual field," (RICARDO, 2010, p. 58). Admittedly, new media theory would largely benefit from thematizations derived from cognitive sciences and computational linguistics, i.e., studies on proprioception/semiosis/kinesthesia. Through a series of rhetorical questions, Ricardo comments on an epochal change reflective of the ubiquity of technology. A viable solution, he claims, would encompass a shift in critical attention from reception to production:

(...) the change to consider revolves around how the voice of artistic effort emerging from the author, painter, poet, filmmaker, orator, or sculptor is to accommodate within the presence of expressive mechanisms that produce projective imagery, sensory activation, and selective immersion of their own as instrument of creation that complement, or perhaps compete with, received notions of artistic expression. The production, therefore, of imagery as extension to or evolution after the staunchest formalism, to include arguments for pure literature, can not be distanced either from the literary—as abstraction, as ontological characteristic however defined—because that quality cannot be defined as either image-free or imagery-free. (RICARDO, 2009, p. 57)

In a doctoral thesis slanted towards – albeit not entirely predicated on – productions of presence, I am inclined to underscore sensory activations. Per my self-imposed descriptive hypothesis, a closer look at Camille Utterback and Romy Achituv's textual installation *Text Rain* (1999) requires that I first *describe* it.

Text Rain is an interactive textual installation consisting of a camera which captures participants' images and projects their mirrored images in black and white onto a large screen, combining them with a color animation of falling virtual letters. Unbeknownst to the participants (the poem is not made available at the installation site), the letters form excerpts from the poem *Talk, You* by Evan Zimroth from the book *Dead, Dinner, or Naked* (1993). The algorithmic logic is simple: letters will fall and momentarily stabilize – "land" – at objects darker than a pre-determined and yet spatially adjustable threshold. Should participants lift their arms or bring with them a prop such as an umbrella, they can manipulate the rate at which the letters fall,

prompting them to float and undulate. A verse can be formed if a participant lingers to collect enough letters. In a voice-over description contained in the video of the installation, Camille Utterback states that the poem is purposefully selected because of its theme, “bodies and language”: “The falling letters are not random but form lines of a poem about bodies and language. ‘Reading’ the phrases in the *Text Rain* installation becomes a physical as well as a cerebral endeavor” (UTTERBACK, <http://camilleutterback.com/projects/text-rain/>).



Fig. 24. Still Image from *Text Rain* by Romy Achituv and Camille Utterback (1999).

The poem is quoted below:

I like talking with you,
 simply that: conversing,
 a turning-with or -around,
 as in your turning around
 to face me suddenly . . .

At your turning, each part
 of my body turns to verb.
 We are the opposite of *tongue-tied*, if there
 were such an antonym;
 We are synonyms

for limbs' loosening of syntax,
and yet turn to nothing:
It's just talk.

To redeploy one of Hayles' favored terms from physiology, *Text Rain*'s proprioceptive appeal displaces and recontextualizes earlier Concrete distinctions between seeing and reading. In *Text Rain* the point seems to be less about the letter as lexical unit and more about what happens (or appears to happen) to the letter, or the "flickering signifier", as it responds to the interactor's bodily gestures. In his analysis of the installation, Ricardo has a brilliant take on the installation's visual strategy: not reliant on archival imagery *Text Rain* is "based on a kind of recombinant encoding that [he] has associated with the language of cyber literature" (RICARDO, 2009, p. 58). Put in different terms, *Text Rain* contains nothing in itself; it possesses no preexistent visual repertoire – apart from the letters. It *is*, in a sense, what *happens* to it.

On the issue of embodiment proper, one might argue that the verse: "at your turning, each part of my body turn to verb," is emblematic of the unstable materiality of programmable language. That text is algorithmically designed to fall on the participants' limbs – subsequently forming fragments of verses which will later amount to fractional legibility – is but one element of the piece. The fact that Zimroth's poem is not prominent or available *in situ* renders *Text Rain* particularly acquiescent to readings which fluctuate between meaning and presence effects. Clearly, the *you* and *I* are inherently immaterial: either disembodied (unavailable, no less) rhetorical tropes or black and white projections metonymically relating to available (albeit transient) material bodies circulating at the installation space. It will be up to the participant to decide whether these letters will simply captivate and fascinate in their own right or become part of what I consider – and here I agree with Roberto Simanowski's reading of *Text Rain* – a significantly richer experience. In his own reading of *Text Rain*, Roberto Simanowski writes that "after enjoying the interaction with the letters and other visitors one ought to contemplate for a moment what it means to engage with letters in such a 'post-alphabetic' way" (SIMANOWSKI, 2011, manuscript). Ricardo describes the installation as "both a

completely visual work and a completely sovereign text” (RICARDO, 2009, p. 58). This is a clever ploy for it accomplishes two objectives at once: not only does the author successfully elude the reductive interpretation/non-interpretation dichotomy, but by addressing issues of “framing” (rather than value), Ricardo sheds light on “the structural ontology” which he deems common to all new media art (Ibid.). These ontological clarifications are valuable if only because they render imperative a high level of fluency in several modes of perception and conceptualization. Here I intentionally do not confine the discussion to the semantic gamut developed by art history and honed by film theory devoted to the “reading” of images. Because *Text Rain* is a conciliatory space between textuality and imagination, as Ricardo puts it, my bet is that it certainly allows for the critical and theoretical affordances of a “sensory” reading. The challenge is to make sensation, more specifically, the critical apprehension of sensation, coalesce into a cohesive rendition of non-hermeneutical criticism. Ricardo argues that the “de-anchored text wants to refute the rational assumptions that frame reading” (RICARDO, 2009, p. 59). Though I understand the assertion, I maintain the hypothesis that text, be it post-alphabetic or not, is still referential code inasmuch as it triggers the lexical impulse to be *read*. In this sense I believe the most interesting question in *Text Rain*, or in *Overboard*, for that matter, is not one of legibility at all and much less whether the text means what it normally means when it appears upside down or blurred in the latter case (RICARDO, 2009). Meaning is both too reductive and too complex a concept to be applied in this instance. If I were to deploy it within the framework of hermeneutical tradition, then it would be reduced to sense beneath surface – i.e., on the basis of the meaning/meaningless binary distinction: “Meaninglessness can therefore never be achieved by the negation of meaningfulness” (LUHMANN, 1995, p. 62). On the other hand, if we understand meaning to be a momentary stabilization of multiple overlays, then the challenge of a theoretical description of *Text Rain* surely rests on the ability to look beyond the awe of lexical/deictic subversion.

To recast this discussion within the framework of systems theory: meaning is, Luhmann posits, “the continual actualization of potentialities” (LUHMANN, 1995, p. 65). The corollary is, of course, that because “meaning can be meaning only as a

difference of what is actual at any moment and a horizon of possibilities, every actualization always also leads to a virtualization of potentialities that could be connected up with it” (Ibid.). A possible solution to this theoretical conundrum could be to approach the object of investigation from a descriptive stance. I have implied that *Text Rain* is ideally oscillatory in that it addresses human incommunicability on par with the complex autopoietic models found in the systems theory of Niklas Luhmann. Luhmann opens his “How Can the Mind Participate in Communication?” with an explosive claim:

Within the communication system we call society, it is conventional to assume that humans can communicate. Even clever analysts have been fooled by this convention. It is relatively easy to see that this statement is false and that it only functions as a convention and only within communication. The convention is necessary because communication necessarily addresses its operations to those who are required to continue communication. Humans cannot communicate; not even their brains can communicate; not even their conscious minds can communicate. Only communication can communicate. (LUHMANN, 1994, p. 371)

Now what can we say about communication? According to Luhmann, communication, as the structural basis of society, means autopoietic reproduction, but not that of an external world.⁹ Systems theory informs us that all we do have is a system’s *internal* capacity to distinguish between self-reference and external reference. As Eva Knodt eloquently puts it in her preface to *Social Systems*: “systems theory solves the problem of understanding by turning it on its head and, in so doing, displaces the entire hermeneutic tradition together with its perpetual self-doubt” (KNOTD, 1995, p. xxv). By shifting the focus from questions of *how* understanding can occur despite the fact “that the mind cannot consciously communicate” (LUHMANN, 1994, p. 372), systems theory recasts communication in a probabilistic framework wherein autopoietic closure generates openness. No longer grounded on a

⁹ In fact, Luhmann simply and elegantly addresses the problem of reference when he determines that observations and operations can only be accounted for from *within* the system. There are no *métrecits*, in Luhmann’s opinion, because there are no outside observers. In their introduction to the Aldine Transaction Edition of N. Luhmann’s *Risk: A Sociological Theory (Soziologie des Risikos)*, 1993, Nico Stehr and Gotthard Bechmann explain “(...) communication is an operation in precisely the sense that a distinction is made. Communicative acts say nothing about the world, and communication reflects nothing about the world, which is not reflected by communication but rather classified by it. The purpose of communication is to create differences that can then be attached to further communication, forming and stabilizing system boundaries” (1995, p. xvii).

binary model of transmission (sender/receiver), communication is restructured in a tripartite selection process which distinguishes *information* (a selection from a known or unknown repertoire of possibilities) from *utterance* – thence defined as “a selection proposal,” i.e., an actualized suggestion derived from an array of intentional acts: “what is uttered is not only selected, but also already a selection – that is why it is uttered” (LUHMANN, 1994, p. 140). *Understanding* ultimately emerges as the operative and highly contingent distinction between “information and its utterance” (Cf. KNODT, 1995, p. xxvii). Because not all systems process complexity in the same manner, the double negative “we are the opposite of tongue-tied” reinforces the possibility of interpersonal *interpenetration*,¹⁰ whereas the dismissively casual “It’s just talk” points to the inefficacy of language: limbs’ loosing of syntax ultimately turn to nothing.

Interpenetration, Luhmann writes, “is not a general relation between system and environment but an intersystem relation between systems that are environments for each other” (LUHMANN, 1994, p. 213). Penetration, on the other hand, occurs “if a system makes its own complexity (and with it indeterminacy, contingency and the pressure to select) available for constructing another system” (Ibid.). For this reason, interpenetration presupposes a reciprocal exchange of complexities, which implies that to be “the opposite of tongue-tied,” that is, to be pure, communication cannot occur at all, and if it could then it could not proceed without indeterminacy. As long as interpenetrating systems – in this case “alter” and “ego,” to employ Luhmann’s terminology, remain environments for each other – “the complexity each system makes available is an incomprehensible complexity – that is, disorder – for the receiving system” (Ibid.). Accordingly, one could say that the two entities speaking in the poem are psychic systems (“conscious re-productions of thoughts”) mutually exchanging increasing amounts of noise. As it turns out, “simply that, conversing” is not so simple. Comprehension can only be rationalized as systemic distinction and

¹⁰ “In interpenetration, the receiving system also reacts to the structural formation of the penetrating system, and it does so in a twofold way, internally and externally. This means that greater degrees of freedom are possible in spite (better: because!) of increase dependencies. This also means that, in the course of evolution, interpenetration individualizes behavior more than penetration does. This is strikingly true in the relationship of human beings to social systems” (LUHMANN, 1995, pp. 213-214).

no longer as an unfiltered duct between subjects (Cf. GUMBRECHT, 1997). Arguably, the genius of *Text Rain* lies in its self-conscious recalcitrance to signification despite its blatant attempt at dialogue. Operating in the turbulent juncture of concrete space and screenic instantiation, the installation unfolds in intuitive, pre-semantic increments of legibility and nonsense. I particularly agree with Ricardo's assessment that "*Text Rain* is motivated by a reach for connection, not merely of what emanates in the epic flows of its movements, but also by the text it fragmentarily presents" (RICARDO, 2010, p. 58). All one can do is reach for connection but never fully attain it: "what we experience as our own mind operates as an isolated autopoietic system. There is no conscious link between one mind and another. There is no more operational unity of more than one mind as a system" (LUHMANN, 1994, 372). Thus even if the interactor is able to piece together an entire verse, the aesthetic experience occurs primarily in a pre-semantic space. The incommunicability between subjects is thematized in *Text Rain* – that is, it is implied but never spelled out – unless one insists on a reductive reading of the poem.



6 Digital Proximities & Aesthetic Mediations

6.1.

Being (in Motion): A Few Hasty Theoretical Conclusions

Communication either is or is not continued. Whenever it does continue, it remains adapted, no matter how self-dynamically it proceeds. It is not the goal of communication to adapt itself to the respective mind. On the contrary, communication fascinates and occupies the mind whenever and as long as it continues. This is not its purpose, nor its meaning, nor its function. Only, if it doesn't happen, then it doesn't happen.

Niklas Luhmann, 1988

convergence

I ended the last section with a brief foray into Luhmann's communicative model and now propose that we return to Gumbrecht. I realize that the structuring of this thesis might appear unorthodox, as will its heuristic methodological strategies. The oscillation between theory and practice not only hinders the possibility of linearity, but demands recursive models of theorization, a systems re-entry paradigm. My goal, or bet, was to attain something akin to Siegfried Schmidt's "nutshell formula" stated in the preface of his *Histories & Discourses: Rewriting Constructivism*, "from the start without a beginning through the building of structures out of instabilities to the finality of transience" (SCHMIDT, 2007, p. 22). I also realize that my personal effort to reconcile materiality with the immaterial could have generated more questions than answers. For that, I am at fault. I have always subscribed to Luhmann's notion that a reduction in complexity, though occasionally necessary, also implies an increase in

complexity. If we recall, the complexity each system makes available is an incomprehensible complexity (disorder) to the receiving system (LUHMANN, 1993). Luhmann defines complexity in terms of a threshold – “complexity is the perspective from which problems are experienced by contemporary systems” (LUHMANN, 1995, p. 24). At a structural level, the threshold is the point where it no longer becomes possible to connect every element of a system to every other one (Ibid.). From this it follows that the reduction of complexity implies a reduction in contingency. Luhmann regarded technology as functional simplification, or reduction of complexity: “Only such a broad definition of technology can make good on the claim to contributing to the self-description of contemporary society” (LUHMANN, 1998, p. 7). As an output of digital technology, digitally instantiated literature both responds to and alters the contexts in which it inscribes itself. Methodologically, inasmuch as the visibility of novel literary objects is informed by theory, the adoption of a recursive pattern of investigation proved fruitful.

To the extent that embodiment is contingent instantiation, let us agree to partake in Katherine Hayles’ contention that the medium is the signal, whatever form the message might be molded to assume. In this sense, it is not unexpected that Espen Aarseth’s cybertext theory should demand that one understand language recursively: text is a machine for the production, transmission and reception of signs.¹ As Jörgen Schäfer eloquently puts it in his essay “Reassembling the Literary:”

Linguistic signs then are not to be understood as storage- and transfer-media for contents independent of language and media-indifferent; rather as *operative media* they are themselves—quite in the sense of the mediation approach—the condition of the possibility of mental form-creations. (SCHÄFER, 2010, p. 30)

This induction of a “cybernetic” practice in theorization of new media seems quite productive and well suited to my desire to contribute to the academic and scholarly practice of digital literature (Cf. SCHÄFER, 2010). When I tackle Gumbrecht’s notion of presence or Luhmann’s systemic thought within the context of new media installations it is in the hope that, as Schäfer surmises, “(...)

¹ Schäfer uses Ludwig Jäger’s notion of transcriptive logic of language as a point of departure. “Language is the anthropological archetypal medium of cognitive integration” (Schäfer, 2010, p. 30).

recursive loops are not just a simple means of reproduction. Rather they combine repetition and variation in a very specific way with the objective of creating something new” (SCHÄFER, 2010, p. 30).

As it was clear in *Text Rain*, highly complex digital objects will often demand and benefit from both hermeneutical and non-hermeneutical “readings”. Despite their lexical natures – and the interpretative responses elicited by them – their physical apprehension generates material effects of presence, which are not to be ignored. Borrowing from theorist Andrew Darley’s terminology, Roberto Simanowski speaks of a shift in spectatorship modalities, from readers concerned with conceptual and symbolic attributions to spectators veered towards corporeal stimulation (SIMANOWSKI, 2011).² Always a believer in de-paradoxifying attitudes, I will claim the following: (a) In digital installations, the effects of physicality encompass an increasing sense of self-awareness on the interactor’s part, a surrendering to a state of relaxation akin to the focused serenity of waiting for a revelation Gumbrecht ascribes to *Gelassenheit* (GUMBRECHT, 2004). (b) Profiting from this sensory and cognitive oscillation, mixed reality digital installations subvert hermeneutic order even more drastically than non-digital installations would, for in the latter the matter/immaterial modulation is not manifest. Moreover, (c) I suspect that this increased awareness of corporeality and embodiment has not emerged of its own accord. It is not a spontaneous happenstance, but rather represents a cultural tendency that has gained currency as an aesthetic trend because it fulfills certain pre-cognitive needs not fully addressed by the hermeneutical/metaphysical paradigm. It is no wonder that this reactive sensory/affective technological turn has led several authors and researchers of new media to speak of biometric sensors, cortex-encased protoplasts, cyborg bodies and prototyping platforms, promoting a shift away from visual interfaces to proprioceptive interfaces. If one recalls Hayles’ oft-cited definition of posthuman, one understands that the posthuman view prioritizes informational patterns over material instantiations, “so that embodiment in a biological substrate is seen as an

² For Simanowski, this state of affairs is conducive to a rebirth of interpretation: “interpretation is again liberating, elucidating, necessary. I think it is and hence in my approach to the various examples of digital art not only describe what it is and how it works but also ask what it could mean” (Ibid.). In this regard, I am inclined to side with Gumbrecht and Gianni Vattimo in their shared frustration with a contemporary philosophical climate wherein “a moment arrives when one can no longer feel anything but anger, an absolute anger against so many discourses, so many texts that have no other care than to make a little more sense, to redo or to perfect delicate works of signification” (VATTIMO apud GUMBRECHT, 2004, p. 57).

accident of history rather than an inevitability of life” (HAYLES, 1999, p. 3). By the same token, consciousness, heretofore regarded as “the seat of human identity in the Western tradition” (Ibid.), becomes, per Hayles, “an epiphenomenon,” but a secondary byproduct of embodied information.

I derive my sub-title from the third chapter of Gumbrecht’s *Production of Presence: What Meaning Cannot Convey*, “Beyond Meaning: Position and Concepts in Motion” (GUMBRECHT, 2004). Having affirmed in a section entitled “Affinities” contained in his introduction/User’s Manual that this chapter would relate the concept of presence to various publications within the humanities, the author reluctantly admits to his intellectual debt to the philosophy of Martin Heidegger. The operative premise is that a confrontation with the question of Being would help “broaden our minds,” thereby prompting exteriority: a view (from) outside – or beyond – the hermeneutic paradigm. Gumbrecht’s emphasis on substantiality as well as his desire to explore the complexity of the Heideggerian concept of Being is justified by essentially two reasons. Firstly, Being has proven to be one of the most controversial concepts in Heidegger’s philosophy in that it is constantly associated with substantialist trends – which inevitably fall under “the anathema of intellectual poor taste” (GUMBRECHT, 2004, p. 66). Secondly, a detailed depiction of the concept of Being will render visible the extent of the transformation required by an actual conceptual shift from “meaning culture” to “presence culture” (GUMBRECHT, 2004, pp. 66-67). The latter concerns our argument directly.

In the paragraphs to follow, I circumvent the traps of an excursus into Heideggerian ontology and pinpoint the passages in Gumbrecht’s reading of Heidegger which concern our argument directly – as they help clarify the concept of *presence* and how it can be applied to *digital aesthetics*. By establishing four different perspectives that would justify the position of “eccentricity” he adopts vis-à-vis the metaphysical paradigm, Gumbrecht suggests that “Being” in Heidegger’s philosophy takes precedence over truth (*Alethéia*). In other words, it assumes the place of the content of truth – which had been previously taken by Platonic notions of ideas and other such conceptual forms of configuration (GUMBRECHT, 2004, p. 67). To be clear, it is not that Being substitutes truth, for truth, according to Heidegger, is something that happens (*ein Geschehen*). The occurrence of this happening brings forth a unique being: “Truth happens in

the temple's standing where it is" (HEIDEGGER apud GUMBRECHT, 2004, p. 162). Truth is the "showing forth" or "unconcealment" of that which is hidden (Ibid.).³ Because Being is that which is "both concealed and hidden in the happening of truth," it bears a close relation with presence (GUMBRECHT, 2004, p. 67). Being, per se, is not conceptual, nor does it possess any transcendental aspect: it is immanent, substantial – it belongs to the world of things and has, indeed, a thingly character. "Being is not a meaning" (Ibid).

Being's movement in space happens tridimensionally. If the vertical dimension of Being accounts for its emergence ("sway"), then the horizontal dimension relates to its perception ("idea", "look"), which also means Being offering itself to somebody's view. The third dimension in the movement of Being is one of withdrawal and bears the most intimate affinity with the elusiveness of presence. Insomuch as presence can never "hold" and is always ephemeral, presence can never be stable, "it can never be something that, so to speak, we would be able to hold on to" (GUMBRECHT, 2004, p. 58). Referring to Heidegger's "Zur Erörterung der Gelassenheit," (1944) Gumbrecht suggests that Being is always entrapped in a double movement:

I am convinced that this withdrawal is part of a double movement of unconcealment and withdrawal that, as we have already seen, constitutes the happening of truth, and that the part of unconcealment contains both the vertical movement of 'sway' (of emergence and its result: being there) and the horizontal movement of 'idea' (as presenting itself, appearance). (2004, p. 69)

The third dimension of Being presupposes an articulation in space. Insofar as Being relates to "things of the world" in a pre-cultural state, which is to say before they become couched in cultural discourse, Gumbrecht is able to deploy "the rhetorical figure of the paradox" and argue that Being bears a pre-ontic relationship with specific cultural lifeworlds: "[Being] refers to the things of the world before they become part of the world" (GUMBRECHT, 2004, p. 70). Because Being and presence are to be employed interchangeably, the logical implication is that presence is only presence if it occupies a position of

³ I shall briefly return to this problem. For now, suffice it to say that within systems theory logic, the problem of truth can be solved through the distinction between what Luhmann describes as *reference* and *code* problems, respectively. Referring to Willard van Orman Quine, Luhmann writes that "the distinction between analytic and synthetic truths must, as Quine has already suggested, be discarded. It can easily be replaced by the distinction between self-reference (= analytic) and external reference (= synthetic)" (LUHMANN, 1998, p. 13).

eccentricity vis-à-vis semantic and semiotic networks and discourses. When applied to the culture-specific universe of digital aesthetics, this formal scheme presents us with a myriad of problems. On the one hand, in Western social systems, tragically fraught with endless processes of meaning attribution and exhaustive interpretation, presence can only be construed as state of exception, an interstice, an ineffable quasi-material emergence. On the other hand, to suggest that theories on the posthuman subject and disembodied computation can seamlessly coalesce into Gumbrecht's notions of presence is to overlook obvious difficulties within the disciplinary field of digital aesthetics, more precisely, the remissive nature of the digital medium itself. One need only consider the inescapable fact that digital objects owe their flickering ontologies to chains of zeroes and ones and that processing operations precede cognitive (interpretative on the most basic of levels) reception efforts (HAYLES, 2005).

[An electronic text] ... does not exist anywhere in the computer, or in the networked system, in the form it acquires when displayed on screen. After it is displayed, of course, readerly processing may occur, as with print. But we should not indulge in the logical confusion that results when it is assumed that the creation of the display—a process that happens only when the programs that create the text are activated—entails the same operations as the reader's cognitive processing. (HAYLES, 2005, p. 101)⁴

Extrapolating on the notion of dispersed embodiments (and textualities), Hayles observes that the third wave of cybernetics brought with it the rather disturbing notion that patterned information can circulate through a vast array of material substrates – carbon-based human body being but one of the many options. What are the implications of this view to the study of embodiment? First and foremost, the posthuman view unequivocally reinforces the liberal subject tradition of the self as disembodied consciousness (*res cogitans*). Put differently, because information has “lost its body,” embodiment ceases to be indispensable to human beings: “to the extent that the posthuman constructs embodiment as an instantiation of thought/information, it continues the liberal tradition rather than disrupts it” (HAYLES, 1999, p. 5). Thus considered, the concept of “information” – as per Bateson's dictum of “the difference that makes a difference” – bears striking similarities to the notion of “meaning,” inasmuch as

⁴ Emphasis added. The latter portion of this passage is also quoted as a footnote in Jörgen Schäfer's “Reassembling the Literary” (2010).

both processes evade materiality. Anticipating this intuitive presupposition, Hayles is careful to propose that she sees the deconstruction of the liberal humanist subject as “an opportunity to put back into the picture the flesh that continues to be erased in contemporary discussions about cybernetic subjects” (Ibid.).⁵

There are a number of consequences to this line of thought. With regards to communicative media and literature in particular, disembodied informational patterns and distributed cognition(s) do seem incompatible with a conception of presence so inexorably predicated on substance. Embedded in the search for a sensitive re-presentational model (GUMBRECHT, 2004) – one of presence versus meaning – is the effort to undo absence in a spatio-temporal sense – i.e., once one subtracts temporality from the equation, absence in fact ceases to exist. Making things present means making them concretely available – i.e., “ready-to-hand” (*Zuhanden*) vs. “present-at-hand” (*Vorhanden*). Gumbrecht draws on Heideggerian logics extracted from *Being and Time* to explain a tendency toward physical proximity. Heidegger replaces the subject/object paradigm with the concept of *Dasein*, or being-in-the-world. As Heidegger’s critic Paul Gerner notes, the hyphenation indicates the emphasis on “the unitary character of the phenomenon” (GORNER, 2007, p. 35). *Dasein* is not in-the-world as one spatial entity is contained in another: “*Dasein* is not in the world in the sense that water is in a cup” (Ibid.). Nor is *Dasein* consciousness. So what is *Dasein*? One key factor in this equation is the word *da*, which in German means space plus *Sein* (being).

The entity to which Being (...) belongs is one in which we have characterized as that entity which in each case I myself am (*bin*). The expression *bin* is connected with *bei*, and so *ich bin* (“I am”) means in its turn “I reside” or “dwell alongside” the world, as that which is familiar to me in such and such a way. “Being” (*Sein*) as the infinitive of *ich bin* (that is to say, when understood as an *existentiale*), signifies “to reside alongside,” “to be familiar with.” “*Being-in*” is thus the formal existential expression for the Being of *Dasein*, which has *Being-in-the-world* as its essential state.

⁵ It is imperative to note that Hayles devotes a significant portion of *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* to the reconciliation of information/matter aporia: “it is this materiality/information separation I want to contest (...)” (HAYLES, 1999, p. 12). My brief exploration of the theme hardly does justice to the complexity of her theories. I simply wish to point out that the matter/information duality subsists in theories of virtuality.

Dieses Seiende, dem das In-Sein in dieser Bedeutung zugehört, kennzeichneten wir als das Seiende, das ich je selbst bin. Der Ausdruck »bin« hängt zusammen mit »bei«; »ich bin« besagt wiederum: ich wohne, halte mich auf bei ... der Welt, als dem so und so Vertrauten. Sein als Infinitiv des »ich bin«, d. h. als Existenzial verstanden, bedeutet wohnen bei..., vertraut sein mit... *In-Sein ist demnach der formale existenziale Ausdruck des Seins des Daseins, das die wesenhafte Verfassung des In-der-Welt-seins hat.* (HEIDEGGER, 1927, p. 54 apud GUMBRECHT, 1997, p. 447)

According to Gumbrecht, another important aspect of *Being and Time* is the establishment of an explicit relation between the new technological possibilities of crossing distances and Heidegger's own analyses of space as a structural precondition for human existence. Gumbrecht notes that through the use of use of his "typical hyphenations" Heidegger converts *Entfernung* (distance) into its opposite *Ent-fernung* (shortening the distance or, as Gumbrecht better puts it, "undoing of farness"). This pun would have taken Heidegger to the analogous thesis derived from the priority that he gives to *Zuhandenheit* ("ready-to-hand") over *Vorhandenheit* ("present-at-hand"). In other words, from an existential viewpoint, proximity (or rather the undoing of farness) precedes distance in importance (GUMBRECHT, 1997).

In Dasein there is an existential tendency towards closeness. All the ways in which we speed things up, as we are more or less compelled to do today, push us toward the conquest of remoteness [*Entferntheit*]. With radio, for example *Dasein* has so expanded its everyday environments that it has accomplished a de-distancing [*Ent-fernung*] of the "world" – a de-distancing whose implications for the meaning of *Dasein* cannot be fully visualized.

Im Dasein liegt eine wesenhafte Tendenz auf Nähe. Alle Arten der Steigerung der Geschwindigkeit, die wir heute mehr oder minder gezwungen mitmachen, drängen auf Überwindung der Entferntheit. Mit dem »Rundfunk« zum Beispiel vollzieht das Dasein heute eine in ihrem Daseinssinn noch nicht übersehbare Entfernung der »Welt« auf dem Wege einer Erweiterung der alltäglichen Umwelt. (HEIDEGGER, 1927, p. 105 apud GUMBRECHT, 1997, p. 365)⁶

Easily detected in the field of digital aesthetics is a general inclination towards "mediated sensoriums," – possibly articulated in terms of tactility, and by extension, proximity. Theories of presence, I contend, can offer a consensual

⁶ I have studied Gumbrecht's *In 1926: Living on the Edge of Time* in detail in my M.A. dissertation and I think that to dwell excessively on it here would seem redundant. Nevertheless, I do want to call attention to Gumbrecht's self-proclaimed goal to produce the immediate and sensory illusion in the reader of being "inside the worlds" of 1926 simply because one may find this same logic in some works of digital literature.

answer to a good measure of theoretical controversies. Gumbrecht observes that Being's ongoing "double movement" of production ("coming forth") and retraction ("withdrawal") suggests not only the evident connection with the expression "production of presence," but also a possible connective node with Martin Heidegger's concept of appearing, which I shall address separately. Suffice it to say that however "provisional [his] attempt at unfolding the complexities of Heidegger's concept of Being may remain, there cannot be any doubt that this concept is very close to the concept of presence" (GUMBRECHT, 2004, p. 77). Without dwelling on particular articulations of such crucial Heideggerian concepts as "world" and "earth," I would like to temporarily and provisionally "hold on" to the implication of Being as a tangible entity, albeit removed from historical or discursive networks.

(...) unlike the Platonic ideas, Being is not supposed to be something general or something metahistorical "below" or "behind" a world of surfaces. Perhaps it is as simple as this proposal for a definition: Being is tangible things, seen independently of their culturally specific situations – which is neither an easy feat to achieve nor a probable thing to happen. (GUMBRECHT, 2004, p. 76)

If Being can only be Being outside semantic and cultural grids, then what sort of materiality can we ascribe to it? The question could be posed differently: insofar as Being can be assumed to be interchangeable with the concept of presence, then what sort of materiality can we expect from presence? Gumbrecht's response requires nothing short of another brief foray into Heideggerian ontology. For my part, I shall restrict my answer to a few points of concern: (a) *Dasein* is not synonymous with commonplace definitions of the liberal subject. Rather, "*Dasein* is being-in-the-world, that is human existence that is already in – both special and functional – contact with the world" (GUMBRECHT, 2004, p. 71). (b) *Dasein* has a material grasp of the things of the world. This is not to suggest that Heidegger eliminates the distance between *Dasein* and the world: "this world with which *Dasein* is in touch is 'ready-to-hand,' it is always already interpreted world" (Ibid.). Thus, the contact is not unmediated. (c) Heidegger distinguishes *Sein* (Being) from *Seindes*, which means *Sein*'s appearance, "pure surface, the primary dimension of human experience" (GUMBRECHT, 1997, p. 449). As such, human existence can be theorized as but

one of the possible incarnations of Being, one which has the potential of becoming self-aware (Ibid).⁷

Let us go along with Gumbrecht's reading of Heidegger's *The Origin of the Work of Art* and accept that the work of art is a "privileged site for the happening of truth, that is for the unconcealment (and the withdrawal of Being)" (GUMBRECHT, 2004, p. 72). Let us also assume that the unconcealment of Being is akin to the happening of presence and that presence is the intangible facet of aesthetic experience. On this basis, it stands to reason that aesthetic experience ought to bear strict relations with *Dasein's* possible contribution to the unconcealment of Being as composure (*Gelassenheit*) (GUMBRECHT, 1997; 2004). Irrespectively of possible objections one may bear against Gumbrecht's reading of Heidegger, the theoretical conundrum concerning the integration of presence to the logics of digital aesthetics remains startlingly simple: how to reconcile the immateriality engrained in the paradigm of virtuality with the concept of presence? Surely, the attempt to overcome metaphysical epistemology after the institutionalization of hermeneutics entails a commitment to counterintuitive conceptions of materiality. This is to say that, in many regards, Gumbrecht's presence could erroneously be associated with the thorny ontological premises of simulation/virtuality as per Baudrillard et. al. Differently put, presence is reliant on what Paul Zumthor has called the "fiction of immediacy" (ZUMTHOR, 1988, p. 221). If we recall, presence is rooted in the concept of the Aristotelian sign, which simultaneously denotes both substance and form.⁸ It

⁷ For further exploration on the relationship between *Sein* and *Dasein* see: "*Dasein* is an entity which does not just occur among other entities. Rather, it is ontically distinguished by the fact that, in its very Being, Being is an issue for it. But in that case, this is a constitutive state for *Dasein's* Being, and this implies that *Dasein*, in its Being, has a relationship toward that Being—a relationship which itself is one of Being. And this means further that there is some way in which *Dasein* understands itself in its Being, and that to some degree it does so explicitly. It is peculiar to this entity that with and through its Being, this Being is disclosed to it. Understanding of Being is itself a definitive characteristic of *Dasein's* Being. *Dasein* is ontically distinctive in that it is ontological" (HEIDEGGER apud GUMBRECHT, 1997, p. 449).

"*Das Dasein ist ein Seiendes, das nicht nur unter anderem Seienden vorkommt. Es ist vielmehr dadurch ontisch ausgezeichnet, daß es diesem Seienden in seinem Sein um dieses Sein selbst geht. Zu dieser Seinsverfassung des Daseins gehört aber dann, daß es in seinem Sein zu diesem Sein ein Seinsverhältnis hat. Und dies wiederum besagt: Dasein versteht sich in irgendeiner Weise und Ausdrücklichkeit in seinem Sein. Diesem Seienden eignet, daß mit und durch sein Sein dieses ihm selbst erschlossen ist. Seinsverständnis ist selbst eine Seinsbestimmtheit des Daseins. Die ontische Auszeichnung des Daseins liegt darin, daß es ontologisch ist*" (HEIDEGGER, 1967, p. 12).

⁸ In forging the alternative to the hermeneutically-based trope of the sign, Gumbrecht also makes use of Hjelmslev's renowned quadrangle: a departure from Saussurean signifier/signified dichotomic model.

stands to reason that in predominantly meaning cultures, presence becomes as improbable an occurrence as the emergence of aesthetic experience itself – which, according to Gumbrecht, provides us with feelings of intensity that are fundamentally *divested of or free from* their cultural/historical specificity, which is to say the possibility of their inscription in “everyday worlds.”⁹ It is thus not surprising that Gumbrecht should expand his theoretical reflection on presence to athletic and musical performances (GUMBRECHT, 2001; 2004).

For Gumbrecht, the crucial point of convergence between Being and presence lies in their shared tension with the notion of meaning, i.e., “that which makes things culturally specific” (Ibid.). The author is careful to establish that Heidegger never anticipated the connection embedded in the mobility of Being and a “dimension of extreme temporality” (GUMBRECHT, 2004, p. 77).

Being and presence imply substance; both are related to space; both can be associated with movement. Heidegger may not have elaborated on the notion of extreme temporality as much as some contemporary thinkers try to do; but what I have tentatively called ‘the movements’ of Being in Heidegger’s conception make it impossible to think of Being as something stable. (GUMBRECHT, 2004, p. 77)

In light of such a veritably unstable theoretical spectrum, the point is to understand that both Being and presence – and the stress should fall on the latter – presuppose movement. There cannot be full stability. With Jean-Luc Nancy, Gumbrecht concludes that the sort of presence that the French theorist envisions is “difficult—if not impossible—to reconcile with modern Western epistemology because it brings back the dimension of physical closeness and tangibility” (p. 57). Gumbrecht’s own emphatic reiteration of presence’s oscillating qualities validates this claim. To envision the pedagogical and even practical applications of these forms of theorization is no simple task. Yet, what I propose is an approach to digital aesthetics informed by them – one that takes into account a new interplay of medial, symbolic and material bodies and textualities. In this regard, the duality in concept of experience matters insofar as in digital installations, one is exposed to multiple modalities of reception. Because of the variegated nature of these receptive experiences, they tend to activate both kinesthetic/sensory-motor and semiotic responses. The physical/physiological

⁹ See. GUMBRECHT: “Mundo Cotidiano’ e ‘Mundo da Vida’ como Conceitos Filosóficos: Uma Abordagem Genealógica.” In. *Modernizacao dos Sentidos*, 1998.

body being central in the vast majority of mixed media environments, immersive installations can be said to require cognitively paradoxical answers. On the one hand, the situation is one of insularity – a removal from the daily level of experience and, by extension, from culturally forged means of world-appropriation and sense-constitutive activations. On the other, bodily self-awareness generates relationally specific orders of aesthetic appropriation. This is particularly visible in objects of the lexical sort, where the semiotic impulse to read is triggered. In short, the emphasis on “affective modes of communication,” to borrow from new media theorists Maria Angel and Anna Gibbs’ terminology, requires profound revisions in conceptual repertoires. Material and concrete sensory impacts demand altered literacy competencies, which do not (and should not) preclude whatever interpretative impulses one may feel towards literary objects. As difficult as it may be to ascertain the exact extent to which an exterior sensory impulse might numb or temporarily suspend our cognitive faculties, Gumbrecht’s conception of moments of intensity is applicable in the theorization of complex immersive digital installations.

There is nothing edifying in such moments, no message, nothing that we could really learn from them – this is why I like to refer to them as moments of intensity. For what we feel is probably not more than a specifically high level in the functioning of our cognitive, emotional, and perhaps even physical faculties. (GUMBRECHT, 2004, p. 98)

The reasoning stems from the acknowledgement that due to its propensity towards intensity, aesthetic experience ought to occur within a separate realm from that of praxis. Nevertheless, in my view, the epistemic question immediately following such a bold statement should not be: why look for such moments at all? – i.e., to investigate, as Gumbrecht does, “the specific appeal that those moments hold for us” (GUMBRECHT, 2004, p. 99). Rather, what I believe matters most, at least within the scope of this thesis, is something that the author touches on ever so tangentially: that is, the extent to which aesthetic experiences presuppose interpretation; in other words, how much of our aesthetic engagement with the world is dictated by pre-learned, socially-constructed knowledge of the world (*Erfahrung*) or even, is a reasonably unmediated experience of the world (*Erleben*) at all possible? If aesthetic experiences are extraordinary moments transpiring within our everyday worlds, then they could arguably be symptomatic

of some sort of preconscious need.¹⁰ Gumbrecht favors the phrase “moments of intensity” or “lived experience” (*“ästhetisches Erleben”*) over “aesthetic experience” (*“ästhetische Erfahrung”*) precisely because most philosophical currents associate the term experience with interpretation, or acts of meaning attribution (GUMBRECHT, 2004).

When I use the concepts *Erleben* or “lived experience” (...) I mean them in the strict sense of the phenomenological tradition, namely, as being focused upon, as thematizing of, certain objects of lived experience (objects that offer specific degrees of intensity under our own cultural conditions – whenever we call them “aesthetic”). (GUMBRECHT, 2004, p. 100)

Lived experience then presupposes perception (*Wahrnehmung*) and precedes *Erfahrung*. Despite his reliance on Luhmann’s systems-theory approach – rooted in operatively closed autopoietic systems – Gumbrecht assumes purely physical perception to be possible.¹¹ Let us then consider the following: contemporary mediatic society, like any other social system, receives its operational premises from its capacity to self-observe; it redesigns its own borders by permanently updating and actualizing its self-descriptions (LUHMANN, 1998). Inasmuch as new media’s self-descriptive apparatuses are permeated with the semantics of virtuality – encapsulating such prevalent tropes as shared/distributed perception and cognition –, it is possible to anticipate the problems that presence theory’s “substantialist” claims can impose. With Luhmann, we could potentially settle this discussion by readdressing the controversy between “realistic” and “constructivistic” perspectives in terms of systems-theory logics:

The usual lukewarm answer to a wrongly postulated problem then states that constructivism cannot manage without a small dose of realism. This controversy [between realist and constructivist theories] is wrong because no constructivist – neither the supporters of the strong program of Edinburgh nor Jean Piaget nor Ernst von Glasersfeld, neither the evolutionary cognition theory of the biological or nonbiological variety nor the second-order cybernetics of Heinz von Foerster –

¹⁰ This hypothesis is proposed by Frank Koppe. Gumbrecht adds that “[he disagrees] with Koppe’s proposal that ‘making us aware of situations of collective need’ should be considered as the main and genuine function of aesthetic experience” Cf. GUMBRECHT 2004, p. 165.

¹¹ Luhmann posits that there is no objective (correct) approach to a preexisting world. Anticipating this move, Gumbrecht tackles the issue in his explanation of the concept of *epiphany*, wherein the ephemeral nature of presence becomes abundantly clear. For further study on Gumbrecht’s take on reality see “Narrating the Past Just as If It Were Your Own Time” In. GUMBRECHT, H.U *Making Sense in Life and Literature*.

would ever deny that constructs must be staged by environmentally sensitive, real operations. (LUHMANN, 1998, p. 12)¹²

Once truth is defined as a positive value, whose binary negative is untruth (Ibid.)¹³, then we are able to surmount the problem of reference and address corporeality as such, as it simultaneously *inscribes itself in* and *retracts from* new media discursive practices.

Appearing and Seeping

In *Aesthetics of Appearing*, Martin Seel states that because aesthetic perception is natural to human beings and indeed an integral part of human behavior, it will actively seek opportunities to emerge at any given moment. Permanently open to us as one of the many active forms of engagements we are capable of establishing with our environments, aesthetic experience is not constricted to a specific area of our lives, looming as a possibility at all times. Rather paradoxically, it is also Seel who notes that an essential characteristic of all aesthetic relations is “that we take time for the moment, though in entirely different rhythms,” thus implying that aesthetic perception, when it does occur, takes place extra-temporaneously (SEEL, 2005, p. 20). The autonomous character of aesthetic experience could potentially lead to dissociations of a spatio-temporal order. If, for example, aesthetic experience occurs within the confined space of a museum, then it is limited by a certain locale and duration, which impose restrictive parameters in their own right. Very schematically I hypothesize that, (a) by its very ontological constrictions – its reliance on “flickering voltages” –, the digital medium posits its own variety of obstacles and difficulties. And (b) the

¹² In any event, instead of investing more time and effort in a, for our purposes, peripheral issue, I suggest we focus on how aesthetic experience is modified in the age of new media. Specifically, how presence plays a part in these new models of aesthetic experience one encounters in intricate mixed media immersive installations such as the aforementioned *Text Rain* by Camille Utterback and Romy Achituv and *Screen* by Noah Wardrip-Fruin. In *Text Rain*, I did not propose a full epistemological departure from an interpretative paradigm, but I did underscore the hypothesis that a refusal to address the physicality of the piece would amount to a poor (in the sense of a less interesting) close reading of it.

¹³ See Luhmann, 1998: “The distinction between self-reference (=analytic) and external reference (=synthetic) [must be discarded]. Then the distinction between reference and coding can take effect, and we see that the positive/negative values of the code true/false can be applied to both extra-referentially and self-referentially defined circumstances” (1998, p. 13).

parameters in question here bear absolutely no correspondence with “true” temporal duration, but simply refer to the phenomenological experience of time.¹⁴ For the purposes of critical analysis, it is preferable to speak of performative potentials than to ascribe material consistencies to objects whose reception rely heavily on moments of “appearance.”

To be sure, under the concept of “appearance,” Seel amalgamates all manner of conditions for the sensual/perceptual survey of reality: “To perceive something in the process of its appearing for the sake of appearing is the focal point of aesthetic perception” (SEEL, 2005, p. 24, Cf. GUMBRECHT, 2004).¹⁵ From this perspective, two points become exceedingly clear: (a) the situation of aesthetic perception always entails a moment of self-reflection, for by focusing on the appearing or the emergence of a certain object one becomes aware of their ability to perceive aesthetically; (b) as aesthetic *perception* can be deemed a contributing factor to the entirety of aesthetic *experience*, one can assume that it falls under the heading of reception. Once this is settled, we understand that the concentration on the momentary appearing of things is always at the same time “a reflection on the immediate presence in which this perception is executed” (SEEL, 2005, p.16). Aesthetic perception is thus a turning of one’s attention (or attentiveness) to the here and now, to the moment. Technically speaking, the *here* and *now* can take place anywhere, at any time, easily lapsing into distant *theres* and *thens* (Cf. SIMANOWSKI, 2011). The question immediately following these assertions is thus: what does this awareness encompass? When confronted with linguistic marks, does awareness not presuppose a conscious movement, a semiotic reaction to perception, which obligatorily leads to what Wolfgang Iser has termed “the act of reading?” Or is this awareness more intimately related to what Gumbrecht characterizes as “being in sync” with the things of the world, or

¹⁴ Cf. Gumbrecht, on the subject of the chronotope of historical time. In particular, see GUMBRECHT, H.U. “O presente em crescente expansão” (2002): “Caso não tenha ficado claro o que pretendia dizer com presente em crescente expansão, acrescentamos alguns comentários esclarecedores. Ele não está pensando em uma modificação no nível de descrição fenomenológica, que segundo Husserl, define tempo como ‘forma de vivência.’ (...) Mas é justamente isso que o interessa: o sentimento hoje ainda pouco familiar de que em nosso mundo, objetos e estruturas centrais se modificam mais devagar do que antes (...)” (2002, p. 55).

¹⁵ When he asserts his affinities with Seel’s intellectual program, Gumbrecht observes that even closer to “[his] concerns] (...) is German philosopher Martin Seel’s proposal to ground a new reflection on aesthetics in the concept of ‘appearance’” (GUMBRECHT, 2004, p. 63).

the world's *thinglyness* – i.e., “*Erleben* that is more than *Wahrnehmen* and less than *Erfahren*?” (GUMBRECHT, 2004, p. 118).

However one decides to approach these questions, it is relevant to reiterate that the debates are by no means finalized. Seel notes that in the aesthetic state we become free from the “compulsion to determine ourselves in the world” (SEEL, 2005, p. 4). This negative freedom presents us with one positive aspect: “in the play of the aesthetic perception, we are free to experience the *determinacy* of ourselves in the world” (2005, p. 5). Naturally, one must examine what the author means by *determinacy*. If it is to be understood as temporary certainty, or an ephemeral feeling of grounding, then it does have ties with Gumbrecht’s presence. Determinacy can be equated with the transient content of presence, or presence as *phusis* – a momentary emergence eliciting affects (i.e., broadly defined as the feeling of being “connected” to the things of the world).

Wherever the real presents itself in a repleteness and changeability that cannot be grasped but can nonetheless be affirmed, there we experience a scope for the possibilities of knowing and acting (...). (SEEL, 2005, p. 5)

In the spirit of interpolating theory and practice, I would point the reader to Julius Popp’s network-based installation *bit.fall*, wherein the algorithm culls trending words from search engines and deploys synchronized magnetic valves to “print” them in water (POPP, 2008).¹⁶ Because the water-made word is only distinguishable for a fragment of a second before the drops merge to become amorphous liquid, *bit.fall*’s thematization of ephemeral immanence is unambiguous. Due to its physical properties, water lends itself perfectly to an illustration of all passing things; like an utterance, which then recedes into silence, the aquatic text in *bit.fall* is sudden instantiation and subsequent (prompt) dissolution. One is reminded of Gumbrecht’s conceptualization of the epiphany component of aesthetic experience: “(...) Finally (and above all), epiphany within aesthetic experience is an event because it undoes itself while it emerges. (...) no single meaning structure and no single impression of a rhythm pattern (...) is present for more than a moment in the actual reading process” (GUMBRECHT, 2004, p. 113). I leave the reader with a still shot from the work and a deceptively

¹⁶ Popp explains that the valves are designed to comply with a computerized control system which modifies a curtain of water by manipulating 128 nozzles (Popp, 2008).

simple hypothesis: *bit.fall* offers a visualization of the sort of intermittent, – “flickering”/processual – presence I ascribe to programmable text.



Fig. 25. Still image from Julius Popp's *bit.fall*.

6.2.

Remembering the Cave

In a world of illusions we hold ourselves in place by memories. (...) We stare into the void of lost memories, a loose scatter about us of what fragments remain: no sense but nonsense to be found there. If memories define us, what defines us when they are gone? An unbearable prospect.

Text narrated by Robert Coover in the interactive installation *Screen* by Noah Wardrip-Fruin et al.

Screen by Noah Wardrip-Fruin et al. is a room-sized virtual reality display that begins as a reading and listening experience – a meditation on the theme of memory – only to turn into a full-fledged interactive and ludic act when words begin to peel off the walls and the interactor finds he is able to paste them back in their original locations. Because of the non-triviality of its demands, one might argue that *Screen* is as much about its theme (memory) as it is a self-referential study on the techniques of virtual reality. My idea being to adhere to a descriptive tone and utilize theoretical conceptualizations as constructive tools of analysis, I shall refrain from an interpretative reading of the piece and favor a shift towards a cooperative mode of analysis (meant if not to replace then at least to supersede acts of interpretation). Notions of shared embodiment (HAYLES, 1999) and production of presence (GUMBRECHT, 2004) become then theoretical and aesthetic tropes of analysis.

In the project sketch for ACM SIGGRAPH (Special Interest Group on Computer Graphics and Interactive Techniques) 2004, “Screen: Bodily Interaction with Text in Immersive VR”, authors Wardrip-Fruin, Joshua Carroll, Robert Coover, Shawn Greenlee and Andrew McClain affirm that *Screen* invites a three-layered “reading” effort, bracketed as follows: the first stage is relatively conventional, operating like an ordinary video installation: three introductory texts are projected onto three separate walls. The second stage is more dynamic and starts when a word peels from one of the projecting walls and flies toward the interactor. This action is accompanied by a ripping noise coupled with the sound

of the word being read back to the reader. A storm of increasing pace ensues and soon words will entirely surround the interactor, who, at this point, is allowed to intervene by striking words with a tracking glove. This bodily and non-trivial gesture of “batting at” words in what often turns out to be a vain attempt to fill the empty slots initiates the third stage of reading/playing, which consists of the results of the bodily interactions from the second stage. Because words will come loose at an increasing rate and quantity and because these words can crumble into syllables and fragments, the third stage’s (final) output is variable. Ultimately, however, regardless of how the process unravels, the end result is that of a reader overwhelmed by words. It should also be noted that at the end of the third stage, a final text is read back to the interactor (CARROLL, COOVER, GREENLEE, McCLAIN and WARDRIP-FRUIIN, 2005).

Writing on the subject of instrumental texts versus textual instruments, Wardrip-Fruin claims to be interested in both types of playable texts. Here I am concerned with the former. Of the latter, suffice it to say that textual instruments present a “contrarian inversion” of the first category.¹⁷ Instrumental texts are texts meant to be played with in an ergodic sense – they demand non-trivial interventions. Fruin notes that the first category’s propensity to amalgamate two essential modes of play – one plays games and one plays instruments –, explains the critical attention it has warranted from the digital literature community (WARDRIP-FRUIIN, 2005, p. 13). Because it combines computer game mechanics with virtual reality technology one could argue that *Screen* is something of a repurposed VR game that fits into Fruin’s definition of instrumental text.¹⁸ Though it could certainly warrant a ludology-focused study, *Screen*’s “playability” – i.e., its effectiveness as game – need not concern us here. Instead, I wish to concentrate the analysis on the kind of typographical materiality one can expect to find in Cave pieces – *Screen* being one example – and how such “playable” textual surfaces can inform our debate on the nature of aesthetic experience in VR environments.

Writing about the *diegetic* nature of *Screen*, John Cayley affirms that “when we write for the CAVE, we write – bracketing any audio component within the

¹⁷ See Chapter 2 for two instances of instrumental texts: *Regime Change* and *Newsreader*, both by Wardrip-Fruin.

¹⁸ Fruin observes that a young participant in the Cave experiment later inquired about “his score,” thus underscoring the work’s internal logic as a game.

scope of the present arguments – for a world of images” (CAYLEY, 2010, p. 202). Not wishing to bracket the audio component myself, I submit that theories of presence could potentially help insert the “trope of immateriality” (Ibid.), to evoke Cayley’s phrase, into analytical discourse. The Cave’s “rarefied, test-case environment,” to once again borrow from the author, situates materiality at the center of critical debates, but does little to resolve it at a theoretical level. Cayley’s essay title “The Gravity of the Leaf” is particularly telling:

My title, “The Gravity of the Leaf” evokes an underlying cultural force that draws graphic linguistic materiality to the two-dimensional surface and holds it there still. This force is phenomenological and accumulative, a function of the exigencies of graphically embodied symbolic practice that is addressed to humans. This force is strong and its strength is, I believe, borne out by the various ways in which we continue to read our now ubiquitous screens as page- or leaf-like surfaces rather than, for example spatial affordances, as symbolic architecture, shifting the spaces within which we live. (p. 203)

Once text migrates to, or rather merges with, physical space, then it actively confronts readers in a novel way: how to “read” text that has been afforded discernible volume and structure? What changes in literary communication when the topology of the page as master surface undergoes such radical transformations as to become “playable space” in a literal and concrete way? And what of the unfastened letter – i.e. “the floating text”? As he dissects “the gravity of the leaf,” Cayley speaks of a new phenomenology of language, wherein floating textual strings would not constitute acts of *remediation* proper, but rather frame new instances of “mediation” because they present “graphically embodied language in a way that is entirely unfamiliar (...)” (Ibid.). Inasmuch as it re-introduces text as both dislodged symbolic inscription and virtual obstacle – though lacking a third dimension, text becomes perceivable in space as solid matter –, then one might argue that the Cave rehabilitates and multiplies the paradoxes of Concrete rhetoric: reading vs. seeing. Furthermore, by advertently stressing materiality and volume, the Cave is a device particularly suited to the logics of presence: “if the floating images on the screens of our world may become a barrier that separates us forever from the things of the world, those same screens may also reawaken our fear of and a desire for the substantial reality we have lost” (GUMBRECHT, 2004, p. 139).

To return to the specifics of *Screen*, it seems necessary to reiterate that altered production mechanisms will often issue symmetrically altered reception scenarios. That *Screen* should encourage “peripheral reading” practices is both a function of the medium which instantiates it (and on which it runs) and, hermeneutically, a neat commentary on the binary articulations of remembrance/forgetfulness inherent to the semantics of memory. With Schäfer one could note that the sort of “peripheral reading” required of a “reader” of *Screen* reinforces the insufficiency of traditional reader-response models, wherein readers are assumed to be fully, not partially, engaged. Cayley has suggested the term “breaking media” to circumscribe the characteristics of the “manifold systems of representation that (...) programmable devices offer.” (CAYLEY, 2010, p. 203). Whether Schäfer’s “empirically verifiable literary pragmatics” be a viable solution remains to be seen (2010b, p. 54).

Given our prior debate on literariness, it seems productive to query the extent to which *Screen* presents itself as a literary piece. Fruin explains that in his experience of *Screen*, users have not been immune to semiosis, tending to oscillate between reading and playing. With regards to its *literariness*, I would offer a hasty conciliatory – albeit rather constructivist – answer: *Screen* is literary inasmuch as an informed interpretative community decides it is so. That literature has been a VR medium before the advent of modern computer technologies is one of the simplest premises of literary theory (Cf. GENDOLLA & SCHÄFER, 2010, OLINTO, 2004). Discrete and alphanumeric inscription having proven to be immensely efficient in storing, processing and transmitting information, literature becomes, per Gendolla and Schäfer’s successful terminology, a meta-medium, hence the ideal site for the enactment of the fictive ability of human mind (Ibid.). Mixed reality immersive environments such as the Cave merely concretize these fictive and imaginary realities.

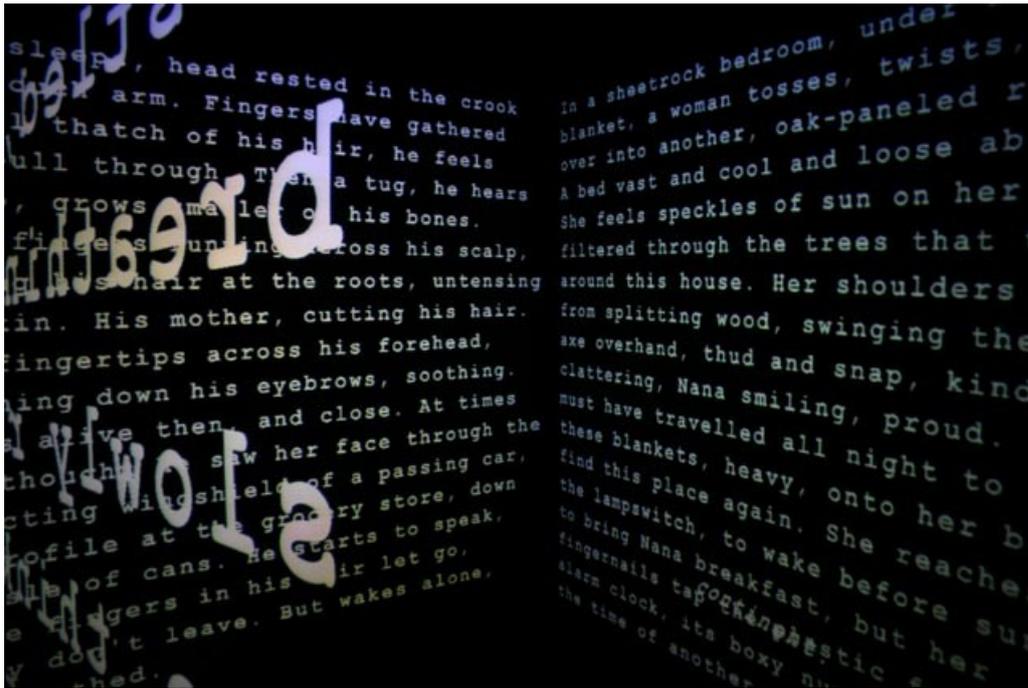


Fig 26. *Screen (all walls)* by Noah Wardrip-Fruin (2002).¹⁹

In Hayles' aforementioned introduction to *Electronic Literature: New Horizons for the Literary*, the author pioneers the Cave as “a site for interactive literature” (HAYLES, 2008, p. 12). Hayles also comments on *Screen*'s “startlingly literal” relationship with its theme, an observation equally applicable to *Text Rain*. The most daring approach to this new receptive modality would require that one combine what Rita Raley deems the “kinesthetic, proprioceptively vivid and haptic”²⁰ experience of reading *Screen* with another similarly important feature it presupposes: the presence of the interactor's body as an extension of the

¹⁹ I find the quasi-non-representable quality of the Cave experiments a somewhat disquieting thought – especially so in the context of this type of exercise: an academic doctoral thesis. Elsewhere, I naively thought to dodge this limitation with an impressionistic reading of the piece, attempting an essayist description of it so as to fully convey – and in certain ways, reenact – the experience. It did not do it justice. Technically and strictly speaking, the above images are POV images (from the primary POV). Since they cannot be taken with a regular camera, these can be made as screenshots from the desktop preview – i.e., from the previewing software, which runs in mono. Obviously, if one opts to do it this way, one is not recording an embodied experience *in the Cave itself*. In an email exchange with Cave director John Cayley, he assured me that no best-standard way to document Cave pieces has been devised, which is to say that they have not used stereo cameras or even, to his knowledge, cameras tracked as the primary point of view (the POV for which the multiple displays are rendered). In addition, he explained that in order to get video recorded images from the Cave, one needs to run them in mono (so that the camera will not record a doubled/overlaid image). Hence, and this is the point I wish to stress, the video taken from a POV in mono will necessarily be displaced from the primary POV and consequently not a reenactment of the experience itself but a somewhat different performance of it (CAYLEY, personal email correspondence).

²⁰ Apud Hayles, 2008.

interface. In his essay “Playable Media and Textual Instruments” originally published in *dichtung-digital* in 2005, Wardrip-Fruin writes about the uncanny experience of “touching” words: “the language of the text, together with the uncanny experience of touching words, creates an experience that doesn't settle easily into the usual ways of thinking about gameplay or VR” (FRUIN, 2004 <http://www.noahwf.com/screen/index.html>). Why does it not settle easily? What is it about loose text that makes us wonder about the “language of new media”? Surely the estrangement cannot simply be ascribed to commonplace technological awe vis-à-vis virtual reality technologies, sensors and data flows.²¹

Hayles defines virtuality as “cultural perception that material objects are interpenetrated by information patterns” (HALYES, 1999, p. 14). According to the author, the definition reenacts “the duality at the heart of the condition of virtuality – materiality on the one hand, information on the other” (Ibid.). This is true to a certain extent. If, however, rather than a dichotomous typology we choose to regard virtuality as a site for a coupling of spheres, then I believe we can profit from theories derived from the non-hermeneutical field. In a chapter entitled “Epiphany/Presentification/Deixis: Futures for the Humanities and the Arts” in *Production of Presence: What Meaning Cannot Convey*, Gumbrecht writes that one way to account for his/our obsession or fascination with tactility is to address a preconscious desire to have the things of the world close to our skin.

Typologically speaking, the dimension of meaning is dominant in Cartesian worlds, in worlds for which consciousness (the awareness of alternatives) constitute the core of human self-reference. And we are not precisely longing for presence, is our desire for tangibility not so intense because our environment is so almost insuperably conscious-centered? (GUMBRECHT, 2004, p. 106)

Using similar logic, the tendency towards sensory-oriented technology can be understood as a reflexive reaction of a society that perceives itself as excessively contact-deprived. Consisting majorly of disembodied posthuman

²¹ As Frank Popper informs us in his *From Technological to Virtual Art* (2007), virtual art has been around since the 1980s: “technically speaking, virtual art includes elements of all art made with the technical media developed in the late 1980s. One aspect at the time was that interfaces between humans and computers – for example, visualization casks, stereoscopic spectacles and screens, generators of three-dimensional sound, data-gloves, data clothes, position sensors, tactile and power feedback systems, and so forth – allowed us to immerse ourselves completely into images and interact with them” (POPPER, 2007, p. 2).

selves and digital-flâneurs²², the paradigm of virtuality is inevitably fraught with dematerialization and immateriality. It is, thus, only to be expected that a society that bases its self-descriptive semantics on such constructs as “information society” and “techno-village” should adhere to metaphors extracted directly from virtuality: “as computers proliferate, they are endowed with increasingly powerful networking capabilities” (HAYLES, 2008, p. 47). In this sense, it might appear contradictory to suggest that one could benefit from such undeveloped concepts as *epiphany* and *presentification* to obtain general conclusions about computer-based literature and art. Be that as it may, I maintain that inasmuch as *Screen* – and many other Cave pieces such as Claire Kwong’s *Aphasia* (2010), described by the author as “a character study of an anguished writer as he struggles to express himself” (<https://wiki.brown.edu/confluence/pages/>) – confronts both critic and interactor with the paradox of tangibility and the cruel logics of simulation, they present logical case studies for the application of presence-driven theories.

One generalization to be made about Cave pieces is that they foster a tactile impulse, despite the fact that tangibility is unachievable. What is more, there seems to be full awareness in both artists and interactors that erasure of tactility is the underlying threat keeping the literary communicative processes active and interesting. This is not to undermine habitual literary discussions on the “content” of VR literature, but simply to point out that these are self-reflexive *literary* objects designed to comment on modalities of mediation. Applicable here is David Bolter’s arguably recursive logic of *immediacy* (erasure)/*hypermediacy* (the tendency towards the exacerbation of technology). Put another way, immediacy, were it to fully succeed, could never occur without its counterpart, namely, hypermediacy: “virtual reality is immersive, which means it is a medium whose purpose is to disappear. This disappearing act, however, is made difficult by the apparatus that virtual media requires” (BOLTER & GRUSIN, 2000, p. 22).

On a final note, a hermeneutical reading of *Screen* would suggest that the piece’s demand for tactility is a metaphorical reflection on the theme of memory. By attempting to place words back in their original slots the interactor emulates the precarious and *cognitive* (virtual, indeed) act of remembrance. Only, because

²² I borrow the term from Caroline Jones, one of the contributors to the compilation *Sensorium: embodied experience and contemporary art* (2006). The publication is an accompanying piece to the homonymous exhibit.

6.3.

The Fabric of Our Lives: Ubiquitous Computing and Literary Communication

In their essay “Unfolding and Refolding Embodiment into the Landscape of Ubiquitous Computing,” theorists Lea Schick and Lone Malmborg offer a prognostic view of the body as a function of distributed and shared embodiment (SCHICK & MALMBORG, 2009). This idea is not new. In her much celebrated “Cyborg Manifesto,” Donna Harroway tackles cybernetic organisms, defining the cyborg as “a hybrid of machine and organism, a creature of social reality as well as a creature of fiction” (HARROWAY, 2003). In 1999 Hayles described the processes through which information had been extracted from solid material substrates to become a “free-floating [entity], unaffected by changes in context” (HAYLES, 1999, p. 19). In more recent research, Hayles proceeds to problematize such notions (HAYLES, 2008), but the fact remains that the posthuman view is informed by a desire to articulate “the complex interplays between embodied forms of subjectivity and arguments for disembodiment throughout the cybernetic tradition” (1999, p. 7). That which remains a challenge to the discipline of literary studies is the attempt to couple concepts of distributed cognition with rigid conceptions of literature. The emergence of new language-based sensory objects activates a scenario of shifted theoretical alternatives. I have stated that I see a clear affinity between Gumbrecht’s theories of presence and contemporary technological affective tendencies, particularly those manifest in immersive installations such as *Text Rain*, *Screen* and *Listening Post*. More mundanely, recent cultural trends in ubiquitous computing and calm technologies register a need to grapple with the neglected sphere of the body, to which Gumbrecht constantly alludes in his reflections on presence.

Newly formed computational contexts and practices call for newly formed structural and semantic frameworks of literary communication. Applying the conceptual repertoire he gathers from Actor-Network Theory (ANT) Jörgen Schäfer makes a relevant point about the analysis of literary processes in computer-based networks:

The different aspects of a recipient's activity with *Text Rain* or *Wasser* – the cognitive processes activated by reading or listening to the physical movements in space, the interaction with computer-generated graphic and acoustic 'language objects' – and the computer-controlled activities of the technical system show that in such computer-based media dispositives it is all the more necessary to focus our considerations on the investigation of the interaction of different human and non-human actors as hybrid socio-technical 'collectives.' (SCHÄFER, 2010, p. 41)

The notion of human actors being, for all intents and purposes, indiscernible from non-human devices happens to be in line with conceptions of shared embodiment and distributed cognitions. In a utopian, rarefied scenario, one would be able to unproblematically argue that both views require the dismantling of the fixed concept of the Cartesian subject – despite the manifest confluence of expedient schemas of distributed cognition and multiple versions of disembodied *res cogitans*. Insofar as embodiment is regarded as contingent instantiation of thought/information, it reinforces the Cartesian tradition (HAYLES, 1999). My intention being to recover the body, or at the very least to tangentially access paradigms of "data made flesh," I must overcome the usual disputes by stating that I partake in Hayles' dream of "a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality, that recognizes and celebrates finitude as a condition of human being (...)" (HAYLES, 1999, p. 5).

Whatever dreams (or techno-nightmares) one may nurture, there appears to be a consensus amongst cultural critics that a semantics of autonomy has been replaced by one of heterogeny: "people become posthuman because they think they are posthuman" (HAYLES, 1999, p. 6). Literature, however else defined, is a subset of cultural discourse, a socially constructed referential code acting in direct response to storage, transmission and reception media. With Schick and Malmberg, one could make a general inquiry about the implications of ubiquitous computing and "sensor-network technologies" to embodiment as both discursive practice and autonomous cultural phenomenon: "where does the body end and the technological environment begin?" (SCHICK & MALMBORG, 2009, p. 1). Their argument – largely premised on Hayles' groundbreaking research – leads to the conventional conclusion that as technology becomes pervasive, computers are engineered to understand, anticipate and alter user needs: "an unfolded body that

doesn't end at one's skin, but emerges as intercorporeality between bodies and the technological environment" (SCHICK & MALMBORG, 2009, p. 1).²³ As medium of both reflection and articulation of cultural phenomena, literature tends to move alongside such systemic activations.

The Depth of Walls

Complex notions of embodiment open many conceptual and theoretical doors in digital aesthetics, for they presuppose a "participative status" which may or may not refer to substance (presence). Installations such as Scott Snibbe's *Deep Walls*, where participants interact with their own shadows – captured through a mechanism that then replays them –, perfectly illustrate scenarios of expanded embodiment and altered "grammars of interaction" (SIMANOWSKI, 2011, manuscript). Snibbe describes *Deep Walls* as a "projected cabinet of cinematic memories" (SNIBBE, 2003). The artist derives his title from architect Christopher Alexander's *Pattern Language*: "in the spirit of Alexander, this work gradually remembers the contents of its environment upon its surface" (<http://www.snibbe.com/projects/interactive/deepwalls>). *Deep Walls* is part of Snibbe's "Screen Series" which operates through a computer mediation device (Ibid.). Projections are programmed to react to viewers as soon as they step in a pre-determined space between the retro-reflective screen and projector (Fig. 28).

²³ Citing Paul Dourish's 2001 *Where The Action Is: The Foundations of Embodied Interaction*, the authors argue that there are no distinctions between tangible and social computing; in fact, they are "aspects of the same program" (DOURISH apud SCHICK & MALMORG, 2009, p. 1). Suffice it to say that tangible computing (as conducted, for example, by Hiroshi Ishii and colleagues at the MIT Media Lab) is an area of research devoted to the study of how the interface can be shifted "off the screen" and into the real world, whereas "social computing is the attempt to incorporate sociological understandings into interface design" (DOURISH, 2001).²³ Though my point is not to dwell excessively on Dourish's research, I am interested in how he welds the two trends of his study (i.e., tangible and social computing) with the notion of embodiment, for by embodiment the author means not simply physical presence but, more generally, "a presence and participation in the world, real-time and real-space, here and now" (Ibid.).

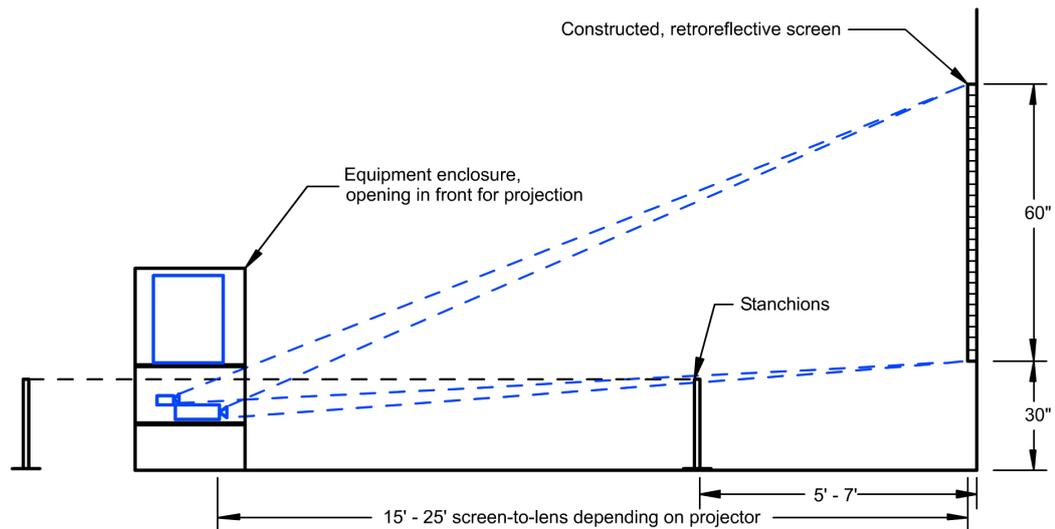


Fig 28. Diagram of *Deep Walls*, part of Snibbe's "Screen Series".

Each time a participant walks into the projection beam, the interactive wall records his silhouette. As the last interactor leaves the frame, all sixteen small screenic cabinets are activated to loop indefinitely. It is important to note that each short film produced is then replayed in the exact duration of its recording, thus generating a mosaic of asynchronous temporalities. Snibbe argues that the complexity of the temporal relationships between the sixteen frames is reminiscent of "structuralist films, the collection of repetitive videos [becoming] an object unto-itself, rather than strictly representational 'movie'" (SNIBBE, 2003). To be sure, the absence of verbal mark(er)s would place *Deep Walls* outside a distinctly literary analytical frame. Inasmuch as it recaptures the postulations of presence theory I have thus far addressed, it warrants a few observations.



Fig. 29. Image from Scott Snibbe's *Deep Walls*.

In his analysis of Snibbe's piece, Roberto Simanowski draws on Roland Barthes's theorization on photography – i.e., as the *here* and *now* that has, as a photograph, become a *there* and *then*.

In Deep Walls the *there-then* of the *moment* of recording becomes a *there-then* of the physical *result* of recording because every new person in front of the screen erases one of the prior recordings, even if she only *looks* at them. Looking is killing, to put it dramatically. (SIMANOWSKI, 2010(b), Media Transatlantic)

A typical hermeneutic reading of the installation would certainly suggest its theme to be the passage of time. The infinitesimal instant, recalcitrant to fixation, presents itself as a recurrent aporia in the history of philosophy – Augustine's tripartite model of temporal instantiation (*distentio animi*) constituting a superb example. That human traces are but tenuous imprints, vestiges susceptible to the rigid laws of transience – which photography relentlessly attempts to counter – remains a truism of cultural discourse. One need only refer to Susan Sontag's treatise on photography to be entirely reassured of the medium's irrevocable capacity to "touch" its objects with "pathos": "All photographs are *momento mori*. To take a photograph is to participate in another person's (or thing's) mortality, vulnerability, mutability" (SONTAG, 1973, p. 15).

One of the great epistemic challenges in the theorization of new media revolves around the extent to which embodiment – be it in the form of digitally

instantiated text, enhanced textiles, RFIDs (HAYLES, 2010), or interactive installations – affect our cognitive drive to make sense of the world. Schick and Malmborg hypothesize that in ubiquitous computing and sensor-network systems, “the interface is neither surface nor representation,” but a multiple interaction, a de facto integrative plane of technological effects and affects (SCHICK & MALMBORG, 2009).²⁴ As literary discourse realigns itself with digital topologies, the *literary* as a quality is once again re-coupled with mediality as its premise. Hence my earlier allusion to David Wellbery’s post-hermeneutical maxim: “mediality is the general condition within which, under specific circumstances, something like ‘poetry’ or ‘literature’ can take shape” (WELLBERY, 1990, p. xiii). To thematize the body in these altered discursive settings is, in essence, to pave the way for an alternate semantics of corporeality and world-appropriation. I previously mentioned the “hermeneutically induced” fear of a loss of the body, which would be offset by a saturation of technological trends and devices aimed at reenacting and enhancing sensory experiences – i.e., touch interfaces and intelligent surfaces. In this scenario it might be admissible to evoke a phenomenology of relations, thus implying a “synkinesthetic being in the world” (SCHICK & MALMBORG, 2009, p. 2).

²⁴ The authors refer to Gilles Deleuze’s reading of Spinoza’s concept of *affect*. In his 1978 *Lecture on Spinoza*, Deleuze criticizes the two French translations of the two terms employed in Spinoza’s *Ethics*. The first is *affectio* and the second *affectus*: “In Spinoza’s principal book, entitled *Ethics* and written in Latin, one finds two words: *affectio* and *affectus*. Some translators, quite strangely, translate both in the same way. This is a disaster. They translate both terms, *affectio* and *affectus*, as ‘affection.’ I call this a disaster because when a philosopher employs two words, it’s because in principle he has reason to, especially when French easily gives us two words which correspond rigorously to *affectio* and *affectus*, that is ‘affection’ for *affectio* and ‘affect’ for *affectus*. Some translators translate *affectio* as ‘affection’ and *affectus* as ‘feeling’ [sentiment], which is better than translating both by the same word, but I don’t see the necessity of having recourse to the word ‘feeling’ since French offers the word ‘affect.’ Thus when I use the word ‘affect’ it refers to Spinoza’s *affectus*, and when I say the word ‘affection,’ it refers to *affectio*” (DELEUZE, 1978 <http://www.webdeleuze.com.php/texte>). The importance of the distinction lies in the fact that affect (*affectus*) – non-representational in a manner akin to the logic of presence – ought to be differentiated from the word *idea* – defined precisely for its “representational character.” The principal distinction is not one between idea and effect but that between effect and affect. While the former is ruled according to the laws of causality – i.e., z performs action x and thus obtains an outcome y –, the latter partakes of the indeterminate and indeed intractable dimension of life. In Deleuzian terms, affects are becomings, they are processes, not static entities (DELEUZE, 1978). Recast in terms of our current discussion, affects can be regarded as successive productions of presence.

6.4.

Concluding Remarks: Open Endings and Statistical Virtuositities

Context-based performance pieces such as Mark Hensen and Ben Rubin's *Listening Post* (2003) quite beautifully invoke the conflicting affective and material complexities I have thus far been addressing. *Listening Post* is an immersive installation which utilizes natural-language processing algorithms and a commercial text-to-speech (TTS) engine to parse and synthesize snippets of online conversations culled in real-time from unrestricted chat rooms, bulletin boards and online forums. The data stream collected (text) is simultaneously relayed in varying visual patterns across a suspended array of vacuum fluorescent chain-circuit displays (HANSEN & RUBIN, 2002). Apart from a two-hour delay, the piece, currently on exhibition at the London Museum of Science, happens in real time. As in *Text Rain*, to describe – or even “accurately” record – the interactor's experience in *Listening Post* is an approximation effort at best. As the words are spoken, greenish-turquoise neon lights each one of the 231 suspended vacuum fluorescent circuit displays (VFD). A statistical analysis server selects particular phrases to be scrolled across the suspended grid.

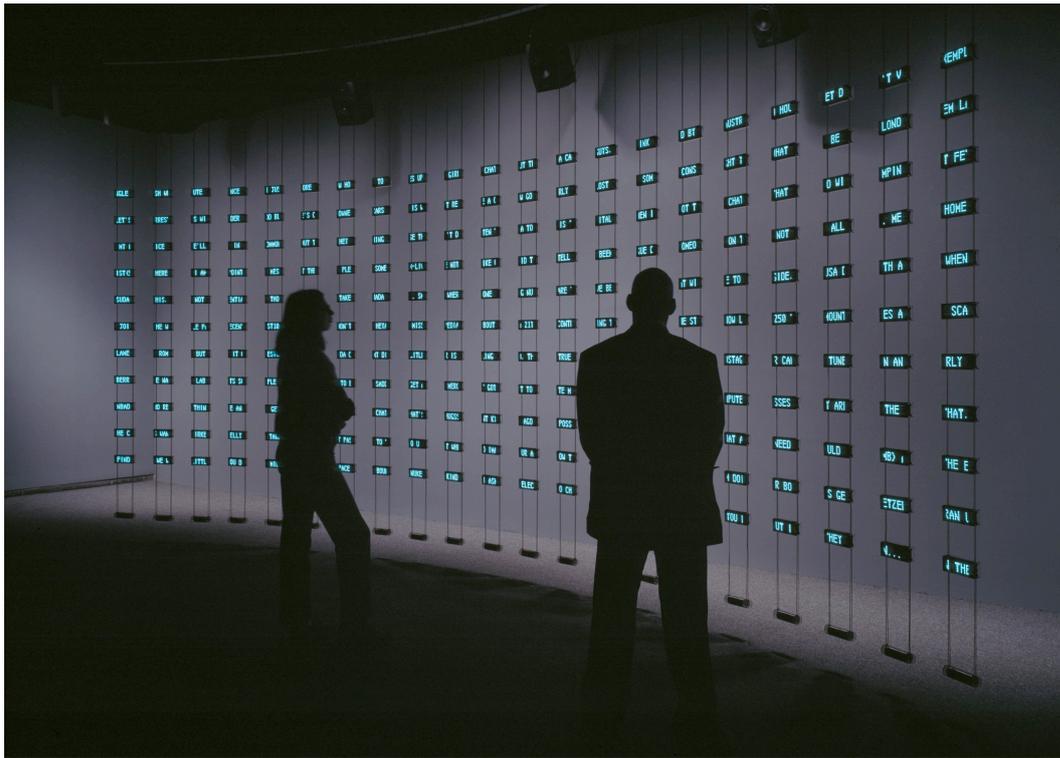


Fig. 30. Still image from Ben Rubin and Mark Hasen's *Listening Post*.

Despite the incontrovertible presence of obtrusive technological apparatus in its conception and presentation (close-circuitry resembling surveillance posts and green-on-black DOS character sets), the experience of *Listening Post* requires an extemporal (albeit intellectually problematic) “being there,” a premise common to all performance art.²⁵ With Christiane Paul one might argue that from a historical art perspective, the strong instruction-based nature of new media art displays traces of previous movements such as Dada and Fluxus. More importantly, “from the macrocosm of cultural practice to the microcosm of an individual artwork, the (immaterial) links between materialities are at the core of digital media” (PAUL, 2007, p. 252). As the focus of this subchapter lies in the epistemic integration of theories of presence with the “flickering” ontology of digital literature, I shall refrain from the debate revolving around preservation and storage of new media literature and art in general. With specific regards to literary objects, I side with Katherine Hayles as she suggests that the interaction of

²⁵ In this regard, insofar as performance can be defined as a time-inscribed moment of reception, I subscribe to Zumthor's distinction between “text” and “work”: “On the one hand, text is a unified linguistic sequence whose overall meaning cannot be reduced to the sum of particular effects of meaning evoked by the sequential parts of the text. On the other hand, work is what is poetically communicated (text, sounds, rhythms, optical elements). The term includes the totality of performance characteristics” (ZUMTHOR, 1988, p. 220).

body and machine gives rise to intermediating dynamics between them. Consequently our cultural moment imposes a framework wherein “digital literature can be understood as creating recursive feedback loops among embodied practice, tacit knowledge, and explicit articulation” (HAYLES, 2008, p. 131). As a rhetorical and methodological stratagem whose sole purpose is to redirect the argument to the issue of production of presence as it relates to digital literature, I will resort to Zumthor’s definition of performance as a larger poetic time-inscribed moment of reception and posit that *Listening Post* constitutes something of a magnificently virtuosic example of digital literature/performance art/immersive installation. Ben Rubin and Mark Hansen’s work repels consensual readings and invite conceptual and aesthetical analyses informed by theories of difference.

In *Listening Post*, the premise is deceptively uncomplicated: what would 100,000 people chatting online look and sound like? When commissioned by Bell Laboratories to provide a snapshot of the Internet, statistician and media theorist Mark Hansen and sound artist Ben Rubin may have been given as colossal a task as the subject of their depiction. In a paper entitled “Listening Post: Giving Voice to Online Communication,” included in the proceedings of the 2002 International Conference on Auditory Display, Kyoto, the authors write:

While it is beyond our capabilities to grasp the millions of simultaneous transactions taking place on the Internet, it is of compelling human interest to make sense of such environments in the large, to grasp the rhythms of our combined activities, of our comings and goings. Our inability to orient ourselves or otherwise fully perceive a larger environment is not a phenomenon unique to the virtual world. As communication and transportation technologies accelerate our movements and interactions, the spaces we live in are receding from our ability to directly sense them. (HANSEN & RUBIN, 2002, p. 2)

The authors’ challenge is reminiscent of the Borgesian unconscionable cartographic allegory: a map so perfectly detailed that it would cover up the entirety of the territory it was meant to depict. Hansen and Rubin’s option to privilege aesthetics over mimetic “accuracy” proved to be significantly more clever than the alternative. The authors offer a captivating rendition of what it might be like to partake in these cyberspatial realities and, in the process, successfully tackle the multiple semiotic implications and epistemological difficulties embedded therein. *Listening Post* is not nor is meant to be a

“realistic” representation of 100,000 people chatting. Rather, as theorist Rita Raley posits in her excellent reading of the work, “the piece utilizes natural-language processing algorithms to parse, filter, and *re-present* their chat messages” (RALEY, 2010, p. 24). For our purposes, emphasis should fall on the verb *re-present* – here recast in accordance with Gumbrecht’s schematics: as in, to *make present again in a tangible fashion* as opposed to symbolic representations of an absent entity (GUMBRECHT, 2002).

The preoccupation of the creators of *Listening Post* with “making sense” might appear naïve in the grand scheme of epistemological discussions. However, the artwork itself is anything but simplistic, and may be viewed as a sonic-imagetic allegory of Web (mis)communication. To once again resort to Luhmann’s recursive communicative framework: if society is to be conceived of as a social system that consists solely of communications, then it can only reproduce communications by means of communication. In this sense, it could be asserted that all other non-communicative conditions – chief among them, human consciousness – belong to the system’s environment (*Umwelt*). This is not to undermine the importance of the environment, but simply to reiterate that since communication rests on a contained difference between information and utterance, then it is inherently contingent (LUHMANN, 1986). Nowhere is this contingency more blatant than in the second movement²⁶ of *Listening Post*. There, one is confronted with a synthesized TTS (text-to-speech) engine, which speaks out – in algorithmically parsed vocal cadence and piano accompaniment – serializations of the pronoun “I.” At this point, the interactor’s semiotic functions are galvanized in conjunction with rhythmic responses to the poetic trope of repetition.

In several instances during the course of the installation, the sheer speed of scrolling text and constant breaks with Western print conventions give rise to issues of legibility – illegible text presented as “post-alphabetic” objects – as both Raley and Simanowski astutely point out in their readings of Ben Rubin and Mark

²⁶ I borrow the term from Rita Raley’s reading of Ben Rubin and Mark Hansen’s piece. Equating the algorithmic structuring of *Listening Post* to those of symphonies and Gregorian chants, Raley speaks of movements rather than sterile “parts”: “The installation is divided into seven movements or scenes: seven sets of display algorithms structure the individual movements of the piece, filtering and organizing data so as to allow for the discovery and presentation of different patterns, signals rather than noise. While the dominant sensorial quality of the first six scenes alternates between the visual and the aural, the last culminates in an operatic synthesis of image and sound, textual script, and musical score” (RALEY, 2009, p. 24).

Hansen's work. (RALEY, 2009; SIMANOWSKI, 2011). In the celebrated "I" movement, however, something entirely different occurs as snippets culled from open chat rooms are read and "sung" back to the spectator with cadence remnant of what Raley hears as (what I can only assume to be monophonic) Gregorian chant (RALEY, 2009, p. 26).

I am
 I am
 I
 I am
 I am of
 I am 18
 I am
 I am nice
 I am 26
 (Rayley's sample)

Rubin and Hansen recall that in an early public performance at The Kitchen in New York City (April, 2001), they experimented with data gathered from 50 forums. Attempting to synthesize four simultaneous voices (reading content from different forums), the authors noted that intelligibility was drastically improved if they assigned each voice to a separate speaker placed in the four corners of the performance space (separated by 30 feet):

As expected, spatial separation seemed to improve the listeners' ability to understand what was being said. We made further gains by assigning different pitches to voices from different speakers. Subjectively, we also found that monotone or chanting voices were easier to separate, and provided a more cohesive mix. (RUBIN & HANSEN, 2002, p. 2)

As a culturally-specific object, *Listening Post* can be construed as an audio-immersive-literary response to the contemporary experience of visual/sensory overload. In their refusal to reduce representation to synthesis, the artists grapple with the complexity of the very postmodern feeling of loss of solid ground, educated, no doubt, by conflicting modes of self-description: "The question is no longer 'what should I be?' but rather 'how should I be?'" – Luhmann writes (LUHMANN, 1998, p. 7). *Listening Post* is not simply a repository of digitally-encoded aural footprints left by thousands of lonely souls and extending throughout the limitless void of cyberspace: it is an attempt to express the

paradoxical experience of being alone in a crowd.²⁷ The intermittent beeping accompanying the algorithmically generated piano music in the “I” movement – which, incidentally, is designed to sort out phrases according to length and topical parameters – adds cadence and harmony to the synthesizer’s utterances, thereby conveying something of a communal heartbeat monitor. Even from a video recording of *Listening Post*, one has the sense of immense pile of lives lived in the communal loneliness of the Web chat rooms. Asynchronous slices of real time gathered in both unison and dissonance – utterances raised to the level of information and disguised as art. Or is it the opposite? As if they warranted such emphasis, as if they solicited such attention. “Words after speech, [no longer] reach into the silence,” as the poet T. S. Eliot once wrote. Instead, they linger – as sound waves do –, forever reverberating in this most peculiar of postmodern cathedrals. As was the case in *Text Rain*, computer-based processes of literary communication oscillate in intermittent patterns of (textual) instantiation. The result is thus the interplay of embodied sensory affects (productions of presence) and disembodied semantic mediation (meaning attributions). Is it that contingency (indeterminacy) is greater now? We should keep open channels and restless minds.

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²⁷ Cf. Raley: Referring to Elias Canetti’s *Crowds and Power*, Raley structures a significant portion of her argument around the distinction between crowd and public.

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