Think with the whole body.
FERTILE SYNTHESIS:
EMOTION IN ONLINE DIGITAL POETRY

by

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ABSTRACT

Computation and networking are changing language, the art of reading, and the act of writing. Multimedia digital poetry allows for the creation and simultaneous display of visual, sonic and textual patterns with unprecedented mobility and typographic capacities. This interdisciplinary form encourages an exploratory art-research practice-based investigation using a blend of theoretical knowledge ranging from literary criticism, aesthetics, affective computation and neurological research. In contrast to software-centric theory and/or materiality analysis, this thesis argues for the continuing relevance of the lyric, expressive affect and aesthetics in contemporary digital poetics. It examines the evolution of digital poetry with a specific emphasis on online poetry. In the context of this thesis, poetry is considered an ancestor of computer code. Poetry is also considered as information visualization of emotions. Emotions are considered to be complex embodied patterns; poetry expresses those patterns in language.

Keywords: digital poetics; art-research; web-art; affective computation

Subject Terms: Poetry Computer Network Resources; Art And Technology; Art and the Internet; Digital Poetics
DEDICATION

For S.J. who knows who she is....
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GLOSSARY

Affect
basically synonymous with emotion in my usage. Affect is a term from psychology brought to general contemporary usage by many but prominently by Silvan Tomkins in the 1950s who asked the question: "Could one design a truly humanoid machine?" Tomkins understands the "affect mechanism as a separate but amplifying co-assembly" which means he sees its role as a booster, a wave augmenter-damper in the brain. Affect is seen as a necessary aspect of cognitive decision-making in lesion studies (Damasio 1998, 2000). In post-modern philosophy, affect refers generally to a wide range of embodied experiences from the primal to the sublime. My view is a hybrid of all the others, affect fuses with physical reality: it recursively sets the valence of each particle's approach to phenomena. Crucial readings to which I am endebted: Affective Computation, Rosalind Picard; Affective Neuroscience, Jaak Panksepp; Antonio Damasio, Silvan Tomkins, and Gaston Bachelard (whose aesthetic sensitivities offsets other more scientific approaches).

Concrete Poetry
From Concrete to Visual Poetry, With a Glance into the Electronic Future. Klaus Peter Dencker. 2000. http://www.thing.net/~grist/l&amp;d/dencker/denckere.htm "Concrete poetry got its name at the beginning of the 1950s. It is a language art form that is closed, international, and non-mimetic, proceeding from the material qualities of language: from the verbal, sound, and visual materiality of words. The graphic forms of single letters, the white space of the book page, the constellation of letters vis-à-vis one another, the change of reading habits, the combinatory possibilities of letters and words on a surface, the ignoring of syntax and metaphor, the free play with language material that simultaneously goes against the literalness of language-this calls for a wholly new reception attitude on the reader's part. No customary left-right reading will work, no usual sentences, no given sequencing, not even words that had once been complete-the reader must himself become productive, discover constellations, determine double meanings of words, develop his own history with the language material being offered."

ELO
Electronic Literature Organization

Language
I agree with Walter Benjamin "There is no event or thing in either animate or inanimate nature that does not in some way partake of language, for it is in the nature of all to communicate their meanings...we cannot imagine a lack of language in anything." (Benjamin 1997. 107). Linguists (notably Chomsky) argue that such inclusiveness trivializes language; they preserve language for a more human-centric system of codified communication. For me exactly the opposite is true, language is immanent in matter. Matter is language. Humans hold no exclusivity. Benjamin ends up somewhere in between me and Chomsky, he claims that what makes human language unique is naming. I feel naming is ubiquitous.
Materiality  Study of the effects of the medium on communication. Poetry is often cited as a discipline concerned with materiality of language. Materiality is the focal point of much digital poetic literary criticism because materiality also explores the medium: the computer, code, and hardware. Materiality also emerged to offset the association of computer code with immateriality (due to its association with the 'virtual').

OULIPO  "Oulipo stands for Ouvroir de littérature potentielle, which translates roughly as workshop of potential literature" (Wikipedia). From 1960 to the present, OULIPO have practiced some very complex algorithmic composition techniques. See Thesis GTR Rewrite MASHUPS for their contemporary software kin.

"The Complimentary Nature introduces a new meaning and application of the tilde, or squiggle character (~), as in yin-yang, body–mind, individual–collective." (Kelso, Engstrom. 2006. xiv)
CHAPTER 1:
INTRODUCTION

1.1 Outline of the Problem Domain

In order to contextualize contemporary transitions that are occurring as language and literature becomes predominantly digital, in the first half of this thesis I review the critical literature concerning language, technology and affect. Emphasis will be placed on visual language since computation offers typographic innovations that naturally lead toward visual language. Visual language has a long history of innovators and innovations that extends from antiquity into digital culture, so a thorough treatment is beyond the scope of this essay. However, key elements will be considered in order to understand how language functions. The relevance of synaesthesia for understanding visual language is one key. Another key is emotion. What are emotions? In this thesis, emotions are patterns. What is poetry? Patterned language. A redefinition of poetry is proposed that connects it to the core of computation and emotions: poetry is information visualization of emotions.

The lyric is a term referring to an expressive emotional poetic form. I will argue that a substantial space exists for the exploration of lyric and mythological artistic practice in digital poetry. The metabolism of humanity, our neurological inheritance, is tuned to feed on lyric and myth that transduces emotion and cosmological questioning into language. Incorporating these venerable traditions into contemporary net-art constitutes an enormous opportunity for a digital poetry.

1.2 Practise-Based Considerations

"...the words we need will come of themselves. When the words we want to use shoot up of themselves – we get a new song" Orpingalik (Orpingalik cited in Rothernberg and Joris 1998. 735).

Art-research is a nascent domain. Therefore, this thesis considers the creative process, intuition and artistic practice of digital poetry. Largely, this material emerges from an

art-research process; it arises from my own experience, and is reflective of my own insights and biases. This experience is not widely generalizable, but is considered a valid representation of a niche practice.

In this thesis, I develop and advocate an argument for the continued inclusion of intuitive process within the academic community. I advance grounds for the epistemological nature of images and build this ground on a vision of knowledge as fluid and contextual. In addition, I contextualize these claims within a descriptive and theoretical exploration of several online digital art-research projects created during the course of my studies.

These online digital poetry projects demonstrate an ongoing concern with emotional content in a technological context. They approach ancient traditional themes of love and death and consciousness, incorporate video and sound, and deconstruct the traditional notions of linearity, stanza-based metre and other features of classical poetry. In addition, several online tools [Noteshuffler, Arbitrator] act as fulcrums to provoke and focus discussion of issues around reading and writing. How are reading and writing evolving? The flexible capacity of online environments to animate, analyze and display language opens and suggests unprecedented theoretical and practical opportunities.

1.3 Motivation: Embodied Readers

Poetics and literary criticism are the parents of contemporary digital poetics theories; the history of these fields can be seen as ecosystems of oscillatory ideologies. Extremely divergent opinions exist about what constitutes correct methodology. Theories most often argue claims about emphasis: what is most important? text? reader? technology (materiality)? The current focus of a vast proportion of the academic theoreticians is on the materiality of the text; materiality in contemporary usage is synonymous with technology, code, software, bits, and discussions of networks. I conceive of this thesis

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2 Soot, Interstitital, Thoems, and Teleport, are accessible through my website: http://www.glia.ca
3 Noteshuffler (a reading writing tool) and Arbitrator (a group schedule arbitrator) are also accessible through my website http://www.glia.ca. In addition, Meanderings.org is a list of over (700+) websites of interest (predominantly related around the theme of digital literature or new media art) collected during the research for this thesis [http://www.meanderings.org]. In the final section of this thesis I discuss how Meanderings.org represents an empirical challenge to paper bibliographies, how reading has become skimming, how assimilation of network knowledge is akin to the tasting of rain: collisions, tangents and associative leaps.
4 Theoretically, I suggest grounds for extending Ong's concept of 'secondary orality' (electronics, tv, radio) into 'tertiary orality' (internet, social network software, and wikipedia).
as an appeal for an inclusion of the reader’s emotional interpretive structure as an aspect of analysis: a re-inclusion of the reader’s body into the dynamic of digital poetry.

As for digital poetics, the focus of a great deal of the current digital poetic research is on developing generative algorithms for writing literature with code; my own research is only tangentially concerned with that research direction. I am not interested in game or competitive interfaces; my research focuses on play, awareness, intimacy and visceral emotion expressed digitally. I am investigating how text, images, video and sound can simultaneously display and dynamically remix in online contexts. To this end, all of the project work incorporates imagery and sound. My projects operate as an alternative and complement to formalistic digital-poetry experiments which investigate the materiality of the media (such as those capably practiced by poet-programmer-scholars affiliated with the Electronic Poetry Centre: Loss Pequeño Glazier, Tallon Memmot, Nick Montfort, John Cayley, Jim Andrews, and N. Katherine Hayles among numerous others...). I advocate the continued relevance of a sensual online poetics that is computationally competent, privileges aesthetics over formal concerns, is aware of the embodied reader, engages all the senses not just the linguistic faculty, and deals with traditional poetic themes of love and death.

1.4 Approach: Topological Epistemology Eco-Systems

"logical topography ... involves not just exploring the connections in existing usage, but exploring the variety of possible concepts that can be defined in connection with the subject matter that is being investigated ..." Aaron Sloman (Sloman. 2007).

I conceive of knowledge as a landscape and theories as neighbours. I do not believe in the necessity of defending ideas; and I believe that approaches to epistemology can have political implications. In this ontology, ideas are living; they may have differing validity dependent upon the viewpoint but that does not alter their status or right to exist. Evidently, there are limits to this attitude; I am not advocating an empirical absolute relativity; and I do not accept as true everything that occurs within my own mind. However, I do feel strongly that the current academic emphasis on establishing a tiny

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5 See the Appendix on GTR Thesis Mashup for an example of how powerful algorithmic composition tools are becoming.
6 Other thinkers have used the phrase "epistemological topography" – Vetter 2006. and Mann 1995. And after writing this paragraph I encountered Aaron Sloman’s online-in-process essay ‘Logical Geography and Topology’ (Sloman 2007) which refers to the “continuum of possibilities” offered by conceptual domains. What I am suggesting differs from Sloman’s concept in advancing a notion of the terrain as a dynamic, and drawing an analogy between truth-validity and survival.
point in a domain and defending it constitutes only one approach to knowledge creation. Contradictory epistemological systems from my viewpoint can and do co-exist. This thesis should be considered a contribution to the epistemological ecosystem that is flourishing around digital poetics.

1.5 Practice: Exploratory Art-Research

"Poetry is a breathing hole in the ice of our identity" Robert Bringhurst (Bringhurst 2006. 312).

Any research into digital poetics is inevitably subjective and speculative: even more so when the stated focus is on emotion. Exploratory research with a practice-based art-research component risks being perceived as entirely un-sound and un-valid. In order to offset this structural weakness, I have tried throughout the thesis to find corroborative references for my claims. This has involved extensive cross-disciplinary investigations. Thus, many of the references come from a wide interdisciplinary swath encompassing cognitive science, neuroscience, information design, and affective computation. Wherever possible I have tried to delineate clearly what constitutes my opinion, and what constitutes a shared fact.

1.6 Ontology: Everything is Conscious

"We do very good work when we don’t know what we are doing" John Cage (Cage 1978).

I want to state briefly my fundamental approach as an artist and researcher by drawing an analogy between reading and research. Psychoanalytic literary theory recognizes that "each of us reads with a certain style", an "identity theme" (Holland 1973. 62). An investigation into reading is therefore an investigation into the reader. The act of reading can include how humans interpret and read reality. Similarly, research is reflective of the researcher. In the last 20 years, my art-research practice can be seen as an outgrowth of my own idiosyncratic reading of reality which gave birth to two axioms: Looking out is looking in and Everything is conscious (Jhave 1990). These foundational axioms constitute the implicit ontology that continues to guide my life and my research into the synthesis of visual and textual art forms in digital interfaces. From a quantifiable scientific level, these are un-validatable assertions. However, in the art-

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7 That said, I do attempt to satisfy normal academic constraints in this thesis.
8 I also consider art to be most art when artist is mere conduit: the meta-objectivity of matter is an implicit thread in the subtext of my practice.
9 Originally self-published in a chapbook: Prosthetic Philosophy and Other Ritual Routines
research works discussed in this thesis, -- the flocking behavior of particle systems, the videos and photos of small marginalized ephemeral subjects, the themes of death and vulnerability, -- somehow all relate to my innate cosmological attitudes.\textsuperscript{10} I feel that internal patterns of the emotional mind are physical systems that visually sonically and linguistically resonate and are resonated by language (both sonic, visual and textual). Guided by these axioms, I am working to artistically and empirically explore the region where ontology and epistemology overlap.

1.7 Intention : The Ethics of Aesthetics

“Beauty – however we conceive of it (but we always recognize it) is a way toward accessing ethical values” Breyten Breytenbach (Breytenbach 2007).

There is much emphasis in academia on \textit{methodology}. Equal implicit status in this thesis will be given to \textit{intention}. I believe with Bill Viola that artists "detoxify and transform" technology. “Anything that emerges out of our selves from a genuine unguarded space is ultimately a sacred act“ (Viola 2006)\textsuperscript{11}.

1.8 Disclaimer: Syncretic Meandering Ahead

“The artist is prepared to look anywhere, into any discipline, scientific or spiritual, any view of the world. There is no meta-language or meta-system that places one discipline or world-view automatically above all others. Syncretic transdisciplinarity informs artistic research at all levels. This is why we look in all directions for inspiration and understanding: to the East as well as the West; the left hand path as well as the right; working with both reason and intuition, sense and nonsense, subtlety and sensibility" Roy Ascott\textsuperscript{12}, “Syncretic Warning” UCLA (Ascott 2007).

This thesis is a syncretic\textsuperscript{13} object emerging from sustained academic and internet meanderings. Meanderings may seem very inappropriate in an academic context; it will be seen by some of my colleagues as not conforming to conventional models of what constitutes research; however, as Ascott stresses, in this era, “the enemy is \textit{habit}” (Ascott 2007). Given the unprecedented dense proliferation of online knowledge which intersects on the question of digital poetics (consciousness, language, multimedia), I

\textsuperscript{10} For a fuller discussion of these issues see Appendix: Panpsychism
\textsuperscript{11} Viola continues: "...it is up to the artist to understand the inner technology of their own thought, and make sure it's as pure and honest and direct as it can be..." (Viola 2006)
\textsuperscript{12} Roy Ascott is founding president of the Planetary Collegium, with its hub in the University of Plymouth, England, and research nodes in South America, Europe and Asia. His research is into art, technology and consciousness.
\textsuperscript{13} Syncretic “thinking is associative and non-linear...the etymology of syncretic is from \textit{sun-kretismos} derived from the coming together of the ancient Cretans.” (Ascott 2007)
have adopted an unconventional methodology of meandering\textsuperscript{14}. The meandering is
guided by a formal concern with language. How is language fusing, conjoining and
genetically splicing its way into digital representations? What is being built by anyone
out in the world using computers and language? I begin from the premise that every
initiative into visual language constitutes an investigation of digital poetics; I do not
exclude pop culture, advertisements, or social network sites. Every site is a research
site; digital poetry is not confined to an elite either culturally or academically. So the
research is anthropological, omnivorous and transdisciplinary. It relies upon
Apophenia: "the spontaneous perception of connections and meaningfulness of
unrelated phenomena" (Ascott 2007). Ascott sees this approach leading to results
unanticipated by reason; he suggests that we are living in a post digital culture. Thus
the research is into moisture, dissolution, change, and the sublime. It is aesthetic
research. Why is beauty beautiful? What new forms and species of mutant language-
image vispo\textsuperscript{15} are emerging online?

As my contributions to the digital poetic genre, I have built several prototypes of
potential trajectories. I consider these art-works to be perforations in space-time, ways
that the inanimate is given voice and the emotional world of humanity is assimilated
into binary contexts. I consider the art-works research into psyche (soul), a term which
Ascott (2007) suggests is forbidden in academic concepts. This thesis is therefore (very
clearly) not traditional or pure science; it is art-research and applied design science that
allows intuition an active role in the organization of its development.

\textsuperscript{14} Internet meandering is made increasingly fertile through web 2.0 tools which permit intelligent
topic-constrained choices based on the user’s previous likes or dislikes. Example:
It can be seen as a relative of Guy Debord’s concept of the derive: drifting.

\textsuperscript{15} Vispo: VISual Poetics is one term that is used to refer to visual language. See Jim Andrews
vispo.com
CHAPTER 2:
LITERATURE REVIEW

In the literature review that follows, I attempt with each theorist to outline the major thrust of their theoretical enquiry and discuss briefly how their enquiry relates to questions of affect and aesthetics in digital poetics. In each case, I situate my reading of the text from the perspective of how theoretical insights can lead to more effective art-research practice. Since my research is primarily into multimedia non-narrative forms, the bulk of this survey begins after the hypertext theorist Espen Aarseth introduced (1997) the concepts of cybertext, and ergodic literature (ergodic refers to the difficulty of reading, the extra effort expected of the hypertext reader). I also do not look at the seminal and important special issue of the journal Visible Language “New media poetry: poetic innovation and new technologies” which was published in 1996. Many of the arguments there are specific to innovative practices (such as the holographic poetry Eduardo Kac) or focus extensively on hypertext that is not directly relevant to my focus on online multimedia poetics. However, in order to have some sort of historical perspective, the opening section contextualizes digital poetics within a broad overview of 20th century poetic schools.

2.1 Major Analog Poetic ‘Schools’ or ‘Movements’

“Experimentation in new forms of prose, collaboration, proceduralism, and collage have diminished the role of the lyric subject in favour of a relatively neutral voice (or multiple voices)...the instrumental function of language is diminished and the objective character of words foregrounded...language poetry has made its horizon the material form rationality takes” (Michael Davidson as cited by Rothenberg, Joris. 1995. 663).

Poetry has a long history of vigorous experimentation. Because it exists at the periphery of society (and at the centre of language in its self-conception), poetry is free to explore formal terrain that is not normally explored by prose: typographic experimentation, sound, text-image fusions. This experimentation naturally leads to theory: why does poetic symbolism occur? What does it mean? How is it integrated with media? Innumerable analog (print) poetic movements have contributed or anticipated to varying degrees the emergence of theoretical concerns active in contemporary digital poetics.
The Dadaists, Surrealists, Lettristes, Futurists, Concrete poets, L=N=G=U=A=G=E (LANGUAGE), and OULIPO movements have each, in their own way, provoked radical recalibrations of the page, text and semantics. The Lettristes and Concrete poets created vivid visual knots of text, which are ancestors of the current developments in 3D text display and dynamic mobile text. The LANGUAGE poets posited engaged texts that dealt with the materiality of language as technology, anticipating the current dominant theoretical paradigm of digital poetics. The OULIPO group whose systems of analog writing constraints constituted a sustained engagement with generative algorithmic literature anticipated algorithmic poetry (on a computer).

My own practice finds some degree of affinity with the views expressed by a marginal splinter group loosely aligned under the title of Post-Language poets (Wallace 2000) who advocate poetry disengaged from formal theoretic enquiry, a poetry that evolves according to the inclination and tendencies of the artist instead of a set of systematic ideological forms. Theory, if it occurs, may occur after the creation; during creation, aesthetic, design and content issues are in the foreground. In the digital poetic realm, the online works at Born Magazine reflect this aesthetic foregrounding.

In order to form a foundation from which to situate digital poetic work that does not initiate from a theoretical foundation, the following literature review section will explore theorists and theories that have evolved around poetic language in computational contexts. By understanding the strengths and perspectives of diverse theoretical approaches to digital poetics, it will become possible to identify the gap that my research explores.

2.2 Literature Review: Digital Poetic Theorists

Any literature review of theory concerned with digital poetry can offer insight into only some of the dominant threads of theoretical concern; even a marginal domain (such as digital poetics) comprises a deviously thick, resilient and feverishly growing ecosystem

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16 See the section on Chatonsky for an example of how digital poetics can emulate the style of Language poets. (L'attente, the waiting / Flussgeist 1 (2007) Gregory Chatonsky)
17 Generative literature is 'generated' rule-based creation of language works.
18 "...literature is too multi-faceted, rambunctious, and iconoclastic to fit the limits of any definition... Literary theory does continue to be a central part of the practice of many postlanguage poets, yet they tend to undertake it with an ambivalent and often wearied eye...." (Wallace 2000). As one can imagine (given their attitude and the preponderance of theory in academic discourse) the PostLanguage poets have had a marginal impact on the marginal field of poetry.
19 Born Magazine is discussed in the Digital Language Practitioners chapter of this document.
of ideas which prevents a fixed and stable sense of comprehensive knowledge. In the following, therefore, I focus only on theorists, who have consistently published in academic contexts over the previous decade, who are widely recognized by their peers, and who have consistent focused on digital poetics. I trace the outline of these seminal figures in the theoretical field and establish my relation to their ideas.\(^20\)

Due to the marginal nature of the digital poetics field, many of the major figures may not be known outside the domain, so footnote biographies are included to place key theorists in context.

### 2.2.1 The Materiality of Johanna Drucker: Figuring The Word

"Whipped by the hot lash of illogic, the unneat and indecorous aspects of language wiggle free from their bonds clamouring for their right to be recognized within that universe of sense which is not all common sense or intractable systemic logic but is also stuff and non-sense -the information of sensation, of space, of material – crying in the dull-brained electronic universe to be heard" (Drucker 1998. 218).

One of the most lucid prolific practitioner-theorists in the field of visual language, design, digital poetics, and materiality is Johanna Drucker.\(^21\) Materiality plays a major role in her (and other) contemporary digital poetics theory. The roots of Drucker’s concern with materiality can be traced through media theorists Eric Havelock, Marshall McLuhan, and Walter J. Ong to the Language poets and literary theorists Charles Bernstein, Susan Howe, Jerome McGann, and Marjorie Perloff. In a 1982 essay *Electronic Media and the Status of Writing*, on "the impact of electronic technology on the traditional cultural functions of writing" (Drucker 1998. 236), Drucker develops an argument for the influence of the materiality of a medium on the generation of meaning. "The idea that information resides in the so-called lexical value, independent of any medium, I consider to be fundamentally incorrect" (Drucker 1998. 232).

\(^{20}\) In all theoretical domains, ideas swiftly coalesce into ideologies; ideologies leverage authority. By listing these ideas I do not claim to advocate them, instead the list is intended to catalogue my epistemological family who are scrutinizing this strange teeming organism known as language as it is digested by an emerging cyborg network of animation tools.

\(^{21}\) "Johanna Drucker is the Robertson Professor of Media Studies and was the first director of the Media Studies program which she created at the University of Virginia on arrival in 1999. She has a PhD in Ecriture (University of California, Berkeley, 1986) and has been on the faculty of Yale University, Columbia University, the University of Texas at Dallas, State University of New York at Purchase, and Harvard University where she taught art history, theory, and practice. Her publications have been in the field of 20th-century art history, the history of writing and the alphabet, artists’ books, experimental typography, and visual and concrete poetry." (Retrieved from her website http://people.virginia.edu/~jrd88c/ on May 12, 2007)
Her 1994 essay *The Future of Writing* extends this argument to recognize that the influence of materiality is a fluctuating variable: "The 'information' quotient of the material can vary from negligible to highly significant" (Drucker 1998. 221). I agree that the medium will invariably have some effect on the meaning. To draw a analogy, if we consider meaning to be water and the medium to be a pipe, then an optimum transport pipe-medium will simply transport the water-meaning without contaminating it. However, many theorists (including Drucker) might challenge the idea of optimum media being synonymous with non-contaminating, since materiality often nourishes meaning.

Drucker's approach to materiality grows increasingly nuanced. In a 1996 presentation *Language as Information: Intimations of Immateriality*, Drucker begins by referring to "My old favourite topic—the materiality of signification—describes the ways in which material substrates and visual/typographic/written (and by extension, verbal) styles encode history, identity, and cultural value at the primary level of the mark/letter/physical support" (Drucker 1998. 213). Drucker then continues to extend materiality from medieval manuscripts to new media design and into artificial intelligence's concern with language as information. She outlines an intellectual continuum informed by a materiality of language from Boole's logic to Turing and VonNeumann. A point of concern for Drucker is the dilution of the materiality of language in electronic environments, the collision of human illogic with digital logic, and the subsequent impoverishment of embodied information (Drucker 1998. 218).

The loss of tactility, spatial representation and codified information that are specific to print culture are aspects of what Drucker feels might be lost in the transition to electronic culture. The impassioned "primal urgency" of Artaud (Drucker 1998, 219) might get obscured in the transition. Drucker's insights arise from examining how information is transcribed within computers. From that level—in the way information is transcribed --, the messy gestural processes of emotion seem threatened by the tight logical clarity of digital storage. Since Drucker expressed these concerns in 1998, her current views given the expansive multimedia capacities of the software may have shifted.
However, in my view, the urgency of Antonin Artaud\textsuperscript{22} (to continue with Drucker's example) came from his capacity to put his passion into words; I would argue that to a large degree it is the content (lexical value) of his words, which delivers their affective impact, not considerations of lead typeset processes, book-binding or pagination. Artaud's words are a visceral scrawl-scream; their efficacy arises from their authentic energy. If we accept that emotion arises from lexical value, then authentic affect is not imperiled by the transition to different media. As long as attentiveness to the new expressive potentialities of the medium is kept alive during the transition, affect can safely make the journey between media.

It is my contention that affect and emotion will adapt to any medium; in other words, the content of biologically-generated culture generally colonizes all media. Unless our bodies radically change, emotions will continue to be central aspects of cultural practice. Later in this thesis, I look at numerous works that have (I feel) successfully made the transition into digital media without an impoverishment of their affective potential. Regardless of how they are encoded, digital media in fact offers an expanded set of typographic and multimedia capacities to translate poetic texts into visceral reality. Paradoxically, in spite of the apparent contradiction between analog and digital, embodied viscerality is thriving in digital culture.

\subsection*{2.2.2 Bill Seaman: Recombinant Poetics}

Recombinant Poetics is a term coined by Bill Seaman in his 1999 doctoral thesis\textsuperscript{23}. Since Seaman's practical work is installation-based, he is not specifically concerned with online digital poetics. However, his theoretical work is discussed in the sections What is Emotion and A Hybrid Form between Constraint and Inspiration. Specifically, I am

\textsuperscript{22} Antonin Artaud is most famous for his development of the idea of 'Theatre of Cruelty' (Artaud. 1958) which was a manifesto-theory calling for passionate, convulsive and violent use of all the sensory resources of theatre in order to shock or destabilize the audience.

\textsuperscript{23} "Bill Seaman received a PH.D. from CAiiA, the Centre for Advanced Inquiry In The Interactive Arts, University of Wales, Newport, 1999. He holds a Master of Science in Visual Studies degree from the Massachusetts Institute of Technology, 1985. His work explores an expanded media-oriented poetics he calls Recombinant Poetics, through technological installation, virtual reality, linear video, computer controlled laserdisc and other computer-based media, photography, and studio based audio compositions."

\textsuperscript{25} "Loss Pequeno Glazier is Director of the Electronic Poetry Centre (EPC), and a poet, professor, and webmaster at the State University of New York at Buffalo. A selection of his works is available at his EPC author page (http://epc.buffalo.edu/authors/glazier )." (Glazier 2002. About the Author). His poetic works are computationally-generated poetic html mashups of Sanskrit Latin Spanish and occasionally English texts. Aesthetic and affective qualities are intentionally minimalized.

2.2.3 Loss Pequeno Glazier's Digital Poetics

In the first (and astonishingly virtuosic) full-length academic book specifically focused on digital poetry, Loss Pequeno Glazier's Digital Poetics, Glazier\(^\text{25}\) argues forcibly for poems specific to new media. Glazier investigates "not the idea of the digital work as an extension of the printed poem, but the idea of the digital poem as the process of thinking through this new medium, thinking through making. As the poet works, the work discovers" (Glazier 2002, 6). The volume and breadth of Glazier's scholarship are dauntingly comprehensive\(^\text{26}\) and solid; he creates a theoretical space "where words are mutable and embody transmission" (Glazier 2002, 34). His dexterity with a phrase offers many illuminating insights: "An electronic poetry is a public word, projected across a public world, across system, itself as a system" (Glazier 2002, 38). Glazier's Digital Poetics is a pre-eminent resource for scholars into the roots and evolution of digital poetic practice and theory.

For Glazier, "Materiality is important because writing is not an event isolated from its medium but is, to varying degrees, an engagement with its medium" (Glazier 2002, 21). I agree with Glazier in that an attentiveness to syntax-semantics, the history of words, their etymological roots, and the technological capacity of the medium has been a crucial core concern of numerous poets, including Ezra Pound, Jerome McGann, Christopher Dewdney and Christian Bok among innumerable other poets.

However, I disagree with Glazier on the pre-eminent importance of materiality to digital poetics. In my view, materiality is only one aspect of digital poetics. By assigning materiality an exclusive claim to innovativeness in digital media, there is a risk of excluding works that explore the dynamics of intimacy, affect and emotion. My claim,

repeated throughout this essay, is that emotional, naïve, confessional and intimate, poetry has relevance as research. Without the inadvertent often unanticipated speculative and emergent insights that arise from an impassioned personal and aesthetic practice-based research, digital poetics risks becoming the exclusive enclave of theoretical probes. Theoretical works often explore the materiality of new media yet lack any sensual interest. Exploring the complex materiality of embodiment as it encounters digital technology is a viable alternative or adjunct to strictly materialist and analytical methodologies of art-practice.

2.2.3.1 Glazier’s Criteria for Innovative Digital Poetics

The repeated motif in Glazier’s Digital Poetics is his emphasis on innovative poetics exclusively focused on materiality of the medium. He provides a synopsis of his argument and outlines 3 criteria for innovative digital poetic practices, all of which directly reject the role of affect and aesthetics in digital poetry (p. 174-5). Since his text is a canonical work in the research domain, in the following section I cite and respond directly to each criterion. In short, I feel that Glazier’s definition of ‘innovative’ poetics is susceptible to discarding an entire realm of practice that I consider central. The following responses appeal for the inclusion of affective digital poetics based on logic, not as an argument against Glazier’s position.

1) “Innovative work avoids the ... ‘I’...a sentimentalized ‘I,’ often concerned with its own mortality, can be considered as having passed away” (Glazier 2002. 174).

Response: In the process of composing theory, positions are often taken which are meant as abstract non-literal statements of an unrealized actuality. From the perspective of lived reality, Glazier’s announcement of the death of ‘I’ seems welcome but premature (I would love to be free of desire, insecurity, vanity ...). However, the ‘I’, far from being ‘passed away’, seems to permeate reality. Are egos in scarce supply? Have nation states dissolved? Has death stopped? Has anyone ‘reading’ this never fallen in love? known loneliness? felt wounded? Have cells dissolved all their membranes? What account of this world that strives for holistic comprehensive clarity can disregard the ‘I’? Empathic poetic-fiction offers the reader meta-I views, glimpses into other subjective corporal cages. Poetry offers glimpses to the core of ‘I’ where forms of shared intent emerge. At every level of resolution, the many-one oscillates: a society is a collection of individuals; each human is a body sack of billions of cells; cells are
composed of molecules.... Digital poetics must continue to navigate delicately the paradox of the illusion of identity. 27

2) "...the innovative digital literary text employs an architecture that places textual structures within the contours and values unique to its medium, a practice of textual ecology" (Glazier 2002. 174-5).

Response: Agreed. To be ecologically viable, digital poetry must be adaptive to (and capable of surviving in) new media habitats. Yet nature is rarely unique, and evolution demonstrates an enormous amount of repetitive use of forms and strategies. New media is not exempt from absorbing evolutionary technical or content materiality. Old ways will lose relevance, adapt or go extinct. Many traditional poetic techniques (repetition, motifs, aesthetics, proportion, form, grace) transplant well into digital media. The question is one of emphasis; Glazier is proposing (rightly, I feel) that new media cannot simply be transposed traditional literature. The question is how much of the technical inheritance of digital poetics is traditional. This question will resolve and evolve itself as more implementations emerge.

3) “Enabling of new tools of intelligence. This quality suggests avoiding the reinscription of authority, totalitizing positions, and commodifying of the artworks” (Glazier 2002. 175).

Response: Avoiding non-authoritarian (Ezra Pound?), non-absolute (William Blake?) and non-commodified (Leonard Cohen?) positions, potentially discards a significant part of poetic inheritance. Poetry is one way that systems (biological and cultural) communicate, and these systems will invariably (occasionally) be commoditized, authoritarian and total. From the perspective of emotional intelligence, there is a quality that each embodied being experiences of the absolute total force of a passion. The structure of how our nervous system decides occasionally issues very authoritarian commands: fear-flight responses, sexual urges, etc. While I agree with Glazier’s intentions, I feel that poetry will only evolve by accepting the paradoxes of embodiment that might contradict the civil aspects of our being.

27 Even if, as Glazier suggests, identity is an illusion, -- a view shared by the Buddhists and Einstein who saw it as an optical illusion of the body, and further reinforced by neurologists who search for the “neural correlates of consciousness (Koch. Crick 2004 ), -- it helps to remember that some ancient texts (e.g. Dhammapada ) speak of everything as an illusion. Thus materiality and identity can equally be fields of enquiry since both are illusions.

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2.2.4 Morris and Memmott: New Media Poetics

Adelaide Morris, co-editor of *New Media Poetics: Contexts, Technotexts, and Theories*, defines new media poetics as "a wide variety of configurations of language, image, and sound produced, distributed, archived, and accessed, and/or assimilated on computers" (Morris 2006. 7). This general umbrella definition is echoed, in the same book in an essay entitled *Beyond Taxonomy: Digital Poetics and the Problem of Reading*, by Tallan Memmott who writes: "the only feasible definition is a minimal one: that the object in question be 'digital', mediated through digital technology, and that it be called 'poetry' by its author or by a critical reader. The actualities of poetic practice in the digital environment are too diverse to permit a comprehensive or coherent taxonomy" (Memmott 2006. 294).

Both of these sensible definitions provide inclusive foundations for describing/understanding new media poetics. Memmott's definition is perhaps the more inclusive, as it does not even mention language and respects the right of the artist to call anything poetry. In a field as vividly eclectic and idiosyncratic as digital poetry, this inclusivity seems to be wise. Humans are metabolically distributed over a diverse fluctuating state-space of neurological and glandular phenotypic proclivities (in other words, there are many different tastes!). Since poetry has no recourse to any external quantifiable validation processes, intention is key. Synthesizing and condensing the preceding definitions offered by Memmott and Morris, I offer the following synoptic definition: *Digital poetry involves computation and is considered to be poetry by intention*.

2.2.5 N. Katherine Hayles' Media-Specific Analysis (MSA)

"...the physical form of the literary artefact always affects what the words (and other semiotic components) mean..." (Hayles 2002. 25).

The scope of N. Katherine Hayles' sustained engagement with literature and technology invites a detailed analysis beyond the scope of this thesis. Instead, I will concentrate

28 Talan Memmott is a hypermedia artist/writer from San Francisco, California. He is the Creative Director and Editor of the online hypermedia literary journal BeeHive. His website is http://memmott.org/talan/
29 There is no shortage of critics who have developed rational methodologies for assessing the quality of poetry, but I view such claims with suspicion since there is a wide disparity of opinions and no commonly-shared criteria of assessment. These methods invariably disagree and usually exclude figures who are assessed to be central using other systems.
30 This brief definition is the meta-case of the specific-case definition developed later in this essay: *Poetry is information visualization of the soul.*
briefly upon only one aspect of her theoretical position: her position on materiality. In *Writing Machines* (2002), Hayles calls for a *media-specific analysis* (MSA) which “moves from the language of text to a more precise vocabulary of screen and page, digital program and analogue interface, code and ink, mutable image and durable mark, computer and book” (Hayles 2002. 30-1). Hayles concentrates MSA on materiality. She defines materiality as “interactions between physical properties and a work's artistic strategies.” (Hayles 2002. 32-3); Hayles stresses how there are so many layers of materiality that “a technotext will select a few [material elements, such as the polymers, phosphors...] to foreground and work into its thematic concerns” (Hayles 2002. 32-33).

My own feeling is that the human cognitive apparatus in the presence of pervasive media often (not always) discards the semiotic influence of materiality. Reality shows, romances, comedies, and tragedies have reoccurred across historical epochs. In each era they adapt and adopt like ideological parasites to whatever affordances are permitted by contemporary transmission technology. Both atheists and religious fanatics use Power Point. The predominant bias on how information is ingested (semiotically) is the body.

I feel Hayles appeal for a literary theory specific to new media literature is a worthwhile goal; numerous practitioners and critics from Jason Lewis (1996) to Brian Kim Stefans (2006) echo it. Yet, (as always) I am cautious when it comes to the question of when theory should be applied to practice: Is there an advantage to exclusively applying a-priori theoretical principles to artistic practice? Critical practices are, in my naive view, optimal when applied after the creative process. It is possible for art-works to be over-determined by intellectual effort. In addition, intellectual and conceptual constraints may impede or censor inchoate responsive fluid emotions that require time to emerge spontaneously before fusing into a critically viable form.

Hayles' concerns are pre-eminently (and insightfully) analytical and theoretical and it is clear that she does not intend them to be adopted as guidelines for all digital poetic art-research practice. In this thesis, I approach digital poetics from a practice as a poet-programmer and advocate on behalf of naive practice, a practice that does not

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31 N. Katherine Hayles is the author of *Chaos Bound, How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics*, *Writing Machines* and *My Mother Was a Computer: Digital Subjects and Literary Texts.*
foreground materiality, analysis, intentionality or conscious thematics. Instead, it permits art-works to evolve. Art works in this cosmological system are organisms that must gestate, be born, and be nurtured. As a generality, theoretical materiality is conceptually incapable of accepting the emotional autonomy of the work; conversely, naive emotivity has trouble integrating the rigor expected of conceptual work. Obviously, a synthesis or hybrid of these theoretical poles offers fertile ground for the development of future digital poetics. In the contemporary realm, each type of work has relevance within digital literature: they are neighbors. I do not advocate for the exclusion of materiality from practice, I advocate for the inclusion of a neglected relative: emotional intuition as formative principle in the practice of digital poetics. Material Specific Analysis as the post-process analysis.

2.2.6 Mez and the Politics of Materiality

Mary Ann Breeze (mez) net-artist, theorist and activist – has been active on listservs concerned with digital poetics and net culture for the past decade, delivering virtuosic computational-idiom poems in voluminous net.posts. The inventive, liberated quality of mez’s distinctive writing echoes other eccentric poet outsiders of other eras. She calls her language mezangelle

“my particular ‘angle’ was to take various information text tracts and ‘mangle’ them through free/multi-word associative techniques + repost them – hence the term, mezangelle” (interview with Simon Mills)

Mez’s investigation of how computer code and human language merge lead her to question the role of language in materialist culture: consumption, profit, and the art-market. Mez feel that an incorrect emphasis on the object has infected the art world:

“This ‘craft’ orientation [producing skilled/practically inclined output, rather than placing adequate emphasis on the conceptual or ephemeral aspects of a networked, or code/software-based, medium] is embraced and replicated by artists who create finished, marketable, tangible objects; read: work that slots nicely into a capitalistic framework where products/objects are commodified.” (Breeze 2003)

32 In fact, my practice as a programmer attempts to render the materiality of the medium invisible. I spend so much time coding I do not consider it to be intriguing as art to redisplay or focalize the viewer’s attention on the interior workings of the code. To draw a visceral analogy, materiality in my view is a bit like discussing anatomy and autopsies while making love. Interface transparency may be a myth (Bolter and Gromala, 2003), however, it still constitutes a viable goal within the design community. Digital poetics with this goal is invariably aesthetic.

33 Mez: http://www.hotkey.net.au/~netwurker/

34 Netochka Nezvanov (a.k.a. Antiorp ) is another example of an infamous listserv code poet.

35 Other poets with their own languages who absorbed external idioms: Bill Bissett, bpNichol....
Mez's comments point to an implicit widely-shared attitude in the net-art avant garde:
that beauty is synonymous with corruption and capitalist sell-out.

This political component - a rejection of glamour (etymologically Gk. illusion), the art
object and modernist aesthetics - of materiality theory contributes to the neglect of
affect in contemporary digital poetic practice; where beauty is contaminated, emotion is
infection. Politically situated theory that concentrates on the material and conceptual
aspects of digital poetry reacts against emotionally manipulative and intensely glossy
online marketing experiments. The low-tech, code-based jodi aesthetic can be partially
traced to a rejection of Flash software due to its association with advertising and
corporate glamour online. Open source, activist and intellectually engaged, the
current theoretical climate foregrounds works that investigate the signification of code,
the temporal implications of programming, and a low-tech aesthetic.

While I am sympathetic to the motivations of activist communities, my creative
perspective is inverse to what mez asserts. I feel that, in spite of the ubiquitous
economic exploitation sensuality of advertising, aesthetic and beautiful online art-works
can constitute viable methods of protest against social inequity and injustice.
Conceptually, too, there is also an ontological argument to be made for a resurgence of
aesthetic, personal and intimate work in online new media: websites are open, normally
free, and generally accessible (to any networked computer). Therefore, the beautiful
website is not a commodity; it is an opportunity to contact directly the nervous system
of the viewer-user. Its style or substance may be borrowed from or become integrated
into advertising, but in and of itself, the potential for such a transfer does not constitute
sufficient reason to bypass entirely the opportunities offered by emotional, intimate and
beautiful communication.

36 jodi.org are (in)famous net-artists whose work brings code to the surface of the webpage and
directly challenges notions of navigability and transparency.
37 Corporate 'poetics' utilize the high-end of multimedia and visual typography to create what are
essentially sensual viruses. An exceptionally successful example is Mattias Lindberg, a.k.a.
fakepilot.com operates as a motion designer / director for many large firms. His works are self
described as intro-mercials for the web, "adrenalin spots". Highly addictive eye-candy. Aesthetics
used for profit has alienated many artists from considering it as viable path. See the section:
Advertising as Domain of Typographic Innovation
38 My credentials in the underclass of artist collectives emerge from decades living and working
outside the boundaries of both academia and the commercial art-world.
2.2.7 Sondheim and Cayley on Codeworks

Alan Sondheim has proposed the word Codework to refer to poetic work that directly investigates the materiality of the medium (Sondheim 2001, 1). Codework includes text that incorporates computer code. Parallel to work such as that practiced by mez, Sondheim and Memmott, John Cayley has developed a taxonomy of codework (Cayley 2006, 311-12). Cayley investigates the paratextual aspect of digital poetry. Paratextual aspects are interpretations that arise from the computational context, insertion of brackets and other punctuation. For Cayley, the temporal processes underneath the surface of new media work constitute an avenue for materiality research. His research is of primary concern only to those entomologists of poetry who possess the capacity to explore them. While Cayley is an admirably intelligent guide and the density of his analysis of temporality in signifiers is profound, I cannot claim to grasp its full implications. However, in brief, Cayley proposes viewing temporality as a quality that permeates all levels of the production of poetry, from animations and the reader, to code and the binary substrates of the computer.

2.2.8 Brian Kim Stefans: Fashionable Noise: On Digital Poetics

Fashionable Noise: On Digital Poetics (Stefans 2003) is far from being a conventional work of scholarship: for example, one chapter is a transcribed ICQ conversation; another is a long poem-essay with verses of exactly 575 characters. Stefans, whose artistic practice experiments with computer poem generation and display styles from c++ to Flash, disturbs epistemologies with sarcasm. His thought is too dense, prolific and idiosyncratic to be feasibly condensed; but to summarize, Stefans investigates digital poetics through ironic probes that act as provocative levers. Distortion, hyperbole, txt msg motifs, and obscure allusions all serve to conceal/reveal an intensely sardonic intelligence. Stefans' theoretical perspective is relevant as a simple antithetical

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39 Cayley's code taxonomy is comprised of 5 layers, and corresponds to what a computer scientist would call levels of abstraction. Very simply, from machine language to symbolic reasoning, possibilities for semantic interpretation occur at many layers.
40 Cayley has been extremely active in the online theoretical discussion groups. His website P=R=O=G=R=A=M=A=T=O=L=O=G=Y is an extensive resource of work and articles on digital poetry. Cayley won the ELO's first annual award in digital poetry in 2001.
41 “Brian Kim Stefans is the author of Free Space Comix (1998), Gulf (1998/2000), and Angry Penguins (2000). He has been an active presence on the internet for several years, editing arras.net - a ceaselessly original site devoted to new media poetry and poetics — and creating works such as the acclaimed Flash poem "The Dreamlife of Letters" and a setting of the "e" chapter of Christian Böks Eunoia. He is an active literary and cultural critic, publishing frequently in the Boston Review, Jacket, and elsewhere. He lives in New York City.” (Publisher's bio: http://www.atelos.org/fashionable.htm)
42 ICQ: An instant messaging software. ICQ: “I seek you.”
example; Stefans’ works confirms (once again) that the dominant theoretical approach, the thematic trope, in digital poetics is materiality.

Where the classic HCI model of interface design strives to ease the viewer’s load, in *Kluge* (2006) and other works Stefans often initiates procedures that confound and deny user expectations. In *Kluge*, the text decomposes as soon as it touched: letters that are under the mouse blur and drift away, only to be replaced, but not with the same letters. Interaction becomes decomposition, and the user becomes an agent of decay contributing to the destruction of easy meaning and the birth of incomprehensibility. One button is an icon of a bomb that eradicates all the text and replaces it with a fresh batch to be decomposed. Even the interim texts that appear before decay contain the stylistic traces of cut-ups, as if assembled from chatbots pretending to be 14 yr old deconstructivists (they are very probably found texts or cutups). In *Fashionable Noise*, Stefans sardonically advocates that no text in a poem shall be original: only found images and found sounds should be used. As well, literary genres — the fable, the lyric, the epic — shall be replaced by genres of information distribution such as newspapers, e-commerce sites, chat rooms, games, and puzzles (Stefans 2003. 297). Stefans may make these statements ironically, but the direction of irony is revealingly consistent. His critiques are part of a lineage of digital poetics enquiry that rejects or satirizes the role of intimacy, emotion and sensuality in digital poetics. In its place, it offers interactive textual operations as conceptual provocations into the non-static quality of meaning and memory.

### 2.2.9 Ollivier Dyens: Empirical Theory and *Centrifugal Text*

My practice-based methodology shares affinities with Ollivier Dyens who says of the web: “It was possible to comprehend this new phenomena by empirical methods rather than through theory. By plunging directly into the Web, confronted by its challenges, potentialities, redefinitions and instabilities, I could attempt to define it specific character from the bottom up more than top down. Instead of imposing a theory on my material, I could let it propose its universals.” (Dyens 2000. 194. My translation from the French). Dyens proposes *centrifugal* text, a form of media drenched and perforating outward into networks that give rise to a new mode of reading and writing specifically designed for the web (Dyens, 2000, 198-9). It is a call echoed by many theorists and practitioners, including Lewis (1996), Glazier (2002), Hayles (2002), Stefans (2003), and Vandendorpe (1998), to name only a few. In other words, writing must deal with the
immense changes and potentials created by digital networks. Practice-based art-research is one means of empirically developing theory.
CHAPTER 3: METHODOLOGY

"A man of my occupation seldom claims a systematic mode of thinking; at worst, he claims to have a system – but even that, in his case, is borrowing from a milieu, from a social order, or from the pursuit of philosophy at a tender age. Nothing convinces an artist more of the arbitrariness of the means to which he resorts to attain a goal – however permanent it may be – than the creative process itself, the process of composition" Joseph Brodsky, 1987, Nobel Lecture (Brodsky 1987).

This chapter on methodology frames the contentious terms of affect, consciousness and emotion within the context of my art-practice. Methodology is problematic for arts such as poetry. Spontaneous, intuitive, immediate, emotional and often un-anticipatable, poetry does not seem a good candidate for enclosure within a rigid methodology. All systemic methods threaten to inhibit the fragile process of authentic inspiration, or to be built yet hold nothing: wind cages, light enclosures, wave locks. The following sections proposes academic arguments for integrating abstract intuition into practice, aesthetics into art after post-modernism, transcendence into the mundane, and affect into consciousness. Affect is decoupled from populist sentimentality and re-contextualized as a fundamental aspect of the artistic process.

This thesis navigates the delicate actuality of art-making and the demands of scholarship, providing an introduction to an artistic practice that straddles reason and irrationality, interface design and art, science and folklore, and heart, brain and body. It offers an epistemological challenge to the norms of how we consider knowledge to be generated and shared; and it offers a methodological defense of the crucial role of naïve intuition in creative practice-based art-research.

3.1 Affect, the Unconscious and the Inanimate

"[Automatic Writing] literally comes from the practice in séances, and also to an extent in psychoanalysis of finding ways of getting through to the subconscious or unconscious, of allowing writing to happen without knowing in advance what it’s going to be in the hope that you’ll then read what is going to be in front of you as a clue to who you are...And it’s best
when your conscious mind, as it were, goes off and has a cup of coffee while that's happening... (the process involves) always finding something within either drawing or filmmaking that calls to be drawn....” William Kentridge (Kentridge 2003).

Practice-based art-research often has psychological and ontological implications that only become apparent when the act of making is analyzed. The poetic writing process is often un-meditated and deeply intuitive. Often poems emerge spontaneously and complete; other times they are labored. In each instance, there is an emphasis on the feeling of each word in its particular context. I attempt to discern through implicit synthesis the resonant potential of the word at that particular moment. Obviously, this practice emerges from a conjunction of subconscious neurological processes and the body. In my poetic practice, I strive for allowing unconventional voices to speak. Paul Connolly, the late director of The Institute for Writing and Thinking at Bard College expressed a similar view in an email with Joan Retallack: "With Richard Rorty, I believe that it is not arguing well but speaking differently that changes a culture. Poetry is the place where speaking differently is most prevalent." (Retallack. 2006. Epigraph)

The process of finding abstract video footage is also one of discovery, intuition rather than induction or deduction. Filming very small things using a macroscopic lens in tidal pools, rivers, jars, puddles and plastic bottles, I attempt to discover behaviorist analogues of psychological truths. In other words, I look for things that look like life, that emulate thought, that suggest observable intimate truths about human relationships. I look for the origins of the human subconscious in the motion of inanimate objects and in the sound and rhythm of words. Like city traffic seen from aircraft, information visualizations of masses of people, data clouds roaming the internet, patterns of self-similarity in ordinary things can express physical truths of the reality we are in now. Dust, pebbles, pollen, spores, and shells are crowds of scurrying specks self-absorbed in intricate activities. Motion has features that the human mind anthropomorphizes. Laws of physical motion and form in my view extend into consciousness. Because the brain is physical, the electrochemical dynamics that govern the tides of neurotransmitters are the same forces that govern vortices in inter-tidal pools. Following this metaphor, the interior of a puddle can be considered an ecosystem or the entire ocean can be considered an evolving thought. Inside the puddle, a tiny shrimp exhibiting curiosity may experience an eternity in an afternoon; conversely, the ocean's entire existence may be an ephemeral twitch in the temporal scale of the
universe. Art, I believe, should suggest these speculative voyages, should seed them as ontological nourishment into the continuum of human knowledge.  

3.2 Non-banal Beauty and Digital Poetics

"... aesthetic production today has become integrated into commodity production generally" Frederic Jameson. (Jameson. 1991. 4).

In an argument that will reoccur several times throughout this thesis, I attempt to lay the foundations for a reintegration of aesthetic concern into digital poetics that can work in parallel with materiality concerns. In spite of the widely perceived contamination of aesthetic processes by advertising, I feel that as embodied creatures the tendency to make aesthetic judgments is innate and needs a place in any holistic poetic theory and practice. In an online video-discussion, Jonathan Lethem (author) and Janna Levin (physicist-novelist) discuss the differing relations that art and science have to beauty. For artists, Lethem points out, "after modernism beauty is terrifically suspect." Lavan agrees, "it's considered somewhat provincial to aim for beauty, we're not doing pretty pictures here, we're doing something...but in science we really hold up beauty and elegance as the goal because for reasons I think no one fully understands it's a good criteria for distinguishing what's right from what's wrong." (Seed 2007).

Clearly, a tangle of social contexts, fashion, and metabolically-determined cognitive processes all contribute to this elusive shifting quality called beauty. In human terms, beauty is a multi-functional word that generically refers to a vast subjective terrain.

Setting aside the utopian project of arriving at an agreed-upon definition of beauty, it seems a feasible time for art to wrestle the concept of beauty in all its glistening, manipulative power out of the exclusive domain of advertising and science, and reinstate it again as a honoured aspect of art, and specifically contemporary art, the

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44 In an era of quantum physics, M-Theory, hyper-dimensional universes, and augmented reality, art's speculations suggests the emotional implications of conceptual probes.


46 Lethem concludes the discussion by referring to the now commonplace knowledge that we find symmetrical faces beautiful, but prior to that knowledge: "no one would have said 'I like symmetrical people'. They sought the name beauty to describe an evoked response" (Seed 2007).
serious stuff, respected and acknowledged47. Now is the time, given the extremely aesthetic capabilities of online multimedia, to correct the excesses of post-modernism and classical criticism. Beauty is a feature shared among epistemological disciplines; it is, in fact, an essential aspect of any transdisciplinary project concerned with creativity and knowledge. The goals of art, science and advertising may diverge, but the cognitive response to beauty exhibit similar features: the body absorbs the impact of a perception whose perceived correctness, its aesthetic grace, bypasses critical faculties.

Integrating beauty into an art-work does not render the work critically irrelevant, or suspiciously seductive, it merely offers artists an opportunity to engage with the totality of being.

3.3 My Central Theoretic Concern: Epiphany Machines

"Postmodernism... is continuous with [modernism] and its romantic predecessor: the moment of sublimity is there at its root" (Lui cited in Redfield 2003. 179).

My central concerns as a poet are traditional. I am focused “on the difficult attempt at informing the ordinary with the transcendent” (Williams 1998. 68). Transcendence in my theoretical work is synonymous with the beautiful; and by this I do not mean classic beauty or the normative beautiful face, I mean the sublime48. The sublime evades categorization, emerging instead at irrational spontaneous moments when consciousness and image fuse. These fusions occur regardless of media; they are often emotional and embodied: a image traverses the blood, a phrase ruptures. Art’s function is to act as vessel for the transmission of these fusions that are interpretable as microcosmic unities. It is my contention that digital time-based media is an appropriate media for investigating psychological states that originate inside of time yet feel as if they occur outside of time. Aesthetic state-spaces are equivalent to epiphanies: normal and widespread psychological events that have temporal significance both

47 Associational logic guides human category creation. Aesthetics and emotions are negatively associated because a few fashion-models exhibit the anorexic intelligence of twinkies, advertising is maliciously manipulative, Hollywood is artificially spectacular, greeting cards are overly-sentimental, and some classical art professors exhibit the dynamic charm of taxidermical objects. These associations, however, do not constitute a reason to discard aesthetics completely.

48 The sublime has an extensive history of usage in metaphysics from Longinus, Immanuel Kant, and Edmund Burke to Francois Lyotard [I am indebted to my external Niranjan Rajah for bringing this fact to my awareness]. I am using the word ‘sublime’ in a way distinct from that history to refer to any subtle and paradoxical experience of intimate ineffability that defies normative description. The conjunction of the sublime and the beautiful can be conceived as a form of metaphysical synaesthesia mixing concepts that Kant considered distinct and contradictory (Shaw. 2006. 98).
neurologically and philosophically. My research is into epiphany machines that are online poetic archives of multi-media content, text and programming.

3.4 Integrating Opposites: Complementary Pairs

"Like anything worth writing, it came inexplicably & without method..."  
Author character at time 1:13:10 in Stranger than Fiction49 (Helm. Forster. 2007.)

Questions of time, identity, truth, and visionary experiences are contentious subjects50. Luckily conceptual foundations exist for integrating opposites. Kelso and Engstrom (2006) outline a coordinated dynamics approach that they call complimentary pairs51. Complimentary pairs are contraries which mutually contribute to self-organizational autopoietic52 structures. Kelso and Engstrom's research suggests, from both a philosophical and a scientific basis, that reconciliation and acceptance of co-existent opposites is a viable (even vital) theoretical foundation for investigations into life (Kelso. Engstrom. 2006. 63). Building on the work of Haken (1988) into open non-equilibrium systems, they emphasize the dependence of dynamical living forms on the tension between contraries. Culture in this view is the product of religion-science, passion-reason and holism-reductionism53. Epiphanies and poetry within this cosmological viewpoint entwine with the ordinary and reductionism. The relevance and necessity of complimentary pairs is seen as the antidote to exclusively either/or thinking which threatens the world at social and political levels.

49 I watched Stranger Than Fiction for the astounding visual language graphics from MK12 Studios. The credit sequence is online at http://media2.mk12.com. White elastic 3D motion- graphic language (borrowed from rave and drum ‘n bass posters – who emulated computer manuals, subway maps, and early computer graphics) is animated over the film (as data) permeating life. Stranger Than Fiction is a meta-fiction movie of an emotionally overwrought modernist author (suicidal and anguished) who is writing about the emotional redemption of a overly reasonable character (a banal taxman) by passion (a sensual anarchist baker). It fulfills, almost too perfectly to the point of parody, a style of commodified subconscious: visceral archetypes etched by conscious and big budget craft. Life as data is the metafiction of our era. Future interactive-film-novel-poems will do what Stranger Than Fiction promised: a full-bodied artistic synthesis of theatre, music, film and literature. Literate new media with interactivity. 50 Are qualitative experiences simply the ephemeral subjective output of our neurological apparatus? What forms of research can integrate paradoxes of reason and passion, the ordinary and the transcendent? 51 Their book The Complementary Nature (MIT 2006) offers copious examples of thinkers and physicists who have to some degree embraced this fundamental cosmology. 52 Autopoiesis is a term given to self-organizing systems by Maturana and Varela in 1980. Basically the homeostatic (stabilizing) impulse of a living system is to stabilize itself. In short, recursive survival. 53 "The Complimentary Nature introduces a new meaning and application of the tilde, or squiggle character (−), as in yin-yang, body-mind, individual-collective." (Kelso. Engstrom. 2006. xiv)
3.5 Integrating Vision: Consciousness and Affect

The evolution of this essay parallels a focus upon exploring cosmological questions concerning consciousness: What is life? How do considerations of art, affect and consciousness influence the creation of digital interfaces for poetry?

Questions concerning life may seem distant from questions of affect and art. These questions may also seem foolishly intractable for study by a solitary practise-based art-researcher. But the huge metaphysical question of ‘what is life’ can be rendered relevant to art-affect research by recognizing that how humans as a collective view life influences how they relate (emotionally) to the external world. If art can change how we conceive of the world, then it changes how we feel and relate to the world.

It is widely recognized (from Aristotle to modern criticism) that art can change a viewer’s conception of reality and themselves. Aristotle’s notion of catharsis explicitly outlines art’s capacity for changing the viewers. Ancient rituals, which form the roots of artistic practise (as examined by numerous commentators from Micae Eliade to Ananda Coomaraswamy), were evidently transformative. In spite of Bertolt Brecht’s refutation of catharsis as an artistic method, the metabolic fact of our bodies as receptive machines ensures the continuing influence of catharsis. Art changes us. In my view, art operates as feedback reinforcement for shared attitudes but also contributes to the transmission, evolution and mutation of collective conceptions. The association of art in our culture with terms like ‘paradigm shift’ and ‘magical’ reinforce the acceptance of a functional socially homeostatic role for art. Digital poetics concerned with affect is, then, simply the continuation of that tradition.

3.6 Methodology: Naivety, Authenticity and Passion

"Naive is the word for stupid in the academic lexicon; it names a quality fatal to the aspiring hermeneut" Kevin McGuick (McGuirk 2001. 96).

The fatal infection of naivety is at the core of what I (perhaps foolishly) consider the roots of raw authentic inspiration. Introspection on my own practice-based art-research leads directly to an awareness of the role of naivety in creation; almost invariably it is only through a naive clarity, an innocent mood, uninhibited by critical compulsions

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54 Catharsis is the Greek Καθαρσίς Katharsis word meaning "purification" or "cleansing". (Wikipedia)
that projects initiate themselves. Yet I am aware that to situate or affiliate oneself with naivety is contentious; it risks provoking questions which can puncture the validity of an argument. It is helpful to examine potential objections that might arise.

If art is the conscious mastery of communication and tools, what role has naivety in art? Why should naïve, insane or childish art be equally valued with that produced by masters? Art Brut, a movement espoused by Jean Dubuffet is a vivid example of valuing naivety in art; its philosophical embrace of naivety is total. In Art Brut, practitioners are often literally the victims of organic obsessive-compulsive disorders; art brut hovers between aesthetics and a freak show, aesthetics emerges through anomalies, the freak show attracts paradoxically through revulsion or wonder. Words or activities are transfigured through relentless repetition into large-scale monuments to endurance.

The Art Brut path is one aspect of naivety; it is not representative of what I intend by naivety. Also naive are the relentless hordes of innocent postcards and romance novels, the aphorisms and injunctions that knot sentimentality into cliché. This ubiquitous practice is also not at the core of my definition.

Instead, there are diverse alternative modes of naivety that remain un-enumerated by the incomplete preceding catalogue, and among them exists a path that incorporates naivety without surrendering intelligence. It is a pathway that adheres to the nature of thought as it is thought; that cherishes the instantaneous gesture without deifying instinct. In a sense, this form of naivety is a proposal for neurological egalitarianism. Given that a human is a complex apparatus of intersecting neurological and enteric modules, it proposes that the reentrant circuits of analytical logic do not emphatically rule artists. Conjunctions of patterns arising through internal interfaces all contribute to the nebulous swirling notion of our self; honest art must allow the voices interior to this cloud-self to speak. In other words, artistic creation can arise spontaneously from the raw datum of thought, independently of a conceptual precursor. As James Joyce wrote: "I shall express myself as I am" (Joyce. 1932).

Contemporary theoretical initiatives are emerging from credible research institutions that advocate a clear play of ideas, free from the formal censorship of conventional scholarship. Naivety is not any longer fatal; it may stigmatize, but as a methodology it has its advocates; notably Henry Jenkins from MIT: "Popular culture is defined in part by its immediacy and it is not clear that one can meaningfully understand how it works or what it does without stepping at least temporarily into the realm of the proximate and the passionate" (Jenkins. 2007). By juxtaposing the immediacy of culture against
the slow production values of classical scholarship, Jenkins advocates a *temporary* leap into 'the proximate and the passionate'. His argument generalizes well into a model for artistic practice in the digital era. Naive uses of technology need to be reexamined, but first of all be allowed to happen. Poetry without play is not poetry. As Kevin McGuirty says (in the same essay that supplied the quotation at the beginning of this section): "poetry, I would argue, has engaged variously and promiscuously, sometimes covertly, sometimes brazenly, with the many forms of the stupid" (Open Letter, 11.1, p.99). It is from this tradition that digital poetry emerges. Digital poetry can deny or refute its roots, but the roots of art are impassioned, often naïve and embodied.
CHAPTER 4:
WHAT IS POETRY?

“A poem is a small (or large) machine made of words”
William Carlos Williams [Williams. 1944. 8].

Defining poetry in computational terms and revealing how that definition connects to emotion is the task of this chapter. Poetry is defined as a form of making patterns that corresponds to information visualization of emotions. Defining poetry in this way is obviously contingent and specific to computational contexts. This ad hoc definition is effective, however, at providing a sense of how poetry is comprehensible and relevant in contemporary terms; and it provides a framework within which it is possible to argue for the extension of the lyrical poem into digital media.

4.1 Poetry is an Ancestor of Computer Code

“Executable code existed centuries before the invention of the computer in magic, Kabbalah, musical composition and experimental poetry. These practices are often neglected as a historical pretext of contemporary software culture and electronic arts. Above all, they link computations to a vast speculative imagination that encompasses art, language, technology, philosophy and religion. These speculations in turn inscribe themselves into the technology” Florian Cramer55, Words Made Flesh (Cramer. 2004).

The first poems were most probably incantations: attempts to modify matter, to influence time, to bring back a dead friend. As such they were language used programmatically to restructure ‘reality’ or ‘truth’. If epistemology is, as Richard Rorty56 (among others) claims, a by-product of social contexts and conversations, then language (to some degree) produces reality. Using the technology of words and syntax, coherent conceptual systems are constructed by our identities and project outward like cell membranes around us deflecting the raw datum of existence. Reality emerges at the junction of our minds and language. These post-modern claims have been argued (often

55 In 2004, Florian Cramer visited Piet Zwart Institute as a Media Design research fellow. The essay he wrote there links alchemy to code-culture. Words Made Flesh, code, culture imagination, is online at http://pzwart.wdka.hro.nl/mdr/research/fcramer/
56 Richard Rorty advocated a form of contextual epistemology he termed radical pragmatism in many essays and books. My meagre understanding of his philosophical project was gleaned from Truth and Progress (1998).
rabidly) in the last decades; depending upon a person's proclivities or mood they may end up on either side of this very complex swirling argument. Questions breed rapidly. What can save knowledge from nihilistic relativism? Is there no exterior reality? Is anything true?

I feel it is beyond the capacity of any human to establish the absolute truth of a position on the continuum of positions created by these claims. However, knowledge seems topological\(^57\) and is intimately linked to language both cognitively and socially.

Computation creates reality through code-language. Everything from interfaces to 3D animations constitutes additions to the collective, abstract topology of human knowledge. Poetry creates reality from cadenced-language and symbolic associations. Computer code is compiled. Poetry readers ingest and run poems in their brain-body, just as software compiles and runs on computers, through a process of parametric analysis, definition of variables and cascading calculations.

This comparison (although somewhat typical of this current era and perhaps a cliché) points to a deep parallel between the ancient technology of oral narratives, incantations, mysticism and contemporary computation. Florian Cramer (see the quotation that opens this section) has explored the historical proofs and implications of this recognition in *Word made Flesh: Code, Culture, Imagination*. Myths have long been seen as a form of magic, a bringing of worlds into being, a speaking of worlds with words. Computation is our contemporary tool: it renders reality with language\(^58\).

Since computers suggest programmability and poetic orators were incantatory shamans, poetry is the ancestor of computer code.

### 4.2 Poetry is 'Making'. Making is a design science

"Making in art is not just a corollary of problem solving, of producing schemas that tell you whether it is a duck or a rabbit, of producing things that are corollaries for the discovery of existing truths. Instead,

\(^{57}\) Topological in the philosophical sense of an undulant landscape, a wave-form that permeates thought which expresses itself through languages.

\(^{58}\) This notion of language includes mathematics and binary code; it also includes physical or gestural languages. The underlying ontology of the thesis argues for a conception of the universe as a set of intersecting patterns (body, mind, thought, words, computers); patterns co-precipitate language. See the appendix on Panpsychism for a discussion of how patterns conceptually connect to languages.
making is the capacity of constructing autonomous symbol systems that have a huge variety of so-called natural grammars and rules of order that are in mutation throughout history" Kirk Varnedoe, A.W. Mellon Lectures 2003 (Varnedoe. 2006. 270. Emphasis added.).

Language is a technology (Ong. 1982.) It converts sound and symbol into informational machines. Poetics is an ancestor of design science; poetics is essentially a set of principles defining how to write poems; it developed around the technology of language as a set of rules and ‘best practice’ regulations designed to increase the informational capacity of the technology. Rhythm, rhyme, beats, metre, and other design rules established by poetry operate as guides for writers, the technicians and operators of language.

The relationship between poetics and design science can be traced by considering parallels in their definitions. Design science in modern discourse refers to generalizable rules that lead to superior design; it also refers to the application of scientific principles to the design of technological artifacts. Poetics is also the systematic study of the affective impact of crafted language (both sound and word) on the human mind; poetics for millennium has been a terrain of schools, cabals, and styles, each espousing specific principles which contribute to superior poetry. Both disciplines are sets of rules that converge on a practice.

In the 3rd century BC, Aristotle wrote his 'Poetics'. It was an attempt to formulate and understand the principles underlying concise literary communication. It is a document of approximately 10,000 words, truncated by intervening millenniums. George Whalley, a contemporary translator of Aristotle, emphasizes the etymological roots of the word poetics, which supports an argument for considering it a design science:

"From poiein (to do or make) we have poema (a thing made roughly our 'poem'); poietes (a maker roughly our 'poet' but poietria is not poetry but a poetess); poiesis (the process or activity of making only very roughly our 'poetry', and unhappily the eighteenth century fumbled the ball in allowing 'poesy' to become an elegant variant of 'poetry' when we badly

59 Varnedoe might be echoing Aldous Huxley who in 'Literature and Science' wrote of the isolated word “as a thing-in-itself, an autonomous pattern of sounds and meanings..."(Huxley. 1963. 34). The contentious word autonomy has relevance in digital poetry where rudimentary decision-making capacity (about display, velocity, behaviour) can be incorporated into words.

60 By saying 'language is a technology', no intention is meant to imply that humans possess a unique capacity to create tools. Instead, my view is that nature is technological: bodies, culture, language modules in the brain, and every species is to some degree a form of technology designed by evolutionary circumstance to survive. In this cosmology, language is simply a very specific form of symbolic structures that has a technical function. See Ira Livingston (2006. 102) for a discussion of the negative interpretations of language as tool.
needed a word for poiesis. From the noun poiesis, the adjective poietikos
is regularly formed (to do with making, capable of making)....” (Whalley.
1997. 11)

In 2002, Mark Amerika, also related digital art to making: “The name TECHNE comes
from the Greek use of the term techne to mean both art and technology, especially as it
relates to practice and application (“to make or do”)” (Amerika. 2002). At its root, poetics
is concerned with making, more specifically, ‘to do with making’. Design is the science
concerned with making; the root of the word design is to mark with a sign, signal, trace,
image. Thus these two domains, poetry and design, meet at their etymology: to make
marks or traces that are signs or signals is to communicate. Poetry is an ancient
relative of design science. Computational poetry exists at the interstice of poetics and
design science. Digital poetry is making marks with a digital amanuensis61.

4.3 Poetry is Information Visualization.

The science of representing large data sets of information is not confined to computers.
For instance, the human face, the gestures and motions of its muscles and eyes can be
considered as evolution’s answer to the design challenge of representing complex often­
contradictory sets of cognitive-emotional material in a single readable interface. The
face therefore is an example of information visualization. The graphs of geometry, the
pie charts of the boardroom, and the animated statistics of Gapminder62, are all
information visualizations.

In the same manner, it is possible to consider poetry as information visualization. The
consideration may not be as inane as it first seems. The human body is a complex
blend of neurological and autonomic systems; these systems are both creating and
being nurtured by culture: intelligence is situated and occurs in context of other human
beings. Learning and evolution of the emotional-culture system is most probably
dependent on appropriate, comprehensible and succinct feedback.63 Like much of
culture, poetry has a homeostatic feedback function: it represents people to themselves.
Poetry, pop music, advertising, theatre and books distil pivotal moments, moments of
discovery, awakening and truth. All of these cultural forms operate as “interpretive

61 Amanuensis is a term for scribes in the medieval era who copied texts. Sometimes these
scribes were illiterate. Computers occupy a similar role: they do not recognize our language, they
merely copy it.
62 Gapminder is an online project devoted to visualizing data from around the world initiated by
63 One of the foundational AI approaches involves belief-response-feedback circuits.
communities" (Fish 1980, 14) which exert a pressure for emotional and conceptual conformity on the individual. The information represented by the artist is therefore in a recursive way a product of the social experience of a collective. The artist operates as the distiller of collective data (the collective unconscious in Jungian terminology) and translates experience into sharable modules.

From this perspective, I advocate (repeatedly throughout this thesis) for the socially relevant and necessary homeostatic influence of poetic production. Until the emergence of new media (photography, film, video, internet...), books represented the most cost-effective methodology for this societal homeostasis to occur, coalescing populations around shared myths. The top three bestsellers of all time (the Bible, Mao's quotations, the Koran) certainly support this hypothesis of poetry as ideological amplifier of the coalescing power offered by ritual. The question now is twofold: how do computation and networks change this process? In addition, how does poetry perform this function of modulating collective emotional structures?

4.4 What are Emotions? Patterns.

"...we think too much and feel too little..." Charlie Chaplin. 1940.

Since I am arguing for the relevance of the lyric and emotional poetry (and before providing an answer to the preceding questions) it is important to first define emotion. Emotion according to Marvin Minsky is a 'suitcase word' that refers to "large networks of processes inside our brains" (Minsky. 2006, 2). In other words, there are numerous diverse concurrent, sometimes contradictory, biochemical processes occurring in our mind-body envelope, and emotion is the word we use to describe the turbulence (or calm) that arises from the intersection of these processes. According to Rosalind Picard, emotion recognition is a multimodal pattern recognition problem (Picard, 2003). Therefore, it seems plausible to suggest that emotions are patterns\textsuperscript{64}. Combining

\textsuperscript{64} Also relevant as corroboration of this hypothesis is Bill Seaman's 2004 paper on Pattern Flows (available online) which provides a stimulating overview of research into synergetics and self-organizing systems from an artist-research perspective. This viewpoint of emotion as pattern does not foreground the controversy over emotional taxonomies which have been developed by numerous commentators (LeDoux 1996, Panksepp 1998, Dalgleish 1999). As artist-researchers, it is possible to explore patterns without naming what it is we are exploring. To repeat a quotation used elsewhere in this thesis, John Cage said in conversation with Richard Kostelanetz, "We do very good work when we don't know what we are doing" (Cage 1978).
Minsky’s and Picard’s viewpoints with the idea of emotion as pattern, it is possible to define emotions as complex superimposed patterns that occur in bodies.65

I agree with Minsky that emotions may not be different than thought. The ‘qualitative’ or ‘emotional’ is perhaps understandable as the meta-pattern extracted from a mass of biological quantitative processes: boiling bodily data builds up until it aggregates into a pattern and becomes labeled as an emotion or a thought.66 In 2004, Bill Seaman outlined a theoretical art-research approach to patterns, language and consciousness: “Instead of presuming the observer as given, we are interested in examining how the ongoing buildup of language through multimodal patterning and reciprocal action between others and self, becomes the precondition for any meaningful statement” (Seaman, 2004. 1)67. Seaman cites Edelman’s Neural Darwinism notion of competitive “coordination and reinforcement of patterns of neuronal group selection....” (Edelman. 1987. Cited in Seaman. 2004. 3).

Poetics as pattern-making therefore has relevance for understanding and researching problems where consciousness, emotion and meaning intertwine. Tomkins suggests that events amplified by emotions become meaningful (Tomkins 1962. 7-9)68. Poetry is at its root level the making of meaning. It emerges out of mythology; mythology emerged out humankind’s search for meaning around death. Some observers have speculated whether ritualized behavior patterns and the capability to compose lucidly affect-triggering words serve an evolutionary purpose (Holland 2001).

Although science may validly claim that much of mythology and art are reducibly understandable as imaginative projections of our existential ignorance (confabulations and illusions provoked by our fear of the unknown onto an immense dangerous

65 This notion of emotions as patterns is not meant to constrain, or negate the rich depth of varied experience possible for a human. Behaviourism and the passions are not contra-indicated. It is possible to speak of the soul as a machine (see Appendix on Panpsychism). Natural formations exterior to our bodies (tides, galaxies...) exhibit lush intricate levels of complexity as systems. Human emotions are natural systems, organic structures, not qualitatively distinct from nature. Contemporary practitioners of many psychological disciplines (notably those influenced by Silvan Tomkins [see glossary]) look for patterns, sets of regular discharge in behaviour; habits are repetitive patterns; experience is the animated time-stretched set of all these patterned emotional state-spaces. (Tomkins, 1992)

66 From this perspective emotions and consciousness overlap, yet the connotation of emotions is preferable for the purpose of our argument because it implies embodiment whereas consciousness is a disputed term with connotations of logic and self-reflexive awareness.

67 Seaman’s project extends far beyond my own. He is assembling a transdisciplinary team to develop a sentient electrochemical substrate called Thoughtbody.

68 I cannot claim to have ingested anything more than an inkling of Tomkins thought. By reducing it to axiom, I hope to have not damaged its extreme intricacy.
universe), it can also be claimed that only by voyaging into the mythological unknown and slowly and tenaciously extracting little vivid glimmerings of insight has humankind advanced in its comprehension. On this basis, this thesis claims that art is authentic research into the roots of meaning.

4.5 Poetry is the Information Visualization of Emotions.

"All the new thinking is about loss / In this it resembles all the old thinking." Robert Hass, "Meditation at Lagunitas" from Praise. 1979.

In order to establish the relevance of poetry as a legitimate method of research (not as a subject of study) in academia, it seems necessary to ensure its legitimacy in scientific terms by returning to its root etymological meaning. As already mentioned, in the 3rd century BC, Aristotle's Greek 'poiesis' connected poetry to making (Whalley. 1988).

From this root meaning of 'poetics', artists and poets are makers. What do artists and poets make? They make patterns: visual patterns, rhythmic patterns of words, sonic patterns, physical patterns (sculpture), embodied patterns (dance, and now in digital poetics: dancing words) and conceptual patterns. Art making is pattern-making. Art research is the interpretation and analysis of those patterns.

What do poetic or art-language patterns represent? Robert Hass in an interview (Hass 1998) cautions how poetic language is too complex to fit only one theory, so any definition I offer should also be considered contingent. For the purpose of this thesis, art-patterns represent lived experience. What is lived experience? It is the accumulated mind and bodily memory of many instantaneous patterns and state-spaces of a body: experience is by definition confluence of memory, meaning and emotion; body is any self-defined entity-structure. In other words, experiences are records of body-mind state-spaces (patterns of biochemistry). This means that art-research is quite tightly entwined with psychology-physiology, because it is concerned with how we perceive and what we perceive from within our embodied state.

Why do I refer to poetry as the information visualization of emotions? In its contemporary definition, information visualization is a design science arising from computationally enhanced interpretations of data: graphs, charts, flowing particles. The Wikipedia definition of information visualization is sufficiently representative for our purposes: information visualization is "computer graphics and user interface design

69 Speculative (yet valid) research questions for an art-researcher devolve to archetypal cosmological concerns such as: What is Love? Why Death?
that are concerned with presenting data to users, by means of interactive or animated
digital images."

Yet information visualization seems too quantitative to represent accurately the complex
qualitative nature of lived emotional embodied experience. This emotional complexity is
why poetry becomes necessary. Each information-visualization (info-viz), as designers
well know, is a chosen representation of a complex set of data. The data is necessarily
constrained and given an illustrative form; this form is an abstraction that attempts to
synthesize or condense data so that it reads easier. What allows us to attribute this
exact scientific process of info-viz to the ambiguous realm of poetry? Poetry tries to
condense the complexity of the body's emotion and processes of experience into a form
that is readable; poetry attempts to communicate complex convulsive patterns of
intuited embodied knowing.

And what is happening to poetic language and lived experience as it encounters the
digital? Digital poetry fuses with other sense modalities: image (moving and static), text
and sound amalgamate. They network within and beyond the body. Opportunities exist
for poetry to synthesize diverse threads from numerous domains. It often does not
succeed, like information-visualization it must constrain the data into an abstract
representation, yet poetry attempts to offer, through language, insight into experience.
It attempts to communicate the trends and tendencies of the dynamic living system in
which all life is inextricably informed.

4.6 Information Visualization and Soul as a State-Space

"Every expression of human mental life can be understood as a kind of
language, and this understanding, in the manner of a true method,

Poetry is a form of information visualization because it transduces emotional patterns
into words; in conjunction with a network interface, it becomes an epistemological tool:
the skin of the species. Embodied patterns that are too complex to currently be
analyzed quantitatively or scientifically (love, sacrifice, transcendence, ecstasy), these
emotional patterns are the domain of poetry. I am arguing in this thesis that a
fundamental task of digital poetry is to transcribe analog embodied emotional
experience into code, language, video and audio.
Why? Let us use a problematic word: soul. Let us give it an arbitrary axiomatic and contingent definition: soul is the totality of the body-mind state-spaces, both potential and actualized, whose processes are too complex to understand quantitatively. That said, the 'soul' is evidently an abstraction of emotional patterns, the emotions can be understood as abstractions of biological or neurological patterns. Poetry exists as a linguistic abstraction, an attempt to exteriorize in language, at different levels of resolution, internal (physical, emotional, spiritual) states. Poetry is thus the information visualization of the soul.

4.7 Emphasis in Current Poetics Theory

Currently, there is a lack of emphasis at a theoretical level in dealing with aesthetics, intuition and emotions in digital poetics. This gap exists due to several convergent factors. First, academies privilege that which can be discussed. Intuition, emotions and aesthetics are intimate, qualitative and complex; they do not render easily in the language of formal research. Second, the term new media encourages a vision of computer art as sterile, discontinuous from artistic traditions. Lev Manovich (building on Innis and McLuhan) stresses how new media is distinct yet continuous with previous media (Manovich. 2000. 40-52). This insight which has swiftly consolidated into axiom, encourages an exclusive critical focus on work which investigates the materiality of media as new. Digital poetic work that simply utilizes new media as expressive tool risks being stigmatized as naive.

The evolution of technology connects digital technology to a continuum of tools which have been utilized for millennium by humans to build expressive forms. New media is therefore, apart from its distinctive features, an aspect of ancient technology; and if technology's evolution is compared to biological life, technology is interpretable as the 7th Kingdom of biological life (Kevin Kelly, 2005). Naive emotional and aesthetic (along with formal and conceptual) methods have coevolved symbiotically with this living technology.

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70 In my readings of Manovich, I tended to bias toward his demonstrations of the newness of media. I believe this tendency is not isolated to myself, and it has led to a subtle pervasive sense in new media discourse that computational arts are somehow incongruous with old emotional and aesthetic concerns.

71 Kelly argues that technology is evolving and demonstrates the traits of a biological Kingdom. His viewpoint dissolves the classic distinction between machine and nature suggesting a more holistic view of evolution.
I argue for a continued inclusion of naive, intuitive, emotional and aesthetic approaches, and a sustained engagement with the issues that arise from emotional and aesthetic complexity. Speculatively, the fundamental root motivation for the creation of art can be traced back to existential ignorance about death and love: What is death? What symbols express grief? What symbols express love? Myth was the classical tool humans used to consolidate memory and coalesce responses to these questions. In contemporary society, our existential ignorance remains the same: both love and death are mysterious apparatuses. New media art, which deals with these fundamental thematics, is neither retro, naive nor obsolete.
Emotion and meaning have a long and controversial history in literary criticism. Digital poetics is part of this tradition. This brief chapter examines how the poles of critical attention have modulated over the decades. All forms of analysis of literary criticism to some degree involve an analysis of reader-writer-text relations. Where is meaning? in the text? in the author's intention? in the reader's response? Probably in all three. Regardless, these questions, which have been debated extensively over generations, are made even more problematic and contentious when computer code, multimedia content and networks are introduced into literature. Suddenly the number of potential questions increases sharply. What is technology's role in meaning production? How large a factor is the computer in reading/writing? At what level is the interpretation of digital media necessary: binary, assembly, IDE, GUI? Is interface design a science of functionality, or an art of seduction? How much emphasis is appropriate on each aspect of the digital poetic work? This chapter looks at these questions in the context of Wimsatt's notion of affective fallacy and Stanley Fish's notion of interpretive communities.

5.1 Expanded Writing and Reading in the Age of Interface

"... technology ... has introduced in the domain of reading the possibility for the author to redirect the reader's path through a mass of text" Christian Vandendorpe (Vandendorpe. 1999. 183).

Consider the traditional author: he/she writes text that is eventually displayed/read by reader(s). In digital poetry practice: writer writes code in authoring software that influences the display of networked text; or a writer conjoins sets of audio-visual data within a programmed environment, and/or develops software that generates the text that is seen by reader on a distant screen in a multimedia environment. Digital writing necessitates an expanded notion of writing.

Digital poets are, by necessity, interface designers. Since interfaces are read, interface design theory must be coupled with theories of reading and theories of the reader. The
user-reader relationship with interface is complex. Experience, aptitude, age, gender, operating system, culture, sensibility, interests, moods, network latency: the list of potential factors which influence or bias response to any interface are huge. Additional complexity is introduced in digital reading by the differing degrees of interface literacy, the constant evolution of GUI syntax, the lack of formal ubiquitous interface standards, and the rapid changes in the technological capacity of the medium itself that alters readers' relations to read art-works (innovative today, obsolete tomorrow).

To explore questions of the reader-writer-text-interface, it seems prudent to examine how literary theorists have approached these questions in the past. The following sections deal with two seminal theorists who disagreed. Their disagreement has resonance and offers insights into contemporary questions concerning materiality and affect.

5.1.1 Wimsatt: Affective and Intentional Fallacy

In a series of influential essays composed between 1941 and 1952, W.K. Wimsatt critiqued what he perceived as imbalances in literary criticism. Critics who attributed too much power to the poet's intention committed the Intentional Fallacy; critics who over-concentrated on the reader's emotional response committed the Affective Fallacy. For Wimsatt, over-concentration on the reader's response was a form of "epistemological skepticism" (Wimsatt 1954. 21); paying attention to the reader somehow constituted a form of doubt about the text's value as knowledge. To some degree, Wimsatt's analysis is accurate; a balanced approach seems advisable. Wimsatt is also correct in assuming that once the role of the reader in constructing meaning is considered, then the role of text as authoritative object that contains irrefutable meaning is challenged; for Wimsatt this challenged the foundation of a worldview that relied upon semantic certainty.

From a contemporary perspective infused with post-modernist sensibilities, quantum indeterminacy and other relativist viewpoints, the dissolution of absolute meaning is not a crisis. The problem from a digital poetics point of view in adopting this style of critical approach, is that Wimsatt's approach focuses almost exclusively on the text; it depends on the existence of a shared traditional interpretation of text. In the digital domain, no such established tradition exists; texts are networked, cross-cultural, there

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72 To a significant degree Wimsatt's rejection of the role of the reader's emotions in literary theory can be understood as being caused (ironically) by his personal biases; he read the current critical climate in a way that was very concerned with ensuring a preservation of cultural values that his personality needed. His criticism therefore unintentionally proves what it intended to disprove
is no guarantee of a shared community of interpretation. The genre and medium are not even mature enough to have coalesced the sustained critical discourse that creates canonical interpretations. Due to the youthfulness of digital media, the instability of its forms and its evolving capacities, an exclusively textual analysis has only limited applicability to digital poetics.

5.1.2 Fish: Reader Response Theory and Qualitative GUI Design

Literary criticism evolved (or re-evolved) in the mid-twentieth century to incorporate the idea of the reader as an active participant in the construction of meaning. Stanley Fish (interpretive communities), Norman Holland (psychoanalysis of reader), and Louise Rosenblatt (1938 transaction analysis) each developed theories that emphasize the role of the reader as an interpretive agent. In "Is There a Text in This Class" (1980), Fish argued that readers approach texts with interpretive bias that constructs their experience of it. For Fish, the sameness of how many texts are experienced is due to 'interpretive communities' who share and propagate meanings (Fish 1980). Holland’s work emphasizes the psychological matrices of wishes and fears which make each reader's experience of a text unique; Holland believes that asking “What is art? also asks, What is mind?” (Holland 2001).

Reader-specific interpretive analysis opens pathways to understanding the interface as a process that occurs at differing levels of scale: cognitive, social and psychological. These approaches share affinities with user-centric design theory and the role cognitive science plays in testing user response to interface stimuli; they emphasize the role of reader-user as a dynamic that occurs in an embodied social context. GUI design is increasingly informed (both intuitively and empirically) by the reality of the reader, and not the idea of a singular generic reader, but a multiplicity of readers. The demographic diversity of tastes, aptitudes and experiences that access websites is vast.

73 I am indebted to Richter (2007. 962-78) for an overview understanding of the evolution of reader-centric theorists.

74 Holland also considers neuroscience as a viable tool for comprehending poetics: "Understanding the brain processes that use universal grammar suggest the special "exercise" function of poetic language. Metaphor as embodied thought is probably hard wired in the brain also. The sociality inherent in our brains explains audience and reader response. Systems in the brain for a persistent identity explain also the persistence of artists' styles. Infants' experience with animate and inanimate objects may explain our dual experience of literature and the arts: emotional and analytical." (Holland 2001. 1) and "A brain-based pattern of affect regulation will be the neurological basis for the identity theme we infer as we observe an individual's choices. Schore's stages leading to lifelong patterns of affect regulation correspond in neurological terms to Lichtenstein's identity theme arising from early mother-child interactions and my literary concept of a style that derives from early childhood experiences." (Holland 2001. 7)
In my practice-based research, I approach GUI design with a painter-poet's sensibilities. Since the confluence of design variables in my work is too complex to reduce without harming or destroying the actuality of the art-work, quantitative testing is not feasible. All user testing is qualitative and informal. I rely on my own instincts as a trained artist; and occasionally sit down and watch a friend navigate my sites. Design iterations triangulate between my own responses, the response of others, and the interface itself. This form of analysis is generalist; it seeks to understand through practice and design iterations how art can be made that has an effect locally on me, the artist, and hopefully on others. It is assumed that work that resonates and 'works' intuitively and visually for one being will invariably have some sort of audience (how ever marginal that might be) 75.

75 A reality of poetry is that it is marginal. So user testing to see if a digital poetry interface is interesting or engaging has little relevance since people only occasionally, in the correct moods or modes of mind, find poetry interesting or engaging. The tests that can be made are for general comprehensibility of navigation.
CHAPTER 6:  
VISUAL (AND MULTIMODAL) LANGUAGE

Contemporary digital poetic practices are categorically instances of visual language. Multimedia digital poetry that manipulates/animates text, and incorporates images and video is preceded by millennia of visual language. Placing multimedia in a perspective that spans millennia offers insights into contemporary practice. The extensive history of visual language also offers an opportunity to introduce the idea of visual epistemology. Since my practice is a hybrid of visual art, poetry and interface design, links to synaesthesia occur naturally. This chapter examines the domain where image, language and knowledge are conjoined.

6.1 The Origins of Visual Language

The fusion of language and image has ancient roots in the first symbolic transcription technologies: cave paintings, cuneiform, hieroglyphs, and mandalas. It is reasonable to conjecture that humans began making languages by making symbols: tracing curves and paths in the sand, smearing pigments on their flesh and cave walls, drawing images to communicate experience. As Allan Fletcher notes in *Picturing and Poeting* (272): “The Ancient Greeks had only one word for writing and drawing, and that was *graphein*, which originally meant to scratch, scrape or graze.” These first primary explorations of symbolic culture were probably accompanied by sounds and gestures, grunts and snarls, glottal hisses, clicking of teeth. I feel that these gestural, audible and visual amplifications of communication are being revisited by multimedia digital animated text.

6.2 An Overview of Visual Language Practitioners

The impulse to conjoin language and visuals has ancient roots. *Pattern Poetry: Guide to an Unknown Literature* begins by stating: “The project of documenting all pattern

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76 Evidence for the “gestural hypothesis” of language origin, see “Ape Gestures and Language Evolution”, Pollick and de Waal 2007.
77 Higgin’s title reference to “Pattern” reinforces my hypothesis concerning poetry as the information visualization of emotional patterns. The exteriorization of internal states constitutes pattern creation.
poetry...can never be finished." (Higgins. 1987. 2) Higgins' work extensively documents pre-1900 visual language: from Simmias of Rhodes (ca. 325 BC) through medieval cross, sun, heart and flower-shaped poems to calligraphic labyrinths, mandalas, Egyptian stelae, coat-of-arms, bridal garlands, lovers knots, and beasts drawn with Chinese characters.

In the 20th century most commentators recognize Stéphane Mallarmé's *One Toss of the Dice Never Will Abolish Chance* (1897) as a seminal visual language poem. Mallarmé is often mentioned in conjunction with Laurence Sterne and George Hebert as precipitating a concern with typographic innovation in western literature. This influence led to the Lettristes (initiated in 1952 by Isidoure Isou), *Noigandres* (a 1952 literary magazine and movement initiated by the brothers De Campos), and the Concrete poetry movement – which includes writers as diverse as Emmett Williams, Steve McCaffery, bp Nichol, Johanna Drucker, Tom Phillips and John Cage. Concrete poetry often focused on the formal didactic qualities of print media to the exclusion of emotional expressivity, yet the fundamental approach has many affinities with digital poetics practice.

### 6.3 Visual Language as Distinct Genre

Reading occurred relatively recently in human history. Human language --the first scratches of a formal systematic meaning-- occurred in the scale of history of the planet within the most recent few seconds around 1700BC (Drucker 1998. 224). Yet in human terms, 4000 years is a long time. This sustained conjunction of visuals and language clearly delineates the distinctiveness of visual language as genre. Richard Kostelanetz writes:

"We are coming to recognize visual literature as a distinct genre whose measure is simply the visual enhancement of language. Once the concept of a distinct genre is in mind, we can acknowledge that visual literature can appear in many media, only one of which is books...." (Kostelanetz 1992. 2007)

Kostelanetz's reference to "many media" concurs with my feeling that visual language leaps opportunistically from technology to technology. Visual language in multimedia contexts is ubiquitously present in advertising, film credits, installations, and net-art. Speculatively, future poetries will be designed as holographic immersive experiences or

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78 John Cage practiced mesostics: a compositional form he developed for mutating text around a key column of letters usually extracted from some other text (James Joyce was utilized by Cage).
sculpted like nootropic drugs to dive into the visual cortex and alter the Visual Word Focus Area\textsuperscript{79}.

Regardless of the media, regardless of epoch, a few general characteristics reoccur in visual language. Letters are tiled, tilted, swerved, stood to resemble the environment, iconized, cartooned, and made into recognizable entities (rose, nebulae, and clouds)\textsuperscript{80}. In contemporary digital uses, there is a tendency to utilize letters as flocks or particle systems. Words possess basic physical characteristics such as collision detection and elasticity. This incorporation of basic physics into words continues the tendency of visual language to mimic or become representative of pictorial units\textsuperscript{81}. The logical extension of this trajectory leads toward a fusion of text and image that is analogous to creature and habitat.

\subsection*{6.4 Visual Language as Epistemology}

"We do not yet have a systematic curriculum or literature for visual epistemology. And that's amazing. We don't have it. And if there's ever been a time when we need it, it's now...[we need a theory of] the physiological processes, the information and cognitive processes...the circumstantial and structural aesthetic features, the rhetoric of visual processes..." Johanna Drucker at UCLA (Drucker 2007).

As an art-research practitioner whose work is heavily dependent on images (video, stills and text as image), I consider myself an empirical advocate for the formidable epistemological capacity of images. Images perform a large (occasionally disparaged, often underestimated) epistemological function. I do not claim to be proposing a cohesive visual epistemology, but want to introduce an argument for the capacity of visual language as epistemological media. Vision research has recently accepted the concept of the 'gist': the quick immediate and comprehensive visual apprehension of a

\textsuperscript{79} Neurological evidence (Gaillard et al., 2007) suggests evolution has relatively quickly produced a dedicated processing centre devoted specifically to the new channel of visual language communication: the Visual Word Focus Area (the left occipitotemporal).

\textsuperscript{80} In almost all visual language, there is a focus on the edge of the text. Its boundaries, borders, and shapes can be interpreted as representations of identity. Visual language operates to keep the known known; and paradoxically (since we are complex creatures) visual language also expresses obscurity, ambiguity and esoterica.

\textsuperscript{81} The challenge for art-research scholars is to keep the practice-based experience alive while developing the metaparactice of theory which offers insights into how the experience of art occurs. Over the course of my research I have assembled over 3,000 jpg examples of visual language. They cover most historical phases of human history (with an emphasis on late twentieth century works) and meander over numerous disciplines, artists and continents. What general conclusion can be drawn from looking at this mass of images? Drucker emphasizes how the role of pedagogy is to "make explicit the models and conventions that it is generally assumed we do not have a language for." (Drucker 2007).
subject. This gist is processed through very rapid analysis of visual information. I
speculatively propose that sustained contemplative viewing of images (such as is found
in art viewing) can be conceived of as a chain of 'gists' which permit the viewer to derive
turbulent subtle associational concepts; these 'gist' chains express visceral and tactile
embodied qualities that are subjective, emotional, and difficult to transpose into theory.
Linkages form by the elusive “rhetoric of visual processes” that Drucker alludes to. The
filmmaker Andrei Tarkovsky endorses a process of “associational linkage, which allows
for an affective as well as a rational appraisal” (Tarkovsky. 1987. 20). As associational
linkages aggregate (neurologically and symbolically), it can be assumed they form
patterns; patterns (as previously discussed, see Kelso or Picard) constitute emotional
information which precipitate meanings. Visual language is therefore emotional
information entwined with semantics.

6.5 Visual language as Synaesthesia

Considering visual language as an enhancement or enriched informational channel
leads directly into a brief consideration of synaesthesia since synaesthesia combines
sensory data from different sense modalities. In this context, I am using synaesthesia
not in the strict neurological sense but in a very loose sense to refer to the human
tendency to mix sense data from different modalities like color and form. I am also
referencing the human tendency to attribute or judge some mixtures of senses as being
somehow intuitively right or correct, while other mixtures are less right. This tendency to
find rightness suggests a hard-wired neurological foundation for aesthetic notions of
form.

Although synaesthesia has long been considered abnormal, cross-modal brain
communication is receiving renewed scientific credibility. Onomatopoeia, the mapping
of specific sounds to specific objects/activities has long existed; Gustav Fechner, the
father of psychophysics, created tables of correlated color-tones (Ione, Tyler. 2004. 59) ;
Cytowic (1993, 2002) has created book length studies of the subject; Ramachandran
and Hubbard’s (2001) research investigating sound-object correspondence, the
correlation of sharp sounding words with spiky shapes and soft round sounding words

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82 In an academic climate where images were conceived of as having equal epistemological value
as words, probably there would exist thesis which were predominantly visual. This argument
could extend as well into gesture, dance, and sound thesis. It is one of the fundamental illusions
of our society that words transmit information faithfully; that the act of reading is the act of
receiving text not interpreting it. For a fuller treatment of why reading is also an interpretive act,
see the section in this thesis on Reader-Response Theory and GUI Design.
with soft curved forms, has been confirmed by subsequent studies (Maurer et al., 2006). Sufficient evidence exists to suggest mobile text and visual language typography create or augment meaning (or fail to augment meaning) by how well they correspond to implicit synaesthetic reflexes.

The neurologist Vilayanur S. Ramachandran’s hypothesis concerning synaesthesia being due to a lack of pruning between adjacent neurological modules (Ramachandran, 2001) has been confirmed experimentally (Romke and Scholte, 2007). Rather than a deficit, synaesthesia represents an excess of neural interconnectivity. Metaphorically analogous to the symbolic affinities and meanings which sprout from poetry (ambiguity is an excess of interpretations), synaesthesia condenses and duplicates perception so it becomes more memorable. A.R. Luria’s renowned study of the mnemonist S. is the story of a synaesthetic whose capacity of memory was apparently limitless (Luria, 1968). Visual language evidently leverages latent synaesthesia tendencies of the brain: form becomes both linguistic (as in the structure and style of the language) and aesthetic (related to visual representation).

It is my contention that the future of literature will evolve toward a fusion of visuals and language, an addition of motion as an indicator of emotive quality (affective valence) and eventually integrate tactile and haptic biofeedback that are currently beyond the reach of normative networked keyboard-mouse-camera interfaces.84

83 A. R. Luria’s *The mind of a mnemonist: a little book about a vast memory* is an exquisite example of qualitative scientific research.

84 It is also interesting to note in this context an additional speculation: based on current trends, vowels may disappear or their roles may change in vernacular language. Ong in *Orality and Literacy* describes (citing Havelock) how the introduction of vowels into Greek (700 BC) contributed to the development of analytic thought by promoting readability. A new generation of handheld palm-size screens may favour the evolutionary selection of modes of language that are without vowels as in txt msg.
CHAPTER 7: DIGITAL LANGUAGE PRACTITIONERS

"The web is a pretty difficult space in which to create an expressive surface for text. It seems to me that the web is all edges and without much depth and for a writer that is trouble. You want to induce depth, to have the surface give way to reverie and a sense of a shared shaping of the experience of reading and writing. ... language finally finds its natural element in motion, not in a window but as a window, not as a single surface but as the aural, visual, and proprioceptive experience of successive surfaces" Michael Joyce (Joyce 1997).

It has been 10 years since Michael Joyce, the hypertext pioneer, spoke (see the preceding quotation) at MIT in a talk entitled Forms of Future. Since 1997, changes in the technological capacities of the web (bandwidth and authoring software) have changed its expressive potential as a tool for literature. In this chapter, I demonstrate through the introduction of numerous examples that the expressive capacity of web writing is ripening to maturity; the web is now an expressive surface. Increased bandwidth, in conjunction with improved data compression, is presenting novel opportunities for online poets to integrate interactivity, text and audiovisual material with typographic innovations. The web may not yet include smell or touch, but it is rapidly evolving toward full 3D multimedia streaming capable of depth and nuance.

This chapter begins by introducing the first digital poets, offers homage to the earliest video-poets pioneers, introduces a few non-interactive online video poems, and mentions the Electronic Literature Collection Volume 1. In assembling any sort of overview in an era when the rate of cultural production is rapidly increasing, inevitable omissions will occur. I do not touch on the hypertext narrative realm since it is extensively discussed elsewhere and is only tangentially germane to my subject. In general however, the focus is on work that is interactive, multimedia and designed specifically for the web. In-depth focus is reserved for several recent (within the last year) online poetic projects particularly appropriate to the subject of this thesis: projects

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85 Digital poets not included (but worthy of mention) in my overview include: Dene Grigar, Diana Slattery, Nick Montfort, Mark Amerika, Stephanie Strickland, Dan Waber, Jeffrey Shaw, William Poundstone (whose work synthesizes beautifully theory and practice http://www.williampoundstone.net/ ), Camille Utterback, Darren Wershler-Henry, Jim Rosenberg

86 Research into digital poetics in CAVE environments, holograms or in installations is beyond the scope of this thesis. If interested see Bill Seaman, Eduardo Kac or Nick Montfort.
that exhibit a hybrid aesthetic of language and image. The associative symbolic linkages that they suggest reinforce and resituate the questions of how affect, emotion and aesthetics are implemented in contemporary digital poetic practice. The chapter closes with a case study of three corporate Flash websites and a discussion of advertising as an exemplar of technological poetics that directly and consciously manipulate the viewer using aesthetics and affect. An argument is developed for the adoption of the aesthetics (not the ethics) and affective sophistication of advertising by digital poetics.

7.1 The First Computer Poems

Many historians have studied writing and media (preeminently Havelock, McLuhan, and Ong); many others have chronicled the path from “papyrus to hypertext” (Vandendorpe, 1999). I will not duplicate their research here, except to note the sustained engagement of poets with media, including computation. In tracing the history of computer-generated poetry, Andrew Klobucar identifies the agreed-upon earliest computer poetry as Theo Lutz’s 1959 Stochastiche Text; and the first machine-written book as William Chamberlain’s 1984 The Policeman’s Beard is Half Constructed (Klobucar 2006). In the course of my research, I encountered a few other early computer-assisted poems.

Notably, in 1967, Alison Knowles87 created House of Dust with composer James Tenney (Higgins 1970, 12) using Fortran to manipulate a list of 5 words and produce variations on a triplet. The poem is remarkably successful as poetry: it is simple, raw and evocative. The program produced output in 1.64 minutes that had taken 16 hours to type by hand (Higgins, 1970, 6).88 In 1983, bp Nichol produced First Screening, a dozen animated poems, on the Apple lIe using BASIC (Andrews et al., 2007). Each of the preceding works represents attempts, constrained by the technology available, to utilize the pattern-producing capabilities of the computer to generate literature: seeds of the cumulative, increasingly sophisticated work of the future.

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87 In the physical art-world, Knowles also built an 8ft tall book called ‘The Big Book’ which contained a stove, chemical toilet, etc...and was designed to be lived in.
88 Higgins, who co-founded Fluxus and was Alison Knowles’ husband, coined the term intermedia referring to work which was interdisciplinary such as the Happenings: “continuity rather than categorization is the hallmark of our new attitude” (Higgins, 1969, p.27)
7.2 Video Poems

7.2.1 Pioneers: Konyves, Kearns, and the Vasulkas

Video-Poems are distinct from digital poetry in that they preceded digital technology and rarely (except in the case of programmed Quicktime panoramas) incorporate interactivity. Since my own work incorporates a significant amount of video, it exists as a hybrid practice in between visual art and language. I include the following (very selective) history of a few pioneers in order to reveal the historical depth of the practice of machine-aided visual language practiced by artists who exist on the boundary between poets and visual artists. Among the earliest practitioners, the Vehicule poet Tom Konyves in the 1970s incorporated non-linear Dadaistic agit-prop performative poetry into videos that he called "VideoPoems" (Konyves 1982). Although not strictly considered poets, the video pioneers Steina and Woody Vasulka incorporated 3D text, language flying over landscapes, chroma-keying and recursive effects into experimental video throughout the 1970s (Vasulka et al. 2000). Lionel Kearns, an experimental contemporary of bp Nichol, created an animated NFB film in 1973 called "The Birth of God/uniVerse" (cine-poem, 16mm., sound, 3 1/2 min.) with Gordon Payne, which suggests a succinct visual binary ontology.

7.2.2 Billy Collins: Action Poetry

"Time-based typography is no longer a novelty with a limited application in film title sequences, it has matured into a discipline..." (Woolman 2005).

At a populist level, many music videos and film credits have popularized the genre of text and video throughout the 80s up until the present day. In the contemporary web world of video poems, there are differing layers of skill and sophistication from YouTube to viral videos. Billy Collins’ action poetry video-poems (done in collaboration with some very strong motion graphic designers from the advertising world) constitutes an effective example of a viable synthesis of ad skills with art sensibilities to arrive at an aesthetic that is approachable without being trite. Poetry in this mode has what Charles Bukowski refers to in Poetry in Motion as “moxy” (Mann, 1982). Words as liquid milk adhere to walls in Hunger (animated by FAD); book bindings and contexts are sinuously erased in Forgetfulness; and pens chase autonomous glyphs across desks in Budapest (both animated by Julian Grey). These works are digital poetics without any user interactivity or algorithmic real-time elements, pure descendents of film. As the

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90 “The piece, The Birth of God, was originally a typed poem, similar to the typeset version in ‘A Few Words’. It first appeared in a British poetry magazine, Talloc, edited by Cavan McCarthy, in 1965... the concept of visual interpenetration of the 1s and 0s ...[reoccurred ] in the 1973 film” Lionel Kearns (email correspondence with author).

91 The videos are online at http://www.bcactionpoet.org/.
offspring of a mature discipline, they are often easier to emotionally assimilate, and far more numerous (if one includes film titles) than any interactive generative works. They demonstrate, in the somewhat contentious modernist sense, the strength of the artist at sculpting interest in an artwork.

7.3 Contemporary Overview

7.3.1 Electronic Literature Collection Volume 1

Released on October 27, 2006, The Electronic Literature Collection Volume 1⁹² (Hayles, Montfort, Rettberg, and Strickland 2006), documents a wide diversity of web-based digital poetics from the past decade. Due to limited space, I will mention only one representative poet from this collection. Jim Andrews has three different pieces in the collection. Andrews, coming from a background in poetry and music, creates a wide diversity of visual poetic works for his http://www.vispo.com website, mostly within DHTML and Director⁹³. Andrews’ work crosses genres and anticipates an era where programmer, musician, gamer and poet coalesce into a transdisciplinary amalgamation. Many of the works in the ELO collection coalesce cross-disciplinary tendencies, poet-programmer-theorists being the predominant blend. The collection reveals a diversity of genres and approaches too numerous to catalogue here. In fact, it represents the most comprehensive collection of online digital poetry work specifically informed by theoretical concerns ever released. Since the works in the ELO collection are well-profiled in the digital poetics community, and the ELO is at the core of numerous curriculums, I have chosen to simply just mention the ELO in order to focus on works that inhabit the periphery of the main community. As a result, the following sections focus on a few works not included in the ELO collection, and specifically on works which utilize a hybrid of image and text in ways that are related to aesthetic-affect.

7.3.2 Born Magazine: Poet and Interactive Artist Collaborations

An important practice-based outlet for digital poetics is Born Magazine⁹⁴. It describes itself accurately: “Born Magazine is a quarterly publication that brings together creative writers and interactive artists to create experimental, media-rich literary arts

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⁹² The ELO Collection is available online at http://collection.eliterature.org/
⁹³ Jim Andrews has published extensively online. His work as archivist includes the appeal: “O ye digital poets: the past of the art is in your hands and it is you who must recover and maintain it.” (http://vispo.com/bp/introduction.htm)
⁹⁴ Born Magazine is online at http://www.bornmagazine.org
experienced only through the Web" (http://www.bornmagazine.org/about.html). As of July 2007, Born Magazine has 386 projects in their archives. The collaborative process tends to encourage works that are multimedia and have very polished design. Since “interactive artist” is almost invariably a pseudonym for “advertising freelancer,” the works are also often beautiful and elegant. The project operates on a volunteer basis and is an extraordinary cultural archive of online digital poetry.

If the premise of art as research is accepted as viable, then Born Magazine constitutes a laboratory of interactive design. On the site, the works are in the foreground, while theoretical discussion or framings are virtually non-existent. Yet from the perspective of raw visual epistemology, Born Magazine satisfies the criteria for knowledge creation through art-research. Many of the works have unique idiomatic animations, graphics that enhance the semantic texture of the poems, and interfaces that operate as commentaries on the poetic text’s content. In this way, Born Magazine is the preeminent example of the assimilation by digital poetics of advertising interface and design aesthetics. These works operate in an interstitial region that is visual art and language art, poetry and popular culture.

7.3.3 Robert Bowen (2005): Textscapes

In an unreleased work (except for screenshots), Robert Bowen places text onto 3D models called Textscapes; the models are carefully designed to amplify the meaning. In the image shown, Lewis Carrol's Alice in Wonderland maps onto a wormhole suggestive of a very tidy vortex of quantum weirdness. Form and content fuse; concept and corporality join; the result (for me as a reader/viewer) is a synaesthetic jolt. This jolt is due to Bowen’s attentiveness to the aesthetic aspects of his creation and his fastidious preoccupation with the visual quality of the image. As poetry leaves the paper page, the expanded capabilities of digital media suggest that fusions between the visual arts and poetry will be fertile areas of exploration. I include Bowen’s work in this overview just to emphasize how future directions of affect-aware and aesthetic visual poetry will not necessarily be anti-intellectual. The conjunction of synapse, viscera, and artistic skill constitute a fertile substrate for continuing evolutions.
7.3.4 Myron Campbell (2006): Distant Air

"The word Merz denotes essentially the combination, for artistic purposes, of all conceivable materials, and technically, the principle of the equal evaluation of the individual materials. A perambulator wheel, wire-netting, string and cotton wool, are factors having equal rights with paint". Kurt Schwitters, 1919. (Century. 1998).

Online text animation technology has now passed the point in its evolution where it is opaque and mysterious. Flash, Javascript, Processing, java, DHTML and Director are each established software communities; networked computers are now a normative feature of the cultural landscape; and a generation is emerging who have never been without them. As such, they display a tendency to regard software as tools that simply assist the artist in communicating vision. This constitutes one of the evolutionary life points of a technology: a stage at which the notion of Merz assemblage gives birth to hybrid team-based works.

Among the emerging generation are digital poet-polyartists whose dexterity with the software authoring tools renders the medium’s materiality transparent and irrelevant. Emphasis is shifting as it did in literary criticism to the semantic and humanistic aspects of the work. A representative work is Distant Air (2006) by Myron Campbell. Distant Air is a compendium of stylized, highly accomplished visuals and brief poetic
The text content, ironically and sparsely interspersed among intricate visual facades, is a concise, personally evocative and poignant memoir on the death of birds. Robin, crow, seagull, chicken: “It was the first time I'd ever killed anything before” (Campbell. 2006). This highly idiosyncratic and effective weaving of aesthetic elements and merging of interface design with traditional subjective meditations on death constitutes one potential evolutionary path now available for digital poetics at this stage of its development.

The previous generation's theoretical foregrounding of materiality can be considered a corollary of the newness of the media; its alien-ness and foreignness evoked an almost obsessive scrutiny of its functionality. To draw a spurious although relevant analogy, it
is as if digital technology in the 80s and 90s was a newborn baby; like incessant parents, theorists gathered to scrutinize its feces. Now that the baby is a little beyond being a toddler, it is less an object of fetishized adoration and more a potential nuisance. It begins to establish an identity. It becomes less an object that needs to be constantly fed and cared for, as it is developing into a subjective entity with a distinctive identity.

7.3.5 Gregory Chatonsky (2007): Flussgeist

As the central focus for a generation of academic poets, the LANGUAGE poets’ preoccupation with materiality exerted a strong influence on contemporary theoretical practise. The central stylistic features of a LANGUAGE poem can be very roughly simplified as: unconnected phrases, intentionally deconstructed narrative focus, hybridized spatio-temporal locations (the phrases seem to come from different times and places), and mixed lingo from different domains95. This style of writing is computationally tractable; it can be replicated and fairly easily emulated in digital media. For example, Gregory Chatonsky’s Flussgeist (2007)96 extracts its source texts from Twitter rss streams97 (tiny text messages that are migrating like starlings in public space among the PDAs of conference-goers). The patterned ecosystem of live real-time txts is mixed with video footage from a railway station, the Twitter user icons, and a Flickr feed of photos that (I assume) are based on keywords extracted from the rss feeds.

95 For examples of LANGUAGE poems, see Poems for the Millenium (Rothenberg and Joris. 1998. 662-679)
96 L’attente, the waiting / Flussgeist 1 (2007) Gregory Chatonsky is online at http://www.incident.net/works/flussgeist/waiting/
97 Twitter is web 2.0 site that allows users to post immediate mass txt mssgs : http://twitter.com/. In early 2007, it became a hot item adopted at several conferences.
A collective of networked txt msg writers who are unaware or unconcerned with the online poetic context into which their words will be integrated essentially replaces the author. The artist-poet (Chatonsky) becomes an information architect who fuses this evolving dynamic undulant topological skin of twitter data into a website, creating a single evolving infinite video-text-poem. The effect is, like the best of LANGUAGE poetry, sporadically absorbingly hypnotic; and the linguistic style is the same (disconnected phrases, intentionally deconstructed narrative focus, hybridized spatio-temporal locations, and mixed lingo from different domains).

In contrast with page-based LANGUAGE work, in Flussgeist, in the live feed (the page) the work never repeats. Everyone within that network writes it new each moment. Repetition, accumulation, variation and redundancy ricochet through the network. Language constructs itself. The digital poet is a voyeur who allows others to listen and look through the perforated space that the network creates. Flussgeist suggests that future digital poems may be hovering networked mashup zones where humans nourish their appetites for absorbing anonymous patterns.

The strength of Flussgeist, however, and where it diverges from the language theory and enters into the realm of aesthetically-accomplished visual language, is in its use of video. The background to the words is a series of contemplative video portraits of people in a crowded railway station, each face a canvas that invites emotional speculation. The
tension between the immediacy (of the txt msgs) and the mundane timelessness (of the videos) provide one level of resonance. The context of the station provides another level of emotional meaning: the fact that coming together and going apart, two very simple fundamental opposite motions, are at the core of loss and redemption evokes the tension between grief and joy, and their endless reoccurrence in diverse physical forms. This tension causes the viewer to reflect somewhat dispassionately on the universality of human encounters and loss.

7.4 Advertising as Domain of Typographic Innovation

"We believe that the future of online entertainment lies in complex engaging conceptual work, paired with pretty pictures to support it."
Alexandra Jugovic and Florian Schmitt of hi-res.net (Klanten et al. 2001).

Many poets (I assume) would cringe at the association of art with entertainment. Yet, I feel art and entertainment are both symbolically engaging and nutritive forms of communication; each may occasionally demonstrate dense thick or purportedly intellectual modes of communication. From the perspective of complexity of visuals, as well as the sensuality and sophistication of aesthetic or typographical techniques, online art and digital poetics is markedly often technically inferior to the best ads and sophisticated design firm websites. Advertising's web-based digital aesthetics and online mobile typographic experimentations are pioneers of innovations98. Johanna Drucker recognized this trend in print media: "...the idea of placing type on the diagonal became part of the commonplace graphic vocabulary. Such innovations are often associated with the early 20th century avant-garde though they were in fact developed for advertising use in the 19th century. In either case, they represent conceptual, not technical, advances" (Drucker 1998. 223). Drucker's idea that typographical innovations represent conceptual advances creates a strange dilemma for conceptual art: if ads are conceptual precursors then what role does art play conceptually in the advancement of typography? Osmotic parasite? I do not intend to answer either affirmatively or negatively since the actuality is a complex entangled symbiotic set of relationships. However, it is clear that advertising contributes to the conceptual-technological evolution of digital typography online. Influenced by this insight, the intention of the thesis-projects (discussed in Chapter 8) has been to transform the technological aesthetics of online advertising into poetic works.

98 This insight is indebted to the ongoing unpublished research of Prof. Jim Bizzocchi at SIAT who has drawn many parallels between advertisements and experiments in digital narrative.
7.4.1 Fake Pilot, Hi-Res.net and 2Advanced Studios

Aggressively ambitious and astoundingly overpaid, web-based advertising earns its living by entraining the autonomic nervous system into spurts of pseudo-orgiastic associative consumption. FakePilot (who refers to himself as the best flash designer on the planet), Hi-Res.net (who garnered many awards in 2000 for their astonishing Requim for a Dream website) and 2advanced studios (recently voted flash site of last decade) are exemplar designers who integrate mobile text into their client’s work. FakePilot’s first online commercial for Dux is an astonishingly virtuosic show of vectorized effects and scratch video. It has been so extensively copied that it now exists as a classic of dynamic masking integrated into video. 25 milligrams (2advanced, 2002) is a brief hallucinatory voyage into vectorized architecture with a smooth downtempo track. It is cyborg eye candy designed to infiltrate. Hi-Res specialize in convoluted architectures that lead the viewer inward to invisible pages, often spewing and unsnarling text in numerous contortions on a single page. Their work has also spawned numerous offspring. Distant Air discussed earlier in this thesis can be seen as a descendant of Hi-Res style aesthetics.

Form your id

Figure 5: Fake Pilot aka The International Style and Hilanders for Sandvik. Used with permission.
Typographically both innovative and derivative\textsuperscript{99}, Hi-Res, 2advanced and FakePilot studios are good examples of how the frontiers of mobile text’s integration into online digital media, the materiality of the media and its non-reflexive uses are extended by theoretically-disinterested participants. This recognition points to the ethically neutral nature of beauty. Beauty is simply the capacity to entrain or hypnotize a viewer. While advertisers may be theoretically-disinterested (or neutral), they are explicitly aware of how emotions influence motivation. Consumer purchases are provoked by seeding archetypes and intentionally driving the autonomic nervous system into states that approximate pleasure in order to create positive associational product-archetype linkages in the viewer. Emotional manipulation is the core of advertising. Mattias Lindberg (aka FakePilot) refers to himself as a motion designer and his Dux commercials as an “adrenalin commercial” (Lindberg 2006) specifically aimed at kids so that when they grow up this associative bio-chemical link will create unconscious brand loyalty.

The use of visual language in ads is, of course, not the most profound exploration of the human psychology. Yet it is extremely subliminal, technically superlative, and almost invariably far in advance of more formal academic or purely artistic excursions into the genre of online video-poems.

In many advertisements, and in all the preceding examples, texts appear and disappear at rates prohibitive to reading. The mind cannot consciously read what is written, but stores it as a trace\textsuperscript{100}. Advertising is not limited to communicating with the tiny perforations in the brain’s multi-processors that we call consciousness. Advertising follows the insights established in the 1950s by Edward L. Bernays, (public relations specialist and nephew of Freud) and speaks to the subconscious (Curtis, 2004). In this sense, advertising has also conceptually fused with poetry in terms of its target, in that both speak to the subconscious, the vast amorphous ocean of impulses inside the human physiognomy that gives rise to and receives myth, the passions, affect, emotion and beauty. For this reason, in several of my online projects (Thoems specifically) ‘readability’ is not a core concern.

Advertising is an exceptionally effective affective imagistic weapon. Digital poetry is advertising’s poor pacifist cousin. Gleaning and integrating the lessons learned by

\textsuperscript{99} The innovative aspect is in the presentation velocity and animation context. The derivative aspect is due to the tendency of advertising to plunder visual language art (from the Lettristes to PopArt) for ideas. I am not suggesting that advertising has a monopoly on creativity because it has more money; but it does significantly contribute as it plunders. And it’s important to remember that plundering is not confined to advertisers, all artists are emulators. Mark Amerika cites Kathy Acker: “There’s no voice in my work: I just steal shit.” (Amerika. 2007. 331)

\textsuperscript{100} Subconscious biasing is called ‘priming’ and has been widely studies in cognitive science
advertising constitutes one task of future online digital poetics. Digital poetics that leverages the advances in aesthetics developed by ads will be better equipped to communicate. It is possible for digital poetics to absorb the technical virtuosity of advertising in order to strengthen poetry's communicative capacity without also ingesting the meme of consumer manipulation.

7.4.2 Flash Video Interactivity: Ethics, Ads and The Illusion of Choice

I build most of my digital poetics work in Flash. As of 2007, it remains one of the few viable choices for rapid prototyping and deploying of web-based multimedia work. But there is something unpalatable about declared allegiance to a specific commercial software. It feels a bit like confessing to a brainwash; the medium, in the case of software, carries a very specific message that is implicitly corporate. Unfortunately, in the web multimedia domain, open source software alternatives lack the strength and flexibility of commercial authoring tools. Most importantly, the market penetration of the Flash browser plug-in has the unfortunate effect of creating a quasi-monopoly of multimedia in a browser. In this section, I consider the associative resonance that is developing around Flash and online interactive video as it is increasingly colonized by large corporate advertisements.

Consider carefully the 3 finalists in the Video category for the Flash in The Can 2007 People's Choice award: Friends of Orbit Bright, Outlook Theatre, and UFC66. All three are extraordinarily slick big budget advertisements. The absence of any artistic work in the Video category is striking: it points to the power of money, and also suggests that online art is not implementing video-based online work in a way that is equivalent in raw aesthetic sophistication to online advertising. The production values and budget of each of these sites is far beyond those of a typical digital poet's resource. These are also team productions. Setting aside their banal manipulative product-based content, they are exemplary web-based expanded-cinematic works.

101 The superb open-source language Processing, initiated by Ben Fry and Casey Reas, does do 3D which Flash cannot. But as of 2007, Processing's capacity to build robust, full-bodied interfaces is not equivalent to Flash.

102 Online at http://awards.fitc.ca/pc/. The 3 advertisements are all named in a way that obscures what they are: First, Friends of Orbit Bright – a racishly-white parody site promoting chewing gum and chastity (sex!). Painfully obvious perpetual brand placements. It's aimed at tweeners. Second: Outlook Theatre – a car made glamorous through association with video vignettes of a perfect family and immaculate romantic moments. Light fluffy and efficient consumers. It's aimed at the wife archetype. And third: UFC66 – an Ultra fighting championship labyrinth full of snarling warriors and big time money. It's aimed at soldiers, the dispossessed and anyone who needs to fight to survive.
A lot can be learned technically from these advertisements’ technical implementations\textsuperscript{103}. Advertisements develop the technical because profit-based motivation inspires mastery of direct communication online. In order to achieve this goal, ads utilize cognitive science, psychoanalytic insights, demographic studies, and extreme branding to create evocative yet ultimately banal and manipulative excursions into the human body. The intensity with which these sites play upon affect within the reader is profound. The human autonomic nervous system is largely beyond the conscious control of any human. These ads leverage that truth and \textit{adject}\textsuperscript{104} new goals into those who watch them. It offers credence to the hypothesis that propaganda, poetry and advertising share the same evolutionary roots: the insistent rhythm of imagistic language exporting resonant thoughts to others.

\textbf{7.4.3 3 Design Principles derived from Online Interactive Video Ads}

I feel that epistemologies of peace and awareness and indeterminate knowledge must adopt designs that are absorptive by bodies, so I studied the aforementioned ad sites to try to deduce general design principles. From the 3 ad-sites mentioned above, 3 basic (simple and obvious) design principles can be derived: \textit{Load swiftly. Auto-play. Allow choice, but reward inertia}. These are axioms of interface design that allow the viewer to enter into a responsive and engaged state. In addition, there are the aesthetic principles of \textit{smooth transitions between modalities}, and \textit{staying on a single page}. As will be seen in the \textit{Projects} chapter, these principles corroborate conclusions I arrived at independently, and also guide my research implementations\textsuperscript{105}.

\textsuperscript{103} For non-interactive video evidence of advertising’s pre-emptive mastery of experimental 3D short film as abstract-art see Zeitguised’s 2004 ‘Room Zoo’ and 2006 ‘Amino Assets’ at http://www.zeitguised.com/

\textsuperscript{104} Adject (a neologism) : from \textit{ad-} + \textit{jacere} to throw. The injection of ideas into viewers by advertisements.

\textsuperscript{105} The 3 video ad-sites under consideration also, unfortunately and implicitly, express 3 basic metaphysical principles: \textit{Lie. Profit. Kill}. What is art’s role? At the risk of seeming totally idealistic, I feel art must operate homeostatically to offset the propagation of self-destructive memes. The three parallel metaphysical principles of art are: \textit{Truth. Gift. Love}. 

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CHAPTER 8: PROJECTS

"... as artists, we conduct our education in public...how does one take a series of processes and...precipitate them in a space in such a way, that's what there is 'more' than the result of those processes, and what's 'more' is mythological, psychological, spiritual if you like. Much of my work come out the deep belief that form has metaphysical memory... a bodily recall that relates to a series of abstract ideas, and therefore its abstract art..." Anish Kapoor\footnote{This Anish Kapoor quotation is transcribed from the documentary The Eye which is viewable online at the visual language poetry resource UBU-Web http://www.ubu.com/film/kapoor.html} (Kapoor. 2005)

8.1 Results

Speaking of 'results' when approaching practice-based art-research is problematic and difficult. The works and projects themselves are open-ended, vague, and prone to developing a surplus of interpretations. While ambiguity can be seen as a weakness, this excess is actually their strength; meanings are nourishing. At an abstract level, the process of expanding/nourishing epistemological space often begins by integrating the potentiality of speculative material. In conjunction with multimedia, the human body, an intricate modular parallel processor, becomes a site of speculation. Speculation rejuvenates the arid ground of fact, erodes complacent dogma, and revitalizes curiosity.

In my view, the art-works themselves are results and are therefore/by definition self-sufficient. I take the notion of art-research literally: art-works are the results of internal psychological and technical research. Art can and should be read as any other knowledge documents.

8.1.1 Design Results

In order to place these projects in an interpretive context (and hopefully arrive at communicating theoretically sharable results), I review these projects as design implementations of digital books. Digital literature interfaces have often been condemned as not offering random access to text – we cannot hold them like a book, get a sense of their weight, skim through etc. One of the goals successfully achieved in the Thoems and Noteshuffler interfaces is to offer quick instantaneous access to any page in...
the text, in a way that is analogous to flipping the pages of a book. Taking speed of reading variability into consideration, many of the interfaces offer ways for the viewer to automate and/or control the speed of text change. Wherever possible, buttons hide until needed to allow for focus on the art. In addition, the simple file-naming composition synchronization algorithm (described in detail in the following sections) developed during this research offers a small but genuine contribution to digital poetry composition whose potential will be fully explored by successive generations of multimedia digital poets. The following projects constitute my meager attempts to fulfill the goal of creating aesthetic content within clean simple interface design.

8.1.2 Emotional Results

Emotions are highly subjective. In the following projects, the emotional response to these works arises both traditionally and computationally. Traditionally, through their visual and lexical content, the works reference themes of impermanence, death, love and fluidity. Computationally, relationships emerge between the various media: sets of sounds or texts are programmed to coincide with sets of videos. The interplay of these elements is often fluid, in most projects, they form a system responsive to the viewer that hopefully contains enough complexity to be a mirror and reservoir for emotional insight.

8.2 Teleport (2006): a Combinatorial Poetic Photo-Fiction

*Teleport* was completed in 2006 while reviewing cognitive science research into affect and synaesthesia. It is an online prose-poem that incorporates terminology and insights from cog-sci research inside a short fiction of an alien intelligence that teleports its mind into a human body. The thematic is reflected at both the level of content and materiality. Inside a hijacked body, the alien (literature) struggles to maintain control and decipher perceptions in a new (online) body. *Teleport* is fiction in a medium alien to paper and books: networked and accessible, it is like a literature sculpture.

Visually, *Teleport* extends my concern for affective pattern into a sustained study of inanimate matter and dead ‘things’. How are static tableaus read? What emotions are projected onto small inert items? *Teleport* is a visual testimony of invisible communities: plastic stippled coves, garbage, glue, water, dead bugs, dust, hair, sponges. *Teleport*’s inert matter portraits constitute an imagistic argument for the immanence of affect in everything. The hypothesis is that *livingness*, character and truth are reflected in all
phenomena; that when inanimate, small-scale phenomena are re-contextualized as art, affect will emerge as the human cognitive system reads the visual patterns for emotional meaning. In conventional narratives, privileging the human world leverages the corporal reflexes evolution has placed within each reader. Teleport attempts to trigger those reflexes with micro-landscapes that would normally be categorized as irrelevant. In this way, the mechanistic autonomic aspect of affect and its role as amplifier in the construction and projection of meaning is considered.

8.2.1 Teleport: Details of a Combinatorial Process

Teleport is also an experiment in combinatorial text-image creation. Digital works release author-artists from finality of choice; the sacrosanct idea of the perfect conjunction of text-image becomes vestigial in digital contexts. The story loops but does not repeat; the same text never occurs again with the same images. 123 images are used as the backdrops for 122 phrases (the story is split at every period) so the combinatorial conjunction of image and phrase is quite large. The animation of the words is enclosed in code that follows a set pattern with mild perturbations. The titles of the pictures are also displayed, operating (hopefully) as enigmatic commentaries. The entire effect is intended to offer a collision of contexts and ideas. From that collision, sparks of affect emerge as the viewer confronts their reflexive tendencies to interpret these small environments in light of the ongoing textual story that functions as landscapes, sites, and spaces of both tragedy and comedy.

107 To read the story see, Appendix: “Teleport”
108 My combinatorial math is quite weak. And the factorial of 123 +122 reads undefined in online calculators. Anyone? In other words, Teleport has a large state-space of potential text-image combinations. It rarely repeats exactly; but the viewer can reconstruct almost exactly whatever conjunction they wish to see; if the viewer begins changing the images as well then the page is a construct of viewer choice, an arbitrary algorithmic and authorial intent.
8.2.2 Teleport: Interactivity that Emulates a Book

Completed in mid 2006, Teleport initially incorporated no interactivity\textsuperscript{109}. It simply looped through its archive of phrases and images. But while writing this thesis, I re-encountered David Small’s 1999 thesis *On the Future Book*, which contains a few very relevant axiomatic design principles for the incorporation of text into interfaces. Small discovered that the visual complexity of the work contributes to people’s enjoyment, but within that, there is a wide disparity in reading speeds. People like to control the rate of text; this feature is essential to their positive assessment of the interface.

"...the high variability of preferred speed between subjects, all of whom were college students used to reading moving type on computer displays, suggest that it may not be possible to find a common preferred speed for the design of temporal typography. Those who design such systems should account for this variance by giving more control to the reader in the pacing of the information" (Small, 1999, p.96).

Incited by Small’s insightful, common-sense conclusions, in the spring of 2007 I implemented user control of both text speed and image speed in Teleport. The user can choose any text they have already read rapidly by using the arrow keys. In addition, its animated form demarcates any text that they have not yet read. Users also have the capacity to place text simply and intuitively anywhere on the page. Page numbers were also added to each phrase (instead of just to the images), so that the viewer knows how

\textsuperscript{109} Initially I felt that the absence of interactivity was interesting thematically (specifically for Teleport) because humans have no control over time, birth, death. The subject of the story is not in control of the body it has dropped into, so I put the viewer into the same position. This formal symmetry was not sufficient to justify the absence of interactivity. Readers genuinely could not connect to the text.
long this work is, where they are in the process at any time, and can return to previous
pages using the orientation of page numbers. In this way, the optimum features of the
book are conserved, while the rapid remix capabilities of the computer allow for a very
wide state space of possible combinations of text and image.

At the level of providing the reader with ease of use, interface design is an integral
aspect of a digital poetics that strives for aesthetic and affective impact. Obviously it is
not necessary in every implementation, but given Teleport’s somewhat linear narrative
structure, providing the interested reader with the ability to review and comprehend
that text at their own pace is essential to allowing the semantic content of the story to
emerge. As readers of novels or poetry, each of us often skims, re-reads, flips between
pages. Teleport offers those capabilities in an interface that is both intuitive and
invisible. Text motion is controlled simply by clicking and the words fly toward the
mouse. Rate of reading is controlled by right-left arrows; images are controlled by up­
down arrows. The simplicity of the schema may seem trivial but it represents, what I
feel is, an elegant incorporation of the random-access-memory capacity of books into an
online context; importantly, it does not require buttons that clog the visual field.

8.3 Sooth: Love Poems in a Digital Context

I created the Sooth poems in 2005 while artist-in-residence at La Chambre Blanche
in Quebec City just prior to entering graduate studies. The text content of Sooth are soft
small intimate poems. These are poems of adoration and wonder written in a period of
eccstatic innocence. Stylistically, if set for print, they would not be out of place in any
conventional print anthology from the 1950s onward. Sentiment-wise, expressive as
they are of sensuality and love, the thematic is ancient (and predictable): love, body,
pleasure, attraction, longing and grace.

8.3.1 Sooth: The Decomposed Verse

“- the poetic nucleus is no longer placed in evidence by the successive
and linear chaining of verses, but by a system of relationships and
equilibriums between all parts of the poem." Augusto de Campos, 1956
(Campos de. retrieved 2007)

10 Sooth is online at: http://www.glia.ca/SAIC/
11 The poems in Sooth sometimes utilize what is known in contemporary language as txt mssg
style. However, the poets, ee cummings, bp nichol and bill bisset anticipated txt mssging by
decades. (Even to the extent of consistently de-capitalizing their names)
Yet the *Sooth* digital poems are different than if they had remained in conventional media. In addition to the fact that the background of the page is video, and that they are accompanied by sound, computational media offers an expanded typography for delivering their affective content. In western literature, the conventional print poem is based around the units of verses constructed from sub-units of metered lines. *Sooth* decomposes the verse, and lines are mobilized using a set of easing equations. The traditional print ideal of the linear temporal sequence of text line following text line to form a verse is replaced by the concept of a word flock composed of modular mobile phrase units. Each phrase is capable of being the first or the last or anywhere in between in the sequence. This entails conscious consideration during the writing process to construct clusters that fit or produce intriguing meanings in any potential order. As the phrases follow paths and scaling fluctuations that take them to different positions and sizes all over the video, the traditional print motif of static page and margin dissolve.

Released from the constraints of the page into a swirling flock, these tiny ephemeral mobile text communities resonate evocatively with the transient nature of thought: the way elation stimulates the blood and makes mental processes clear yet tumultuous. The reading process is one of exploring the state space of potential variations: where could these words go if designers gave themselves the freedom to try them out in any place? *Sooth* explores these design variations using code and a set of easing equations\(^\text{112}\).

\(^{112}\) Easing equations control the rate of acceleration or deceleration of the motion. Elastic, or rubbery effects are created by chaining several easing types together. In *Sooth* the easing is stochastically selected from an open source implementation of these easing equations developed by Zeh Fernandez called *Tweener*. 
Figure 7: Screenshot Sooth. Phrases in flight.

8.3.2 Sooth: Phrase-Launching Interactivity

The interactivity in Sooth is specific to the digital medium. Instead of page-turning, words are launched by the viewer by clicking anywhere on the video. Each word carries with it an audio element that loops; the audio-morsel volume and pan map to its phrase’s size and x-coordinate position. Thus, the paths and composition of the current flock generate the music. As the viewer controls the launch speed and coincidence of word and image, the design is therefore subtly different each time since the words will be launched and flock over different points in the video. It is my feeling that sensitive humans attribute emotional attitudes to mobile features of their environment that obey laws of flocking; these projections extend to mobile text. If this projection occurs, the conceptual linkage of autonomy, life and affect creates an enriched interpretive axis for the mobile phrases. In this sense, digital media offers typographic opportunities that are inconceivable in traditional media, the classical syntagmatic and paradigmatic axis may be joined by animatic\textsuperscript{113} axis of interpretation that is concerned with the affective quality of the motion. Cartoon animators have long been aware that simple rudimentary cues can emulate or provoke a sense of emotion; VR researchers have arrived at similar

\textsuperscript{113} For a more thorough exploration in this thesis of what is meant by motion analysis and animatics, see the appendix: Animatics: Mirror Neurons and Expressivity
conclusions about “minimal cue sets” (Slater, 2006). Psychologists know that babies smile at anything that resembles a face. *Sooth* leverages similar reflexes to amplify its affective potential.

8.4 Interstitial

“But whatever one is writing, one is trying to tell the story of being here at this moment in time. Art is the provocation for talking about enigma and the search for sense in human life. One can do that by telling a story or writing about a fresco by Giotto or studying how a snail climbs up a wall.” { John Berger, Jan 6, 2006, SF Chronicle }

*Interstitial* is an online video triptych and generative digital poem. Poems are composed from the filenames of 85 mp3s and 276 video clips (all recorded during the summer of 2005) which are remixed dynamically in an online Flash environment. *Interstitial* exists as a functional online example of an *expanded cinema* or *database cinema*: “Many new media objects do not tell stories; they don’t have a beginning or end; in fact, they don’t have any development, thematically, formally or otherwise which would organise their elements into a sequence. Instead, they are collections of individual items, where every item has the same significance as any other.”(Manovich 1999. 1). Technically, *Interstitial* utilizes an extremely simple compositional technique to ensure synchronization of image, audio and text content: file renaming combined with algorithmic remixing and simultaneous redisplay (as poetic verses) of the names of the files that are currently. This simple technique offers extensive possibilities for the development of emotionally effective digital poetics. Thematically, the work deals with the fundamentals of existence: life and death. It does not attempt to sentimentalize nor deconstruct these issues. Death is death; life is life.

The visual use of the triple video panel in *Interstitial* is a visual descendent of Peter Horvath’s video triptych *Stillness* (2006), Albrecht Drurer’s wood alter triptychs, any

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114 *Interstitial* is online at: http://sr-vagus.iat.sfu.ca/~jhave/
115 I am using *generative* in the weak sense of the word: the words themselves were composed by me. Their conjunctions into triplet verses (with single lines on either side) that form the poem is algorithmically generated. This hybrid method is discussed in detail in the following sections.
116 As far as I know there are surprisingly no antecedents for this very simple technique. This can partially be attributed to the facts that until recently operating systems often proscribed the used of certain characters and spaces in filenames; the simultaneous redisplay of multiple video streams online relies upon modern compression and increased bandwidth; and a great number of digital poetic practitioners do not focus on imagery but specifically constrain their work to language.
picture of 3 things made in the sand anywhere by any children, and the constraints of
the bandwidth: 3 videos of 320 x 240 is what will stream on a good day through most
normal high speed networks.

8.4.1 A Hybrid Form between Constraint and Inspiration

"Interstitial art, any work of art whose basic nature falls between, rather
than within, the familiar boundaries of accepted genres or media"
wikipedia, March 2007

Traditionally, writers (and poets, a subset of writers) have been concerned with
transcribing experiences (either abstract, personal or highly imaginative), replicating
reality within language to render it shareable. In the latter half of the 20th century, some
poets turned their attention to the potential for algorithmic constraints to be used as
part of a methodology of writing. Prominent among the groups who advocated
algorithmic writing practises was OULIPO ("Ouvroir de litterature potentielle", which
translates roughly as "workshop of potential literature"). The OULIPO writing
constraints were often very simple, such as writing a novel without using particular
letter (this constraint was called a lipogram).117 More recently, within digital poetics,
Darren Wershel-Henry, Jim Andrews, Talon Memmott and John Cayley (among others)
have expanded this investigation into the potential for computers to generate poems
algorithmically. In parallel, at the theoretical and virtual level, Bill Seaman has
developed a concept of recombinant poetics:

"coined in 1995 in order to define a particular approach to emergent
meaning through generative virtual environments and other computer-
based combinatoric media forms. Combinatoric works enable the
exploration of sets of media elements in different orders and

Seaman emphasizes how interactivity allows participants to "explore emergent
meaning" (Seaman 2000. 1) Interstitial is an algorithmic work indebted to the
explorations of OULIPO and the theoretical probes of Seaman; at the same time,
Interstitial also incorporates authorial intent and affective content.

Interstitial is combinatorial or constraint-based at several levels. The phrases are
composed but the verses are constructed by the computer; in total 360 phrases are
shuffled by an algorithm to constantly recreate new poems. On the first loop viewing,

117 A famous example of a lipogram is George Perec's 1969 novel La Disparition written without
using a single 'e'. The English translation is entitled A Void (Perec 1994).
the algorithm constrains its shuffle to phrases within a specific folder (called chapters); after all chapters are viewed, the algorithm begins to remix phrases from within different chapters. At the level of a material constraint (as discussed below) all the audio files were never edited, recorded in a single take on location, and only those files exactly 1:11 seconds were used.\textsuperscript{118}

However, \textit{Interstitial} is not purely algorithmic or generative; I conceive of it as a hybrid writing methodology. This relates clearly to my concern with retaining emotional capacity within digital poetics. Computers currently do not possess the capacity to produce consistently moving literary content. The \textit{Interstitial} writing method is also influenced by inspiration, intuition, and Surrealism (whose notion of ‘automatic writing’ was to some degree what OULIPO developed in reaction against). The compositional process was guided by a concern with producing simple statements that produce affective resonance.

### 8.4.2 The Subject of The Interstitial Videos, or How To Explain a Dead Cat to an Academic

![Figure 8: Interstitial Screenshot: A video triptych of death, life, and birth](image)

1. A dead cat decomposing on the edge of the St-Lawrence river in the centre of Montreal, Canada, filmed over a 10 day period from soon after its death to its inevitable disappearance into the current.
2. A black cricket metamorphosing into a newborn dragonfly on a loaf of bread over a two hour period at an urban picnic.
3. Micro-landscapes from inter-tidal pools near Vancouver focusing on the anatomy and

\textsuperscript{118} I did occasionally allow a couple 1:12 second files into the set as a gesture of informal acknowledgment of the Islamic notion that when weaving a carpet representing divinity it is appropriate to introduce at least one error.
innate beauty of inert materials immersed in the viscid swirling oscillations evoked by tides.

### 8.4.3 Methodology: The Filmmaking Process

1. The equipment needed to fit into my pockets; and to be discrete, instantaneously usable, yet of sufficient quality for online viewing.
2. The subjects of the film (the objects, insects, and animals) were not to be manipulated in anyway, but simply witnessed.
3. No external / artificial lighting.
4. No changing any details of the context or setting.
5. No post-processing.

### 8.4.4 Methodology: The Web-Design

1. The work is generative from an archive of material (361 AV files, action script.)
2. No interactivity. The work is simply viewed.
3. No special effects. The only transition is a cross fade.
4. No end. Endless loop: once begun the website streams: sequentially then in stochastic variations ad infinitum...
5. Only the rhythm of the editing changes (as breath changes). This is controlled homeostatically by bandwidth and cpu power.

### 8.4.5 Methodology: The Writing Process

In this section, I outline the practical aspects of how the writing was done. The technique, which I call the file-naming composition synchronization algorithm, offers synchronized emotive text, audio and image in a very low-tech easily comprehensible form. The following poem succinctly expresses the process:

*I am a poet
Or at least I call myself one
Even though I rarely write in verse*
I am a digital poet
In naming files and displaying those phrase-like named structures
Concurrently with the images or sounds or films that they name
Poems emerge

Figure 9: Composing poetry within a folder by renaming mp3s with lines of text which will be dynamically remixed online into verses.

A brief description of the writing process will clarify how it relates to both algorithmic constraint-based processes and free writing methods. One way in which the writing occurred is visible in the screenshot above. Instead of opening notepad or word or whatever word processing software normally allows access to writing, an alternative practice spontaneously developed. Given a cluster of sound files that I have recorded, I constrain myself to using only those files which are exactly 1 minute and 11 seconds long. Those 1:11 files are moved into an mp3 player; while playing the sound file, words that occur in my mind are sifted to create a phrase. The phrase is used to rename the mp3 file that is being listened to. A similar process was followed with the videos; no linear video editing software was used. Instead, the source files were cropped into clips, compressed into swf form, and renamed with phrases evoked when watching them.
The renaming process creates the modular units from which the poems are constructed. The actual meeting of sound and video and poem occurs algorithmically online in the browser when the code loads the swf videos and mp3 sounds and displays their names as poems. In this way, the multimedia components are synchronized with the text. The poems do not exist in a traditional ‘page’ or ‘verse’ format. They are constructed online from the filenames as the browser loads files. This writing practice can be reduced to the following simple steps:

step 1. record a lot of little distinctive audio/video files
step 2. import, sort and open in a viewer/player
step 3. slip clear and resiliently concise into empathic logic
step 4. rename the audio file's if words occur in your mind
step 5. upload
step 6. display file names on website during playback

How does this practice relate to affect and emotion? Clearly, as a process it seems fairly dry and disconnected from emotional concerns. Yet since the writing occurs in response to the multimedia, the writing can be conceived of as a translation of some aspect of the sound or video’s perceived emotional content into language. Care is taken to ensure that phrases intuitively respect their future integration into triplet verses. As these fragments are conjoined into poetic clusters on the screen, unforeseen unanticipated associational resonances emerge. Emotional content is revealed to be innate to the nature of viewing; as cognitive organisms, humans interpret and attribute. By subverting the conventional notion of the intentional author who constructs a cathartic resonance, it is possible to arrive at occasional simple and effective collisions of phrases.

8.4.6 The Decay of an Implicit Algorithmically-Generated Narrative

One consciously controlled aspect of the design is that the videos were sorted into chapters to give a sense of temporal flow. By revealing the progressive disintegration of the cat’s body, a form of tension and anticipation develops in the viewer. The display algorithm plays a brief segment of each video from each chapter before moving to the next; when all chapters are played, the process becomes fully stochastic; in essence, the work will extremely rarely repeat exactly the same video triptych once the chronological

Interstitial/Thoems audio sources: toilets, dishes, rain, tidal pools, baths, stones, windows, courtyards, waves, sand, wind, breath, ferries, trains, cars. All of life’s trivia, pu
playing has occurred. *Interstitial* not only demonstrates a way of integrating constraint-based writing with emotionally vivid content, but it presents an example of an implicit narrative which undergoes a decomposition from sequential order into randomness; this structural decomposition parallels the decomposition that occurs in the content of the narrative, the cat's body that slowly decays is echoed by the decomposition of the algorithm in which it is displayed. At a formal level, this demonstrates the capacity for computer-based works to incorporate linear and non-linear treatments of the same material in a single work.

### 8.4.7 Emotional Equanimity and the Aesthetics of the Grotesque

Even though the visual content of *Interstitial* is provocative, emotional equanimity is strived for; although the material may be visceral, the intention is not to amplify the grotesque but to release the viewer (slowly) from swift reflexes of disgust and present the imagery to the gaze very simply and cleanly. To this end the text component of the work is often quiet and simple. Existential and clear little phrases which hopefully evoke or promote a witnessing that neither alters nor demands anything of its subject; an impartial passionless gaze that allows abstract form to disentangle matter from context. In other words, if a dead cat floating in shallow shore water conventionally evokes repulsion, rejection, withdrawal and disgust, this work attempts to circumvent normal cognitive repulsion, and see the decomposing cat as a fluid undulant field of phenomena distinct from its actual existence or its death or the ongoing process of its decay.

In *Interstitial* the spatial formal principles of the video composition are distinct from its content. Sunlight falling through water and swaying limbs is often simply beautiful in a classic sense of abstract form and colour. The tension of the work arises in the conflict between the surface beauty and what the human emotive system perceives as repulsion from death. The discharge of this tension, the swaying between poles of attraction and repulsion and considerations of birth and death constitute one way in which emotion and cognition potentially fuse. It is from such fusions and inadvertent synchronizations

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120 Viewer reactions to this work vary widely. Some people cannot look at it. Others are fascinated.

121 An obvious filmic precursor is Stan Brakhage's 'The Act of Seeing with One's Own Eyes' which "consists entirely of footage of actual autopsies." (Brakhage, 2003)
that potential changes in the viewer may approach epiphanies, cascading micro-
epiphanies that ride the eruptions of breath.\footnote{Tangential note: epileptic seizures occasionally induces mystical visions; during an epileptic
seizure, synchronization across normally asynchronous brain regions occurs.}

The \textit{Interstitial} work is implicitly abstract and conflicted, yet it hopefully also initiates an empathic process in the viewer. By looking at the dead cat decomposing, the
dragonfly nymph transforming, and the tossed wrack of the ocean swirling, in parallel with reading brief enigmatic yet often strangely personal and subjective phrases ( "clinging somehow to what is known", "dragging ourselves from one illusion to the next", "have u known this have u felt this" ) the authorial intention is to both deny and encourage intimate empathic viewing. The simplicity of the language, and its discreet use of the txt messaging idiom, are designed to suggest universal (or at least common) thoughts; the sort of thoughts one might have, one day, while not even thinking. In this way, the viewer is subtly induced into seeing themselves as the subject of the decomposition, the transformation and the swirling.

\textbf{8.4.8 \textit{Interstitial}: Internal Interactivity}

The \textit{Interstitial} work is designed as a vigil, a meditation on the intricate vulnerability of life. The work is intended to amplify contemplative inactive, to that end, \textit{Interstitial} is not interactive in any way. In the period between 1998 up to the present (see Thoems in next section), I have created many pieces which explore the potentiality of interactivity and user control; but the current direction of my work explores computational algorithms that make choices, and passive viewers. \textit{Interstitial} operates by provoking, in the viewer, an emotional state of \textit{exterior stillness} complemented by internal interactivity. In \textit{Interstitial}, the sequence and conjunction of phrases is constructed by the computer; the emergent meaning is therefore a co-production of myself (the writer), the computer algorithm for displaying the phrases (which are the names of files being viewed or listened to), and the reader (who brings to the work their innate predispositions). Meaning therefore occurs at the conjunction of reader-writer-computer.

\textbf{8.4.9 \textit{Interstitial} as Research}

As research \textit{Interstitial} demonstrates how a single artistic process can simultaneously draw on disparate creative methodologies : inspiration, accident and constraint. It
successfully implements this hybrid methodological work in an online digital context. It demonstrates also that constraint-based or algorithmically-generative works do not necessarily need be strictly abstract minimalist and logical; constraint-based works operate effectively when combined with affective content. It develops a strategy for synchronizing image to text phrases, and audio to text phrases that is incredibly simple, yet effective: the naming of the audio or video files with phrases directly evoked by listening. This technique extends the titling process from the Teleport project (discussed in previous section) into naming of audio files. It is in this subtle, seemingly negligible, technical design detail that the affective impact of the work is enhanced. In essence, artist, image, text, audio, and algorithm are each given a role.

### 8.5 Noteshuffler

*NoteShuffler* is an online writing reading tool in which I wrote the preliminary notes to this thesis. The software is neither beautiful nor emotive. It is a tool for thought transcription. It automatically matches the current text and displays an appropriate image from an archive. *NoteShuffler*’s primary power is its capacity to displays texts in different modes. And a single GUI functions as both writing tool (ms word), presentation device (power point), and website (html and css). *NoteShuffler* follows rules, eats thought, analyzes, memory, performs action.

*NoteShuffler* explores the nature of writing, and advances several interface design ideas (allowing modular text segments displayed like a deck of cards) to allow ease and spontaneity of transcription. The online proof-of-concept prototype presents a simple paradigm for integrating book with blog and typewriter.

### 8.6 Meanderings

"It needs to be clearly understood that professional research, at postgraduate level, is about systematic procedures that lead to the application or extension of knowledge - it is not about unbridled, curiosity-driven or opportunistic discovery" (Toncich 2006. 138).

Meanderings.org is a multifaceted accumulation project. Transdisciplinary implications sprout from it. It is a list of over 700+ (and growing) links, loosely clustered around the themes of visual language, philosophy of mind and aesthetics, collected over the course of thesis work since November 2006.
If all goes well I will convert it into a dynamic online ecosystem in a single interface. Final launch December 2007.

8.7 11:11 : Combinatorial Audio Experiment

Sound sculpture, audio snack, and mp3 player combinatorial poem: 11:11 is 111 one minute and eleven second audio files. The lines drift vertically whenever approached by the user, the poem’s meaning reconstruct itself elusively as its phrases (which are the titles of the mp3s) try to hide and avoid being seen.

11:11 is a test foundation of the Thoems sound engine. It is a homage to Raymond Queneau Cent mille milliards de poèmes Queneau utilized the sonnet form and cut pages into strips so each line could be recombined with any other. Once again my congenital incapacity for combinatorial math inhibits me from saying how many combinatorial poems 11:11 offers, but suffice to say it is large.

8.8 Thoems : Expanded Cinema

“... let's convert our emotions, when they stoop to becoming apparent, into visible matter that can be sculpted into statues with fluid, glowing words” Ferdinand Pessoa. (Pessoa. 2001. 322).

The name Thoems is a neologism compound of 'tho-ught po-ems'. The poems were composed and edited during 2006-2007 on a simple html blog. As soon as they were written, they were online. In the first design iteration, the rss feed from the commercial blog software was fed back into a custom rss-aggregator Flash interface. Second iteration, the rss feed was fed into a custom-designed Flash-based auto-animation device. The third design iteration implemented writing capacity in the auto-animated interface so that the poems were written and read in the same interface; the blog rss feed was discarded; and 29 of the 53 poems on the html blog were moved into the new online custom-software which uses text file storage. This synthesis of a single GUI writing-reading online environment is a subset of my research concerned with the

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123 "Raymond Queneau's Hundred Thousand Billion Poems or One hundred million million poems (original French title: Cent mille milliards de poèmes), published in 1961, is a set of ten sonnets. They are printed on card with each line on a separated strip, like a heads-bodies-and-legs book" [Wikipedia].
124 Thought does not preclude emotion. Since cognition and affect are conjoined thought is entwined with emotion.
126 Blog rss aggregator: http://www.year01.com/jhave/SIAT_blog/rssEater/siat_rssReader.swf
127 Online animated Thoems: http://www.year01.com/jhave/thoems/
design of writing interfaces, specifically writing interfaces that are simultaneously reading interfaces (as in a wiki). The Thoems GUI extends the wiki concept by not having any visual distinctions in appearance between the authoring and display modes; it allows for instantaneous password-protected updating of the site in real-time from a single page. The underlying code architecture is based on the NoteShuffler writing interface (discussed in the NoteShuffler section). In the fourth design iteration: multimedia capacity was added. The 29 Thoems are animated over a set of 410 videos accompanied by a set of 150 audio files. The audio and videos are selected from categories and remixed dynamically using code; there is no linear editing; the user selects an audio or video category; if no user selection occurs random auto-play occurs.

The videos were all filmed using a handheld digital pocket camera. The content of the videos is fluids: household soaps, honey, aloe, turpentine, soya sauce, olive oil, maple syrup, and hand lotions. Any poem can be viewed with any set of videos or viewed without any videos. The video-poems therefore are particles of networked data, recombined in various viewing modalities. The 'book' in this instance is a metamorphic creature capable of responding interactively to the viewer's proclivities while at the same time preset to auto-play so that interactivity is not required.

The Thoems themes are impermanence, ephemera, fear of inconsequentiality, failure, doubt, organic systems, continuums of structure, undulance, sinuosity, fluctuation, intuition, revelation, drugs, death, roles, seals and epistemology. No attempt was made to constrain the content to any specific set of concerns or subject matter. There exists a vast continuum of cultural precedents for poems that are omnivorous and open. At a visual level, the Thoems attempt to emulate the indeterminate reality that underlies human existence. Humans are vulnerable particles in a massive system. Digital machines will not preserve us from the turbulence and uncertainty of our existential condition; our lives are transitory identities on a pathway between a coalescing and a dissolution. Trajectories are data that reveal the expressive relation of a phrase (being) to its environment (screen). The Thoems is a speculative aesthetic implementation designed to induce reflection upon mortality and knowledge.

8.8.1 Thoems' Implementation and Design Process

"The marginalisation of creativity because of the fear of its untetherableness, permeates our institutions..." (Gothe. 2002).
Building the *Thoems* was both a creative process and an iterative design process. Repeated evaluation and implementation of a diverse range of display animation types and interface designs occurred. I recognize that the evaluative criteria for success is highly subjective in any art endeavour\textsuperscript{128}. In order to offset the subjective quality of the research, in the case of the *Thoems*, the design process was guided at two levels: the interface design level (which includes issues of readability and usability) and the aesthetic or affective level (which concerned display and content). At the interface level, a central principle was *auto-play* functionality. The page needed to load and simply begin and continue regardless of whether the user did anything. I wanted the work to operate at the same level as a short film or a poetic novella, that requires nothing from the user except *passive\textsuperscript{129}* reading. Second: if the user wants/needs to control events, they are given sufficient freedom to activate and modify how the auto-playback occurs. Third: the author-creator can update and review changes instantly without leaving the display environment.

### 8.8.2 Allocation of Responsibility between Artist and Computer

Most viewers are so accustomed to formal linear artworks where the artist has made aesthetic choices about the ordering of elements that that they will not even realize that the *Thoems* are using algorithms to randomly mix the following features: initial poem (dependent upon how the php sorts the folder contents), word animation (location, speed, easing and orientation in flock), font choice (size and opacity), video choice (it defaults to randomize on load) and audio (an amalgamation of 3 separate simultaneous sound files selected from the archive). The majority of the display features are generated and mixed by code. The content is made by the author. Allocating content creation to the artist and sequentiality and animation features to the computer constitutes sensible design. Computers excel at exploring combinatorial variations. Humans are adept at constructing material that has semantic or associative connectivity.

### 8.8.3 *Thoems'* Hybrid Traditional and Animated Reading Modes.

As literature and poems make the transition from print to digital, there is considerable discussion of what features of print constitute vestigial impulses and what features will

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\textsuperscript{128} In my opinion, objective criteria applied to art is often only rationalized subjectivity.

\textsuperscript{129} *Passive* reading may be a bit of an oxymoron given the amount of cognitive processing that occurs when watching words fly over video, however, what I mean is the reader does not need to do anything.
be necessarily carried over into new media format. Will the notion of the page disappear? Will the marginalia of manuscripts become blog comments? Are verses and lines old technology that will be replaced by modular flocks that aggregate according to algorithmically sensed moods? At the simplest level, the difference is between static (page) and active text (screen). The Thoems were designed to offer a hybrid environment that offers readers the capacity to view the text in a traditional text field (static) and as an animation over video (dynamic). Evidently traditional mode does not mean book and paper, but it does offer a static, normal view; the lines are sequentially organized, the reader is free to set their own pace. The traditional mode is a simple text field to the right of the video which appears as a new poem is chosen and then fades out. The text for any poem can be made to reappear at any time in its traditional mode by rolling-over the simple rectangle buttons which are stacked in a vertical column directly to the right of the video. Clicking on any these buttons selects that poem for animation. This hybrid environment offers the user both reading options in an attempt to resolve the debate of the digital-print divide by straddling static and mobile presentations. Instead of taking a side in the theoretical debate, practical common-sense suggests that both forms will persist.

8.8.4 Auto-Animation: foreground and word flocks

In order to contextualize a discussion of the design process, it is important to keep in mind that within the Thoems there are multiple overlapping systems auto-playing at any one time: video, audio, and words. There are also two implementation-distinct styles of auto-animation of the words occurring in Thoems: a word flock (see the following section for a discussion of their implementation) and a set of foreground phrases which jolt and dart around the display zone. The foreground phrases are intended to be the readable chronological aspect of the animated word display. As each phrase enters, it is focalized stochastically in the foreground, before entering into the swirling rhythm of incessant motion that characterizes the work's style. The textual content of the foreground phrase and word flock changes at intervals determined algorithmically by the length of the active phrase; in other words, line length influences the speed of auto-playback between phrases.

Almost all authors who discuss the subject end up wondering what will be preserved from print. The answers vary considerably. See Ong, McLuhan, Bootz, Joyce, Vandendorpe, or Hayles.

Animation technical note: sustained motion is used with a recursive equation that never exits, but calls itself aperiodically. Implemented using Zeh Fernandez's Tweener extension http://labs.zeh.com.br/blog/
The auto-animation of the foreground phrase motion has been an ongoing exploratory process that I do not think I have completely resolved. In attempting to free the user from choice, to have the same inexorable quality of film, problems of readability and comprehensibility occur. These problems are compounded by the non-narrative nature of the poetic texts which are often difficult to follow. In addition, as a generality, viewers do not treat text the same as they treat images. Where the populist imagination is comfortable with swift music video montage rates, when it comes to text, there is a tendency to want to digest the word’s semantic content, to treat it differently than images. Informal study of people encountering Thoems, reveal that reader-viewers tend to read at different rates, and want to review their choices. If this minimal functionality is not intuitively immediately apparent then alienation, confusion and disinterest occur. This tendency is offset by the aesthetic quality of the videos. Informal viewing revealed that most people were quickly confused by the swiftly changing phrases. Numerous design iterations have to some degree alleviated this problem, but not eradicated it. Reading speed is one of the variables in users of a text interface (Small 1996). In order to accommodate for this reality without sacrificing the auto-play capabilities, Thoems gives the users the ability to turn off the auto-play mechanism and control (by clicking on the video) the speed at which phrase change.

Technically, the Thoems interface dynamically reads a folder of poems, splits each poem into phrases thus respecting the traditional breath-based prosody of the line. In one failed evolutionary thread of the design process, the phrases were split into words, and then letters. Letters formed a cloud cluster which orientates as a flock. Each word was a member of a flock which is part of a line-phrase. This effect proved to be impossible to read; the amount of motion had exceeded even my high threshold for simultaneous vectors. Subsequent iterations concentrated on simplifying the interface and animation so as to maximize readability and minimize extraneous cognitive load.

8.8.5 Thoems’ Word Flock Programming Process and Motivation

In this section, I outline the specific steps that went into one aspect of the Thoems code process. I constrain my description to the word flock in the Thoems since a full

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132 I am not claiming that the programming in Thoems involves any significant advancement in the nature of code, but it does clarify issues central to my thesis concerning affect by revealing how attempts were made to visually (using computation) emulate a living system.

investigation of implementation of the other capacities of the interface is beyond the scope of thesis. The algorithms used to create 3D (more accurately 2.5D since the camera cannot spin around the words) word flocking motion in the Thoems are based on algorithms developed by Jared Tarbell. From the demo Tarbell released as open source action script code in 2001, I developed an algorithm for representing text in a 2.5D space as a flock of words. Jared's approach is not a traditional approach to 3D modelling, nor is it a full bodied OOP openGL environment; it is a proof-of-concept prototype of apparent 3D coded within Flash which has no capacity for full bodied 3D architecture. The algorithm is a bit esoteric, in that it is structured as sets of skews that operate simultaneously on objects at different layers. In other words, as the skews occur they cumulatively synthesize an apparent 3D motion. The behaviour is not arising within a classic xyz 3D-axis space, apparent 3D arises through the cumulative effect of the multi-layered fluctuations which operate on xy and width-height parameters of hierarchical objects embedded within each other.

The hierarchical architecture of the code has strengths and weaknesses. I developed from this code with the intention of creating an emulation of a flock composed of independent units. Artistic emphasis is on the appearance of 'livingness'; I make no claims of developing thought; attention was aesthetic rather than programmatic. I developed the word flock design iteratively by successive experimental modulations of the original code.

First step: I inserted a set of switches inside each object; and a set of global parameters controlling the cascade of the switches. These switches synthesize a state-space and control the word's orientation in space. Each word's orientation is independently set. At each object level, there are different modes: synchronized, perturbed, and autonomous. In synchronized modes, words are oriented synchronously. In perturbed mode, they are each assigned the same orientation but the parameters are stochastically (randomly) perturbed. In autonomous mode, the states of members of the flock are each assigned orientation independently. They do not possess autonomy, but they behave independently.

Step two: an added level of objects encapsulated the group of words as a whole. The global state of the flock motion was controlled separately through easing equations applied to xy and scale in order to approximate the z-axis (without offering the

134 Jared Tarbell is famous in the Flash coding world. His website is http://www.levitated.net/
sophistication of a fully 3D camera object). The word flock has a 'startle reflex': the flock changes with each mouse click. Humans attribute 'emotional' reactivity to groups which react to stimulus. The word flock is meant to visually link the videos (which are full of organic particle systems) to computational particle systems.

8.8.6 Thoems Videos: Fluid Embodiment

"... I learned a long time ago to trust my instincts ... Hopefully you are risking failure every time you make a frame ... There's no real system ... Light on surface. That's all there is, is light on surface..." (Garry_Winogrand.mov).

"Reason is the outward bound circumference of energy" (William Blake)

Long before Freud re-introduced occidentals to the idea of the psyche and subconscious forces, -- Eros and Thanatos\textsuperscript{135} -- desire and fear were born in the body. Our bodies are sacks of fluids. The blood, feces, glia, snot, spit, striated tissue and semen of the body are reflected in my choice of subject matter: thick fluids, household soaps, turpentine, honey, maple syrup, soya sauce, globs of acrylic paint and intertidal pools. The choice of these fluids is not arbitrary; they are chosen for their capacity to emulate complex turbulent flow patterns. The speculative hypothesis underlying the research is that the physics of fluids at a macroscopic level are analogous to the fluid fluctuations of emotional patterns in our brains. Emotional change and the physics of affect are thus the subjects of my videos.

The Thoems videos are meant to be visual representations of interior emotional states at the molecular level. They speculatively suggest a visual analogy between neuro-modulators in the brain\textsuperscript{136}, jelloish turbulent swaying fluids, and inter-tidal pools of viscid density. In both the brain and ordinary fluids, particles are engaged in cohesion, interchange, deflection and absorption; the physics of turbulent flow are applicable across domains. The shared physics of these interactions suggests shared processes and provokes questions about the position of the human species in the continuum of existence: if the brain is simply an organized modular mass of electro-chemical impulses which obey the same fluid-dynamic physical laws as other fluids, what is consciousness?

\textsuperscript{135} Eros and Thanatos can be roughly transliterated as love and death, desire and fear, eroticism and terror

\textsuperscript{136} A foundational premise of neuroscience is that experience changes the brain. Change is referred to as \textit{adaptive plasticity}. Adaptive plasticity is considered to be a synonym for learning.
8.8.7 Thoems Philosophical Implications: non-Anthrocentric

"...down into the most hidden, most elusive regions, the most difficult to work, the most sensitive to the touch, down into the unconscious, and the bodily passions. They can be reached by borrowing the ladder of writing that goes down to the roots..." (Cixous 1998: 132).

The choice of text, audio and video subject matter in the Thoems suggests a worldview where humans are neither at the apex of consciousness nor qualitatively different at a core level from the rest of the continuum of nature. Brain processes, human relations and social structures are physical events that involve coalescing, reproducing, communicating, and dying. When placed in conjunction with each other, the Thoems’ ambient sounds of supposedly inanimate objects can create/form patterns suggestive of intentional compositions.

The Thoems visually propose that normal dense inter-weavings of fluids constitute clues into the structure of how emotion and cognition are generated in the body. As an artist, my goal is to produce imagistic material that seeds the potentiality of new concepts. In this sense, my intentionally-provocative proposal is that consciousness is implicated in the motion of normal fluid materials. Without denying the richness and nuanced paradoxes of emotions and consciousness, Thoems points toward the possibility that emotions are mechanistic meta-patterns, or skins that emerge from the aggregation of different fluid bodily systems. Matter, etymologically, is mother. Physical reductionism is not necessarily antithetical to emotional art; it reintegrates consciousness into the universe.

This proposal constitutes one aspect of my approach to materiality: to investigate the materiality of our bodies, to re-reference the analog world of the heart and brain, to re-matter the world of consciousness, and at the same time build associations between fluid and dynamic organic systems and computational processes. For myself, code is not immaterial, it is just another level of abstraction, a way the universe represents itself to itself. The movement of data within computers and networks can also be seen as fluid. Data traverses pipes, is stored in registers (reservoirs), traverses networks in packets (drops). At each point in its journey, a data packet must avoid collisions before

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137 A sub-goal is that the concepts expressed nurture compassion. But due to the complexity of the writing-reader dynamic in multimedia contexts, it seems foolish to assume predictable results.

138 From another perspective, it is possible claim that everything (even code) is immaterial (energy, data), in the same way that contemporary physics establishes continuums between energy and matter, space and time.
eventually coalescing with its parents. The turbulent system of servers, routers and nodes that constitutes the internet has been seen (at least since William Gibson’s *Neuromancer* and the proliferation of sci-fi) as a fluid pattern, a potential external nascent brain. *Thoems* is yet another contribution to this genre of speculative practice.

### 8.8.8 Thoems Flaws, Weaknesses and Unimplemented Dreams

“....if you’re doing an experiment, you should report everything that you think might make it invalid -- not only what you think is right about it: other causes that could possibly explain your results; and things you thought of that you’ve eliminated by some other experiment, and how they worked -- to make sure the other fellow can tell they have been eliminated.” Richard Feynman (Feynman 1974)

Science is concerned with certainty, proof, validity. The weakest aspect of the *Thoems* is the programming. There is nothing innately *intelligent* about the emotional model for the word-motion as of yet. The emotivity of the *Thoems* motion is based on aesthetic criteria. An unimplemented schema for assigning emotional modes that intersect to influence behavior does exist. Time, skills, and complexity of task have prevented it from manifesting.

### 8.8.9 Thoem Bubble Videos inspirations

Nothing about the *Thoem* videos is new. Fortunately, I was not seeking newness, which is a quality of time. I was seeking to find visual correlates for psychological and emotional states. The terrain has attracted numerous explorers, from the beginning of cinema (Mueybridge) to coders of fluid dynamic systems in the 3D software Maya. The visual form of fluidity as expressive life (intelligent, creative, turbulent) has often been correlated visually with awareness. It challenges notions of originality. Resonance is derivative ricochet.
The video paintings of the bubbles are also indebted to the sophisticated visual art practice of the photographer Kim Keefer. He fires substances into a 100 gallon aquarium and photographs onto 4 x 5 transparencies. I use bottles of soap from the dollar store and film on a window ledge using a small waterproof digital camera (pentax optio w20). Keefer’s methodology allows for grandeur and large scale prints but is constrained by latency, he must always wait until photographs develop. My own poor occidental prosumer methodology allows for instantaneous playback, importation of video using an SD flash slot to laptop in minutes, compression in a batch process, and video into the site the same day as they are shot. Total cost of equipment: $2000. On the server, a dynamic php script retrieves a shot list and constructs a film to accompany the rss-fed Thoems. Total editing time = total coding time = approx. 120
hours. Immediacy of practice allows for the spontaneous capacity of art-creation as play to emerge: fluid as the forms filmed the process offers unprecedented distribution on the same day as the footage is shot.

Another influence: Daniel Conrad’s superlative film *Accident By Design* (1998) is interlaced with shots of fluid dynamics of exquisite beauty. It is also a film of exquisite theoretical probes whose philosophical content invariably influenced, confirmed, corroborated and predated my own thoughts about the nature of creativity as process. It implicitly suggests an intuitive field of continuity permeating creators that continues (in my view) into art-research practice using digital tools. The intrinsic folding recursive dilemmas of the body that shape a choreographers, poets, physicists, and painters vision are shared by digital artists. Only the tools have changed.
CHAPTER 9: CONTEXT AND CONCLUSIONS

This thesis is an exploration. It explores emotion in digital poetry through practice-based art-research. In this conclusion, I summarize the general form of the argument.

9.1.1 Review of The Philosophical Argument

This thesis argues for a renewed inclusion of the embodied reader into the critical analysis and production of online digital poetry. This inclusion can be accomplished through increased emphasis on lexical content of the text and aesthetic multimedia content that activates the reader's (traditional and embodied) autonomic affect systems. Advertising can be seen as an (unfortunately mercenary) model of techniques and practices that approach and provoke the viewer's body-brain; some online advertising manipulates the reader’s conscious and subconscious drive systems with a sophisticated use of aesthetics. Advertising's cynical profit-driven intentions may trivialize the importance of aesthetics, but its effectiveness and technical dexterity (as in the examples cited) are indisputable. Digital poetics, I argue, must adopt and adapt the technical sophistication of ads and combine that with what it now does extremely well: scrutinizing the theoretic potentialities of materiality and presenting alternative ethical viewpoints.

Art has relevance as a homeostatic mechanism in civilization. It simultaneously stabilizes and perturbs collective identity. I feel digital poetics has a responsibility in the collective to maintain and nurture philosophies of respect. From myths, ritual, and oral storytelling, a continuum of concerns (dreams, death, love, desire, destiny, origins) provide models for how digital poetics can access the psyche. Humans have an innate need for what the philosopher Ellen Dissenaye in her book *Art and Intimacy* (1998) has termed *mutuality* (belonging and being loved) and *elaboration* (the art of describing mutuality through art).

I am arguing for the continued relevance of the lyric as *elaboration* (Dissenaye 1998) of the embodied condition... As long as the body exists, humans will need artistic elaborations. Lyrics describe the body's needs to itself. This recursive descriptive
function will still be necessary if and when humans become cyborgs. It appears highly probable that post-human consciousness (Hayles 1999) will still require synthetic aids, such as art, to understand its own emotional structure. The research of Aaron Sloman\textsuperscript{139}, Antonio Damasio and Rosalind Picard provide forcible incentives for the inclusion of affect into systems that seek to emulate consciousness. A digital poetics is needed which embraces the soft, moist, ambiguous space of dreams and desire in order to arrive at emotionally relevant material and to establish an intimacy with its audience.

Emotional \textit{irrational} content does not need to happen at the cost of coherent, clear, simple interface design. Again, advertising provides the most cogent (even though cynical) design examples. A significant amount of contemporary digital poetics has followed a path of confounding its audience, perhaps in an effort to distance itself from the mass-mind of tv and the sentimentality of soap operas. I am appealing for a digital poetics which reclaims aesthetic and affective terrain from the merchandisers of the mind and from afternoon soaps. I am calling for poets to return to their roles as constructors of beauty.

\textbf{9.1.2 Review of The Design Implementations in the Projects.}

Iterative exploratory design arrives at unanticipated implementations. A partial list of the interface features implemented: visual language is treated as visual – text is offered to the reader in modes similar to a slideshow; buttons hide and reveal themselves based on the user’s mouse position and/or context; speed of reading, font style, and font size are automated and/or controlled by viewer; \textit{pages} are instantaneously accessible and memory of what has been seen/read is visually communicated; and, as text is entered, it is automatically animated – and independently follows its own \textit{moods} within a rudimentary emotion-machine. None of these features are revolutionary\textsuperscript{140} yet the conjunction of all these features in an online context with extensive multimedia content suggests future directions and potentialities for networked digital book.

\textsuperscript{139} See the final chapter of this thesis \textit{Future Paths} for a discussion of Sloman’s three-tiered model.

\textsuperscript{140} Doug Engelbart demoed most of the basic functionality of the word processor in 1962 (Myers. 1998. 44). For an innovative early custom poetry animator software, see Appendix E: Lewis ‘ActiveText’ (1998) and ‘Content Lag’ (1999),
CHAPTER 10: FUTURE PATHS

“...a machine to master human emotion ... is really the cutting edge of human intelligence, that’s the most intelligent thing we do....” Ray Kurzweil (Kurzweil 2006).

According to Rosalind Picard, in 1981 the philosopher Aaron Sloman was “one of the first to write to the computer science community about computers having emotions” (Picard 1997. 211). Echoes of Sloman’s philosophy can also be seen in Minsky’s 2006 *The Emotion Machine.* Sloman hypothesized 3 architectural layers in the brain: reactive, deliberative, and self-monitoring. For the most part, my software interfaces for the net consist of algorithms that are predominantly reactive: simple reflex flocks that are jolted around. Deliberative activity is assigned to the user, who must decide how to navigate, what to touch. Reflexive activity remains confined to the author. Future research will probably see a greater degree of deliberation and reflection generated by the computer.

Autonomous text which has authentic context-specific behaviors is another future path. Animism assigned to typography combined with interactive responsiveness that attempts to incorporate awareness of the affective state of the user is reflective of an artistic concern with transforming the ontological status of text as thing into text as living entity. This sustained engagement with aliveness\(^{141}\) anticipates the evolutionary path of future literature as it progressively incorporates computation and becomes an autonomous, harvesting software that eats thoughts (blogs, essays, stories) and excretes new writing, guided by software sculptors, word choreographers, immersion designers and content-trajectory architects (formerly known as authors) who herd vast torrents of text into the cognitive path of their networked viewers.

Attributing life to future autonomous animated texts (Lewis 1996) calls into question our own nature as ‘living’ beings by suggesting that any active motion which is sensitized and responsive to its environment is life. If this implication is accepted, then its inverse also emerges: that all life is only a set of objects within a hierarchy that is itself an object. Absolute animism and absolute objectivity meet on the far edge of a

\(^{141}\) See *It’s Alive* (Lewis 1999) as an influential precursor.
metaphysical cycle.\textsuperscript{142} Digital poetics may be one of the evolutionary motions of language (as a species in and of itself) seeding itself affectively into a digital substrate.

\textsuperscript{142} See Appendix on Panpsychism
Appendix A: Panpsychic Mechanist

The academic name for a belief that everything is conscious is panspsychism. Panpsychism is a philosophical worldview that states that mind is immanent in matter. Very generally, panpsychism resists the dominant materialist paradigm that sees consciousness as exclusively a higher-order epiphenomena or abstraction of brain-generated thought. In the panpsychic view, consciousness is not dissociated from the body, nor is it delimited by the body. Consciousness is distributed and exists before thought; it is non-localizable and analogous to a medium or a network. Mind as immanence has had adherents since before known time. In the western philosophical tradition, some of these adherents have been: Empedocles, Plato, Campanella, Liebniz, Clifford, Fechner, William James, Gregory Bateson, and A.N. Whitehead (Skribna 2005).
Appendix B: Forgiveness Interfaces

"It would be foolishly naïve or monomaniacal to believe that all the world’s problems—famine, war, the iniquity that spawns them—could be solved simply by practicing or experiencing the arts....Yet in a world that shows increasing evidence of unmet primary psychobiological needs, it seems well worth describing...how the arts have addressed and satisfied these needs." (Dissanayake 2000. 204)

Art-research relevance is usually framed in terms of its contribution to a continuum of knowledge. I want to briefly mention the social relevance of poetry. Currently war is a daily event somewhere on the earth. It is an emotional problem: anger, fear, and violence arise from neglect and abuse. The neuropsychological roots of forgiveness are increasingly the subject of research. If, as argued in this thesis, poetry is inherently emotional, then digital poetry (networked, immediately accessible and affectively enhanced with multimedia) may have a role to play in the alleviation (however slight) of some these chronic social problems.

It is my future intent to try to build digital poetic interfaces which access the subconscious and autonomic affective embodied viewer in order to seed forms of cognitive forgiveness.

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Appendix C: Animatics: Mobile Text, Mirror Neurons and Emotive Expressivity, Poet as Choreographer

"This irruption in temporality from within writing introduces characteristics of oral literature to a resolutely non-oral object. To borrow a term from Robert Escarpit, it transforms the written text from being a document to a semi-document (like a film). What's more, it imposes the irruption of an act within the space of linguistic signs, imposing a poetic function for action on the poetic function of language" Philippe Bootz\(^\text{144}\) (Bootz 2002).

For myself, mobile words (stretched, mutated and animated) are equivalent to gestures. In this way, mobile words are actually choreographic actions; the digital poet becomes a choreographer of images, sound and text. Words dance; their expressive potential is in how they dance. When perceived by a viewer, animated-words probably activate mirror neuron activity\(^\text{145}\): the pattern-recognition modules in our brains search for matches for the words' motion. Emotional structures or situations are then projected onto the text: is it aggressive? shy? predictable? The attribution of emotional character to text in mobile digital environments extends beyond the traditional syntactical (the grammar and metre) and paradigmatic (the semantic meaning) axis and introduces a dimension of interpretation concerned with how it is moving. I will propose that this interpretive axis is called "animatic". In 3D animation, animatics are rough low-resolution un-textured video sketches of the outlines of the proposed animations. The word can easily hold an alternative meaning. I am proposing this: that animatic interpretation is concerned with how animated objects (text or images) activate human emotive recognition systems at a physical level.

\(^{144}\) Philippe Bootz has been active for several decades in digital poetics, originating and running the online journal *Alire*. The philosophy espoused by Bootz places digital poetics within the domain of time-based media; active dynamic motion is seen as an evolutionary outgrowth of literature encountering digital technology.

\(^{145}\) The neuroscientist V.S. Ramachandran has hypothesized a model of the self as being related intimately to the mirror neurons. Ramachandran thinks that mirror neurons developed the capacity to anticipate the actions of things exterior to the body. Then this capacity for reflective anticipatory mimicry of other beings turned inward and initiated our sense of self (Ramachandran, 2000). This model provides strong support for the efficacy of visual language and mobile text specifically; by activating the innate mirroring response, the emotional state suggested by word motion is empathically projected onto the word semantic.
Appendix D: Thesis GTR Rewrite MASHUPS

The GTR WorkBench is a generative poetry software composition tool (David Ayre and Andrew Klobukar, 2004). Although not even faintly emotional as an interface, the exceptional power of the GTR workbench (which allows a wide range of textual manipulations, permutations and combinations to be performed swiftly) is obviously at the frontier of writing technology. When conjoined with an emotional and subtly contextual AI, future automated writing devices (inspired by software such as GTR) will auto-construct (as McLuhan presciently anticipated) the stories and poems we ingest.

In a single evenings play-work, GTR allowed me to mashup this thesis in multiple forms. The results are online.

Here is a dada morsel of this thesis auto-shredded by GTR:

"I conceive of leverages as a phrase and 236 as visualization. I do not believe in the Genomics of defending category; and I believe that forms to Postmodernism can have political poets. In this predated, realm are Things; they may have differing Apple dependent upon the poet but that does not alter their " or withdrawal to exist. Evidently there are criteria to this 2003; I am not advocating an empirical absolute Literature; and I do not accept as true potentialities that occurs within my own 8.8.7. But I do feel strongly that the current academic film on establishing a tiny Synesthesia in a process and defending it constitutes only one Gothe to code practice-base . 1999 science iteration from my D can and do co-exist. This Humphries should be considered a poetics to the irruption Faculty that is flourishing around digital others."

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146 GTR is open-source and can be downloaded for free at http://gtrlabs.org/projects/workbench
Appendix E: Lewis ‘ActiveText’ (1998) and ‘Content Lag’ (1996)

Dynamic digital-text software pioneers, in 1998, Jason Lewis and Alex Weyers produced It’s Alive and Text Organ, based around the notion of ActiveText:

“a general purpose architecture for creating dynamic texts. ActiveText uses an object-based hierarchy to represent texts. This hierarchy makes it easy to work with the ASCII component and pixel component of the text at the same time. Static, dynamic and interactive properties of text can be easily intermixed and layered. The user can enter and edit text, adjust static and dynamic layout, apply dynamic and interactive behaviors, and adjust their parameters with a common set of tools and a common interface. Support for continuous editing allows the user to sketch dynamically.”

(http://www.thethoughtshop.com/research/atextr/uit99/uit99.htm)

By surmounting the “ASCII-Pixel wall,” ActiveText made a significant advancement in the agility and ease with which morphological and semantical manipulations of text could occur in real-time. Unfortunately, this significant modulation in how the software operated has not been adopted (as of 2007) in any widespread way in commercial software. Text editors continue to break down into categories based upon whether they rasterize the text or treat it as ASCII.

In his theoretical work Lewis, drawing on the work of Ong, Landow and others, develops the idea of content lag: “Content-lag is the time it takes to develop content which is uniquely and powerfully suited to a new medium.” (Lewis, 1996). Lewis focuses his analysis on print and film; in film, the changes (sound, then colour) induce change waves in the artistic productions. The interdependency of technology and art is also present in digital media. The constant introduction of technological innovations produces both inhibitive and explosive effects: sometimes making it easier to produce work, often inhibiting it. (Lewis, 1996)

The inhibitive effect of constant change on art is visible today in digital work. A typical novelist or writer of the previous centuries could work assuredly for several years without releasing work. To do so in today’s evanescent and turbulent techno-system, the artist risks releasing work that is untenable on new platforms or has become obsolete before it was born. The pressure to produce work that extends the boundaries

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148 The ActiveText project has continued to evolve through various iterations and is now known as the NextText project originating from Jason Lewis’ Hexagram-affiliated Obx Lab. http://obxlabs.hexagram.ca
of the technically possible can be considered one of the primary obstacles to increasing artistic quality.
Appendix F: Alternative Thesis Titles

Here are a few examples of viable thesis I could have written based on my practice by abstracting the interface design from the artistic creation.

"Unified Online Transcription Technology Interfaces: reading and writing in a single web 2.0 tool"
(Project: Thoems)

"Real-time Generative Video Online: Prototypes and Investigations"
(Projects: Thoems, Sooth, Interstitial)

"New Modes of Textuality: How the Internet is redefining Scholarship"
(Projects: Meanderings)

"Expanded Cinema: case-studies involving user-controlled dynamic audio and video"
(Projects: Thoems, Sooth, Interstitial)

"Photo Narratives and Interactivity: combinatorial processes and potentialities in web contexts."
(Project: Teleport)

"VLOG++: Video-Blogging in the Topological Epistemology of Web 2.09"
(Projects: Thoems, Thoems_Public, Noteshuffler)

As I worked on this thesis, it became clear that my research was open-ended and in fact vaguely defined, it encompassed many divergent threads. But instead of considering that a fault, after a while, I began to conceive of it as a strength. Systems, such as the academic research system, will hopefully benefit from diversified practises. I also became aware of many subsets of my research, which in and of themselves, would have constituted viable design research theses.
Appendix G: Poetry, wht it is:

Poetry is emotional because language is a self-reflective technology that permits both reader and writer to scrutinize consciousness.

Poets are bipolar, internal fluctuations building stability out of regurgitated undulations.

Poetry is functional: it tames convulsive tides at weddings and funerals. In lover's mouths it enflames the world. Poetry is a hormonal creature; words are the way it shares.

Poetry is a rope in an abyss. Falling.

When the apparently passionate convulsive fluid of a human's emotional energy encounters an apparently mechanistic rigid digital realm, digital poetry is born.

Communication becomes a future technicality: holograms, implants, biometrics.

The internet is a nascent species. Digital poetry is clinging to its surface.

The ancient message of poetry is that we are not alone. From the mystics to pop music, the resonant message of all poetry is unity. Spatial unity, temporal unity. The universe is a mass of parameters breathing us. Digital poetry augments the potential for all of us to coexist within each other; instead of killing each other and everything else.

Poetry is therefore about peace; digital poetry is about digital peace. Epiphanies and emotion are not incompatible with digital intelligence; they are at the core of it. Intelligence involves love and hate.

Utopia and Oblivion are both whiskers in Time's beard. AI, the Singularity, Genomics, Warfare, all nourish at her breast. Poetry is Time itself. The Time between these words, the timing of things in us.
Appendix H: The Parable of The Particle-Dwellers or Why I Think Human Knowledge is Relative and Contingent

You have been born into a particle system that is animated by physical laws.

There are literally innumerable particles in this system.

Your body is a particle system. Your surroundings are particle systems.

Your life is lived on, and your perspective is confined to, the surface of one of the tinier sized particles in a vast mass of particles which form a body of which you know almost nothing.

Your perspective is incapable of seeing farther than a tiny scratch on the surface of the particle that you call home, earth.

You are given limited memory and limited awareness and limited tools with which to communicate with the other limited particles that surround you.

You never leave the surface of the particle on which you live because your body is dependent on an atmospheric slime.

Furthermore, your life span is equivalent to less than an invisible flicker in the time-span of the entire unknown particle system from which you have inexplicably emerged.

You are temporally and spatially confined.

You build theories collectively with other bodies similar to your own.

You trade these theories as if they were truth.

They are not.
Appendix I : emotions ( a poem )

emotions are parameters
traversing neurological space
gushing transmitters turbulently
impacting cliff enzyme clefts

the heart sings numbers
numbers sing hearts
it all depends on how
u look at it

there is no here and now
that is not arbitrarily algorithmic
order entering disorder
disorder entering order

reentrant inversions
copulating code
every time i say i love u
calculations must be made
Appendix J : Online Venues for digital poetry

*Born Magazine [http://www.bornmagazine.org]*

Electronic Literature Organization [http://eliterature.org/]

Electronic Book Review [http://www.electronicbookreview.com/]

*Turbulence [http://www.turbulence.org/]*

*Poems That Go [http://www.poemsthatgo.com/]*

*FILE(International Festival of Electronic Language) [http://www.file.org]*

UBU Web [http://www.ubu.com/]
REFERENCE LIST


Fish, Stanley Eugene. Is There a Text in This Class?: The Authority of Interpretive Communities. Cambridge, Mass: Harvard University Press, 1980.


Kearns, Lionel. A Few Words Will Do. 2007.


