

INTERFACE

NCSU/MGD573 SEMINAR SPRING 2009

INTERFACE COMMONLY REFERS TO THE POINT AT WHICH TWO SYSTEMS, SUBJECTS OR ORGANIZATIONS MEET AND INTERACT. IN DESIGN, WE MIGHT CALL THIS POINT AN ASPECT OF THE "DEVICE OF INTERACTION" THAT EXISTS AT A SPECIFIC "POINT OF DELIVERY" FOR USE BY PEOPLE AND OTHER SENTIENT BEINGS.

UNFORTUNATELY, THESE TERMS TEND TO RESTRICT THINKING ABOUT DESIGN AS DISCRETE SOLUTIONS TO SOLVE SO-CALLED PROBLEMS; IN OTHER WORDS, THE DEVICE TENDS TO BE OVERSIMPLIFIED AS A SINGLE OR SERIAL ARTIFACT(S). CONTRAST THIS NOTION WITH WHAT THE TERM MEANS IN PHYSICS: INTERFACE IS THE SURFACE THAT FORMS "A COMMON BOUNDARY BETWEEN TWO PORTIONS OF MATTER OR SPACE," FOR INSTANCE THE SURFACE TENSION CREATED BETWEEN AIR AND WATER — WHICH IS BOTH AND NEITHER AIR AND WATER. THIS DEFINITION RECOGNIZES INTERFACE AS A CONDITION OF CONTACT — FOR OUR PURPOSES, IT SUGGESTS A THING THAT IN CONTEXT CREATES EXPERIENCE WHEN USERS INTERACT WITH/IN IT, MOST OFTEN A REPEATABLE EXPERIENCE.

North Carolina State University's Spring 2009 Graduate Graphic Design Seminar, *New Information Environments: Investigating Interface*, presented students with a diverse range of perspectives from contemporary practitioners and theorists who currently create and research interface(s) in a variety of ways. Over the course of a 15-week semester period, students discussed relevant readings and met physically and/or virtually with guest lecturers (Peter Lunenfeld, Katherine Hayles and Ian Bogost) regarding the contemporary understanding of interface(s). A collaborative online environment (Google Docs) facilitated further discussion, amassing into a wealth of written responses, interpretations and speculations. This new body of work, presented here as a PDF-format compendium, we hope, should make for a most insightful read.

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INTERFACE ESSAYS

DESIGN PROGRESS

Written by Tania Allen, Commentary by Cady Bean-Smith

It is important when looking forward to evaluate not only where we *are*, but also where we *have been*. When are we as designers resorting to established design conventions? When are we subjecting ourselves to our own visual heritage?

It is difficult to think about “interface,” “technology” and “online environments” without speculating how each might progress and impact our future. As designers, we pride ourselves on discovering, innovating, and looking forward, to incite understanding of larger issues, push boundaries of communication and ultimately participate in creating a better world for future generations. In the current technological landscape of boundless opportunities, it is critical for us to reflect upon where we are and consider whether or not we are creating the kind of understanding, environment and connections that will not only advance us technologically, but also as human beings living in a complex society. What do current interfaces, technologies, and online environments afford that can help us progress collectively? How effective are we in accomplishing our goals? The online environment is powerful in its ability to collect and showcase quantity, and in many instances at the expense of full consideration of what it is that we’re collecting and presenting. How can we harness current technologies to help make connections and encourage deeper understandings of our lives and world—where we (as a people) have been and where we are going?

In his essay, “The Ecstasy of Influence,” ‘genre-bending’ novelist and essayist, Jonathan Lethem, points out the phenomenon of “undiscovered public knowledge.” The phenomenon suggests that everything that we consider has likely been considered before, as Don Swanson, a library scientist at the University of Chicago, identified in the 1980s. “Left to its own devices, research tends to become more specialized and abstracted from the real-world problems that motivated it and to which it remains relevant. This suggests that such a problem may be tackled effectively not by commissioning more research, but by assuming that most or all of the solutions can already be found in various scientific journals, waiting to be assembled by someone willing to read across specialties...Does our appetite for creative vitality require the violence and exasperation of another avant-garde, with its wearisome killing of the father imperatives, or might we be better off ratifying the *ecstasy of influence*—and deepening our willingness to understand the commonality and timelessness of the methods and motifs available to [us].” (1) Within design, the lure of infinite possibilities can distract us from exploring and possibly repurposing current technologies to create deeper understanding, attention and meaning.

Going Deeper

The relationship between interface transparency and curation is a critical element to our understanding of how we think about and experience digital environments. The perceived neutrality of the interface influences our trust of it, and distances our associations with the curatorial process embedded in it. In other words, we, as users, are less likely to question whether or not the interface is ‘working,’ or what we are being allowed to look at, to do, to experience, because the interface itself seems not to have an ‘agenda,’ when in fact, there is an agenda inherent in it. Bolter and Gromala term this “the myth of transparency.” (2) The history of interface design has been strongly rooted in western art and modernist philosophies—techniques and theories that involve universality, realism, perspective, and the ability to blur the boundary between art and audience. In interface design, this means simplification as a means to increase ease of use. For example, the designers and developers

The application of the modernist philosophy of “ease of use” to contemporary interfaces is often interpreted as expedient user access to certain types of information. Privileging speedy click paths leads to a troubling redundancy in site behaviors and architectures across a whole host of disparate interfaces. Too often this approach undermines the potential for the unique character of the site content to be made visible and accessible.

Here, the appeal for more qualitative use of aggregator technologies and the networked computer is supported not only by Hayles, but, moreover, by Peter Lunenfeld. His discussion of mindful downloading and meaningful uploading seems entirely in concord with this petition for more valuable interface connections and communications.

of Facebook and Twitter make choices about what and how we experience the site. They chose to create sites that suggest simplicity and neutrality through standardized structures and behaviors. Every user of Facebook has an identical personal space—a limited dimension for profile picture, white background, and the same ‘list’ of what is being updated to name a few. While the interface affords the opportunity create and share personalized content, it also determines the limitations of how and what we create and share. We are not able to start a dialogue that might encourage participation from those outside of our network, and certain words are off-limits. And because of these decisions and our acceptance of them, we look at sites like this as ways to waste time—as purely social organisms. Both Facebook and Twitter have great breadth, but little depth. The interface does not call attention to the trends, the background of users, or help us create more compassion, empathy or understandings. We are taken to the ‘white room’ and left there to get lost—to explore the surface of our networks and feel as though we are engaging with a vast number of people, but not necessarily going any deeper into our own understanding and relationships with them.

Aggregator technology is particularly fascinating in the sense that it provides a hub, or repository, from which to connect people, ideas, information and understandings globally. People of all incomes, educations, and cultures can access environments that are both dynamic and recorded to meet particular needs. The affordance of this type of technology to connect ‘dots’ of information, people, places, concepts and viewpoints is invaluable. At what point in our lifetime have we (potentially) at the click of a mouse, been able to understand what people in Indonesia think about same-sex marriage? But, for the most part, this technology is not being used in this manner. We commonly use aggregators to connect with other people—see pictures and videos that they’ve uploaded, what they’re writing on their blogs, even news stories that they’re clicking on. But oftentimes, these tools are experienced in a vacuum. We can see how people are feeling in Sydney, but not necessarily the contemporary events that might be influencing that. We waste time with ‘chatter’ and engage in a type of dialogue (or monologue) that, while entertaining is, for the most part, shallow. We could instead strive to become smarter, more compassionate, more educated, more accessed. The implications of truncating communication are evident in our dwindling tolerance for long, deep conversations and face-to-face contact. N. Katherine Hayles, noted post-modern literary critic, has termed this ‘hyper-attention.’ The trajectory of current technologies encourages this type of multi-channel, simultaneous, shallow communication, but it could also be used to facilitate a deeper attention and understanding.

Interface and aggregators have the potential to help us consider connections in a more reflective way. What if we could search for certain terms within Facebook updates to see trends in order to get a deeper understanding of what friends (or people in general) were interested in. The type of connections we could initiate through current technology could facilitate searches for friends (and those outside of your network) that share similar interests and/or offer expertise that could be a resource for you; to actually *make* friends, rather than just collect them; to facilitate offline interaction and bring people together in the real world (or even deeper online interaction), rather than substituting it with a limited online version. Who knows where conversations will go, what we will learn, what new perspectives we can gain through the face-to-face, wandering conversations that the status update will never reach. Additionally, we could see the trends of comments made about local news events by geographic region, and compare it with actual news reports. This could allow us to engage in a dialogue as a collective society— to involve hundreds or thousands of people locally or globally to sort out an understanding (or a misunderstanding) about a certain event—to understand *why* people interpret current events the way that they do and to inform our understanding of these perspectives.

Context

What are the implications of an online environment that increasingly condenses our searches for information and pleasure into one virtual space? How might interface designs of the future account for the user's need to move between behaviors associated with both research and enjoyment? What affordances present themselves in support of the transitions between these modes of use?

The online environment is also a powerful research tool. Students now go to the Internet first, before considering stepping foot in a library. The search engine is central to how we research. It provides our access into a topic and what we will ultimately walk away with, yet the search engine interface has not progressed beyond a text field and a list of results. While developing new features such as searchable email, RSS feeds, and see artwork of the day (all of which I have and love), search engines continue to give us a topic dump. It is almost a game to figure out what terms and words to insert in order to come close to what we are looking for. Book marking sites like Delicious are interesting in their ability to showcase sites that 'others like you' are finding interesting, but this is most effective for browsing, not necessarily for attempting to find a particular piece of information.

Online environments that explore issues of context, connections, and relationships offer studies that could inform more information-driven and practical applications. For example, the ability to sort blog posts by age, region, gender and even weather at www.wefeelfine.org could be utilized by more robust search engines. Beyond the sorting criteria offered by We Feel Fine, sorting by subtopics such as history, economy, and geography would enable the user to edit out certain results without necessarily abandoning them. Customizing sorting agents could show our search results through various lenses, such as contemporary discourse, art, and design. Rather than adding to what we can access, designing interfaces that focus on making access more usable could help us understand a particular context and framework within a topic in greater depth.

As an interface, We Feel Fine presents content in ways that make relationships (to varying degrees) visible at multiple levels of complexity (from overview to detail) and allows us to dig deeper without losing our point of reference. Robust search engines, such as Google, could utilize the interface design strategies demonstrated by these explorations. In her book *Writing Machines*, Katherine Hayles also discusses the notion of materiality and the preoccupation that writers have for trying to transfer the written page into a digital form (or vice versa) without taking the material differences and inherent affordances between print and online environments into account. Websites, for the most part, still employ the book metaphor, moving us from page to page, but not placing the current page within a larger context. If we were able to connect browser pages in such a way as to allow for simultaneity—understanding where we have been and where we might want to go—would serve to help us navigate through the immense landscape of online environments without feeling as lost, or that going forward necessarily means abandoning where you currently are

This issue of transfer of information across media platforms is echoed by Erin McKean in her TED talk *Redefining the Dictionary*. She expresses a disappointment with the current failures of online dictionaries, describing the solutions as "Victorian design merged with modern propulsion." What she goes on to describe is a lack of design decisions that capitalize on the affordances of the internet: crowd-sourcing, accessibility, and revisability.

As designers, we can learn from current investigations that effectively enable users to understand systemic connections among isolated content, and how we can repurpose the salient aspects to create greater meaning and understanding in the online environment. Can we slow down to consider the outcomes of what we are designing and how we are designing into or away from them? As we move at an exponential rate towards the next version—where everything is up for grabs—we have yet to understand the power of interface, technology, and online environments to help us, as users, gain access and first-hand knowledge in ways that we have not had access to in the past. The assumption that interface design only dresses the surface of content ignores the influential constraints of materiality (Sony touch screens and the BumpTop technology of interface design). If we remove a degree of interface transparency, we could more effectively understand the root of interpretations and understand the impact of complex relationship within the real world. As I wonder what technological progress really means, and if we are achieving it, the depth and breadth of our experiences and understandings gleaned from interacting with interfaces play a significant

role in progress towards connecting as a global society.

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DESIGNING INTERFACE

Written by Cady Bean-Smith, Commentary by Brooke Chomyak

“The challenge is to find ways to express, not everything in the world but some part of the world in its complexity. The tension between our vision for the work and the form we choose mirrors the tension between the world in its incomprehensible vastness and our attempts to make sense of it.”

—Peter Turchi, *Maps of the Imagination: The Writer as Cartographer*

There is an existing array of increasingly intricate and interconnected information in the world. It is evident that there is a public need to access, experience, filter, and make sense of this information. In this context an emerging definition of design practice finds the designer managing, mining, and making meaningful complexity. When faced with the task of designing an interface for such a complex array of information, a designer may ask themselves the following three questions (among others): How can I order this array? How can I represent this order? And how can I create access to this representation?

How can I order this array?

First, the initial, and often daunting, task is to arrive at an understanding of the scope and shape of the issue for which you must design. Be exhaustive. Cast a wide net. Examine the macro and micro components of a system. Then, arrive at the terms by which you will organize the information. This will be subjective however these choices should not be confused with the imposition of personal preference or a reliance on taste. On the contrary, it is the formulation of a critical stance developed out of a research methodology and a process of inquiry unique to each designer. A piece of this stage of the design process is to create and impose a set of constraints. Here it becomes an exercise in creating a logic. This logic will help decide direction, and will exist as a rubric of sorts to push up against for the series of design decisions that follows.

An example of an ordered array can be found in the work of Jonathan Harris' *Whale Hunt* project. *Whale Hunt* is an experimental screen-based interface that examines the narrative reconstruction of an Alaskan whale hunt through the organization of a vast amount of content and data. Harris employs a number of organizational principles in the site such as chronology, cadence, and average color of images captured. Perhaps the nuances of the experience are described best through Harris' grouping principles found in his creation of four “constraint” filters. The constraints panel “can be used to isolate various substories occurring within the larger narrative. ... Multiple constraints can be combined to shape different substories (Harris).”

Part of creating an order for an interface becomes about the levels of organization and the timed release of information. An interface that creates interest and invites exploration will not be one that reveals itself totally upon the first brush. Instead a more intriguing interface

Peter Lunenfeld, a professor at UCLA in the Design and Media Arts Department delves into the complex relationship with the networked computer in his upcoming book, *The Secret War Between Downloading and Uploading*. Lunenfeld claims that as humans we have a need to create. The author writes, "humans are unique in their capacity not only to make tools, but to then turn around and use them to create superfluous material goods - painting, sculpture and architecture - and superfluous experiences - music, stories, religion, philosophy. Of course, it is precisely the superfluous that then comes to define human culture and ultimately what it is to be human."

If it is human nature to create it can be said that cheap universal technologies have facilitated the ease in which we upload massive quantities to the networked system. An article written in the *New York Times* by Kevin Kelly states that “because of new consumer gadgets, community training, peer encouragement and fiendishly clever software, the ease of making video now approaches the ease of writing.”

Kelly, Kevin. "Becoming screen literate." *Idea Lab* 21 Nov. 2008. <http://www.nytimes.com/2008/11/23/magazine/23wwln-future-t.html?_r=1>.

may indicate a path, or prompt an investigation by engaging the user in a feedback loop. For example, the user may supply some form of input and the interface may respond, and that interface behavior may suggest a different kind of mode of user input. And so on- in a cycle of interaction that mediates the experience of the user over time.

Designers are educated to create and design artifacts. John Thackara questions the established design school pedagogy in an online essay titled **MAKE SENSE, NOT STUFF**. "What would architects design, if they did not design buildings? What would designers design, if they did not design products, or posters?" In this essay Thackara outlines a three-step plan to connect design schools with the green economy. Mapping our assets and resources, connect with local resources, and finally using a new language, which shifts the focus away from technology-based solutions to enabling solutions.

Thackara, John. "Make sense, not stuff: A three step plan to connect design schools with the green economy." Weblog post.

If designers will be engaging in mapping assets and connecting local economies it will be important to consider co-creation as part of the ordering process. Co-creation is seen as the act of creating work by standing together with those for whom the project is intended. In the 2020 Forecast, published by the Knowledge Works Foundation, the authors discuss tools and methods for enabling co-creation and new ways of thinking, learning and designing. These thinkers foresee importance in sustaining current trends in beta building, an act of co-creation. Designers who use transparency of design processes, collaboration, and rapid iteration techniques create a beta culture displaying open critique and reflective practice.

How can constraints be user determined, such as searching for user specific content? I think this will create a more meaningful experience for the user, an experience that can change over time.

Establishing frameworks for participation, organization and community managed resources though the process of co-creation

How can I represent this order?

Once the array has been filtered and parsed according to a logic, then the design task becomes to formally represent the research and resulting structure. The order must be given a visual, spatial, and/or experiential representation that comes out of the peculiar characteristics of the content and context of the project. These will be visualizations that are sympathetic to, and in concord with, meaning. It is important to distinguish these expressions from purely expository or iconic renderings that aspire to accuracy of illustration. A form making approach can be about specificity over accuracy, about clarity over correctness, and about creating an understanding over providing an explanation. Ultimately, the representation question becomes- how specific is this expression to the particular critical position arrived at during the research and ordering phase of the process. This tactic of specificity of representation claims a slice of a notion as an area of investigation. There is potential to indicate the larger surrounding breadth of experience through the nuanced representation of an essential aspect of the larger whole.

In light of this approach to representation the visual redundancy and flat designs found in so many screen-based interfaces seems like a particularly shallow reversion to a reductive universal aesthetic. There is a real absence of rationale as to why so many websites with such a variety of content would be designed with practically identical structures, visual hierarchies, and site behaviors. Many opportunities to give form to the uniqueness of content or the attributes of experience are sacrificed in the name of an efficient click-path. As designers we must ask ourselves what is truly valuable to user experience and when are we subjecting ourselves to design conventions. It is crucial to be mindful of when we may default to habit, routine, and find ourselves relying upon, or recycling, our visual heritage.

Making sophisticated formal decisions is not about style washing. Form is design speaking, and it can help inform a user how to engage with an interface. Consider Ben Fry's Tendril browser. The processing based program is an information visualization engine that takes the text content of websites and constructs dynamic 3-D typographic structures. Branches grow off of the original structure from text links, and form large swirling compositions. The user may guide the growth direction of the structure by choosing which links to select. In this way the form of tendril not only provides a fresh and dimensional rendering of the web browsing experience, but also functions didactically indicating to the user how interact with the browser.

The juxtaposition of examples above (the swarm of inverted "L" websites out there and Tendril) is not meant to suggest that the issue of representation may be whittled down to a question of abstraction vs. articulation. It is perhaps better understood as a degree of sophistication of interaction design, and, in Tendril, the illustration of the favorable impact of a tight linkage of representation to the specific nature of an experience.

How can I create access to this order?

An interface contributes to, and grants access to, the formal representation of a designed framework. Interfaces have characteristics, affordances, and historical usages that influence user interaction with them in ways that are both obvious and subtle. The ways in which designers shape, order, and arrange an interface will influence how users engage with

designers can facilitate and create meaningful experiences. When designing an interface the creators should ask themselves how can the constraints be user determined instead of predetermined by the designer?

Finding a balance between form making, research and the ordering process is determined through time given to think through making. This type of reasoning is an entirely different process one that might be unique to designers.

Jessica Helfland in an article on Design Observer wrote, "I have long tried to sustain a practice in which I write to figure out what I can't make, and experiment with form as a way to push the idea even further." The design process is seen through a different lens when picking up your pencil and placing it to a sketchpad.

Helfland, Jessica. "The Art of Thinking Through Making." Design Observer. 21 Apr. 2006.

Style Washing can be defined as: To cleanse ones formal language of any characteristics of an ideology, particular period or movement.

Ben Fry has now joined Seed Media Group to direct a new visualization studio called the Phylotaxis Lab. Based in Cambridge, Massachusetts, Seed Visualization helps companies and governments find solutions to clearly communicate complex data sets and information to various stakeholders. The unit's research arm, works to advance the field of data visualization through basic research and experimental design work.

that thing. Likewise, the user's engagements often affect the shape and order of the thing itself. It would be shortsighted, however, to understand the concept of interface as that of a passive receptacle or a quiet channel for information. An interface is something a user may draw out of as well as something they may experience through. The out-dated characterization of the interface as a simple scrim or surface upon which the true character and content of the interaction rests is replaced by the notion of interface as a mediator of experience, and the understanding of this term is meaningfully expanded.

It is fascinating to visualize the affordances which technology will grant designers and users in the future. What visual tools might we have to facilitate this culture of participation and co-creation?

The notion of interface is inextricably linked to the idea of technology. Technologies have particular qualities of structure, form, and physicality that combine with content to create the meaning of the resulting artifact and the experience of the interface. Every interface is embodied with materiality, which is distinct from simple physicality. Materiality is an emergent property that is revealed as the result of human artistic intention and a set of physical attributes (Hayles 33).

Interfaces are made distinct by their unique materialities, in part shaped by physicality and technology. It is also important to note that these different technologies create affordances in distinct ways. Consider lexicographer Erin McKean's contention that the dictionary no longer belongs in a book technology, but on the networked computer. Her appeal is made entirely on the basis of affordances. She imagines the interactive abilities of the computer--multi-sourcing, multi-modal, accessibility--applied to the dictionary and sees a far greater fit for the evolving English language than the static, site-specific book.

The importance of the role of technology can also be observed in the realm of user perception and critical discourse. Once we allow different technologies to create unique and influential materialities, we must likewise acknowledge that any analytical perspective or critical lens brought to bear on an interface must be media specific. An understanding of the affordances and qualities of the medium employed in an interface must precede any rich and authentic analysis of the thing. Attempting to transpose critical strategies from one media to another is not entirely invaluable, but will ultimately result in a surface, and incomplete experience.

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A GRAND THEORY: A TELEPHONE INTERVIEW WITH 2039 FUTURE BROOKE CHORNYAK

Written by Brooke Chornyak, Commentary by Sidney Fritts

Someone once said, "Any useful idea about the future should appear to be ridiculous." That being said it is human nature to be fascinated with the future, we write scores of books, make movies and form think tanks of intelligent people who sit around trying to predict it. What if we had the ability in the future to call our selves for advice and clarification when we are debating future technologies, functions and designer roles?

Over the three months of the semester we've been exposed to various practitioners and

theorists who are researching and creating interfaces. From these readings we have formed opinions and changed these opinions, traveled down paths of investigation and found points of reflection. As investigations in seminar merged with studio and vice versa we created a dynamic environment of making, discussing, reading and writing. Yet this investigation has left us feeling as if it might be a fruitless pursuit to define interface. If we could consult with our future selves what type of dialogue could we have?

The phone rings.....my own voice is heard on the other end, though I sound altered, older, more mature I suppose. The future Brooke will be represented as FB, the writer, or present day Brooke, is PDB.

PDB: Hello

FB: Hello

PDB: I didn't think this would work but I guess we should thank the future engineers for this opportunity.

FB: Ah yes, the future has performed some technological miracles, some predicted and many that were not even imaginable.

PDB: I sense that interface design will radically change in the near future.

FB: Yes, technology makes significant advances around 2010. Responsive designers were needed to wade the trends and meet the collective demands.

PDB: If I begin with some of my most current thoughts on interface we can see where that discussion leads us.

FB: Certainly.

PDB: The networked computer allows us to communicate, share resources and information instantaneously. On the Internet, physical distance is even less of a hindrance to the real-time communicative activities of people, and therefore social spheres are greatly expanded by the web and the ease at which people can search for online communities and interact with others. That being said we are still aware of our solitude, a communication mediated by interface. In bringing all these functions together have we heightened human awareness in one sense, but dulled it in another.

Human to human communication through technology has built a vast global village. However the current technology mediates human communication. Users are aware of the interface limitations, which lack the feeling of face-to-face communication. Nanotechnology, an emerging science, might be the key blurring the lines between the real and virtual. In the future might the population be capable of creating a mediated experience that is transparent? This transparency or window will be the key to facilitating personal and fulfilling human interaction. The implications of these technological advancements in the virtual world might be detrimental to real world behaviors, understanding, and interactions. If the physical materials of this new technology change how can designers shape appropriate interfaces that are both reflective and experiential, provide affordances that facilitate a more humanist experience?

FB: For a period of time designers and developers thought they needed to blur the boundaries between the virtual world and the physical world, however we were wrong. Since the beginning of computing this has been an ongoing discussion and shortly after 2012 our relationship with interface relating to what is real versus virtual, natural versus artificial became indistinct. At one time machines obviously mediated our relationships with others and that technology was tangible, we could see and touch the screen and know it was a screen. Nanotechnology emerged as a way and method for developing machines at a molecular scale. The engineering revolution called synthetic biology transformed our ability to emulate and

even redesign aspects of the biological world. While designers were focusing on designing invisible interfaces they failed to notice that we were still interacting with a machine rather than a human being.

PDB: Jetpacks, hover boards, the end of diseases are the future technological advancements the present population thinks will happen. Nanotechnology is promising a revolution in the physical make up of our technology. Synthetic biology is a new area of biological research that combines science and engineering in order to design and build novel biological functions and systems. These two emerging fields alone open doors of possibility whose impacts could be more far-reaching than a jetpack or hover board. As technology alters its physicality what role will the designer play? Now I believe designers need to and feel justified in controlling the affordances in interface design. Increasingly people want to take part in creating and ultimately forming culture, particularly online culture.

FB: There are benefits to designer controlled interface, designers have studied human behavior, means and successful methods of communication and know what is formal qualities equate the results necessary for function. However co-creation, co-design or democratized design is a valuable enterprise, which leads to surprising, insightful solutions and ultimately richer creations. Isaac Newton said, "In his great work, he stood on the shoulders of giants".

PDB: If there is little value in designing invisible interfaces what affordances should we design for human interaction, which is mediated by the computer?

FB: Having gone down the wrong path with transparent interface designers now have a new focus. People desire and value human-to-human interaction, and this is facilitated through connective hubs. These affordances are tools for mapping our collective assets, accessing knowledge; organizing people and creating networks that enable them to build better local economies. Not only found through digital interfaces these tools have been built into a large interconnected system of small devices that help us seek and gather together.

PDB: The author John Thackara who wrote *In The Bubble* writes on this topic. "The modest design actions we might take to improve the efficiency of information transfer within a network are to create hubs, or add new links, to act as artificial shortcuts between otherwise distant regions" (Thackara, 2005). We are regaining a common respect and understanding for what people can do that technology cannot, hopefully designers will soon be providing tools for community organization and collaborations. Interfaces have the potential to reshape user's thoughts on control and power, government, and communication.

FB: Exactly, our design focus now is to explore how interfaces can facilitate the growth and structure of local economies and local communities.

PDB: Peter Lunenfeld, discussed in his upcoming book humans have a desire to create. In the opening paragraphs the author writes, "Humans are unique in their capacity not only to make tools, but to then turn around and use them to create superfluous material goods - painting, sculpture and architecture - and superfluous experiences - music, stories, religion, philosophy." (Lunenfeld, 2009)

We see trends of collaboration, rapid iteration through a beta culture, which facilitates an open critique and reflection. We have cheap and universal tools of creation and a network that richest billions.

Online community collecting has increased significantly, collecting of self-made videos, images, and creative writing. Our cultural archive is overflowing, as it never has before and the libraries of the past pale in comparison to the amount of media we currently and will continue to collect online.

What if we were putting our effort into productions that created affordances to connect

Nanotechnology:

Shortened to "Nanotech", is the study of the control of matter on an atomic and molecular scale. Generally nanotechnology deals with structures of the size 100 nanometers or smaller, and involves developing materials or devices within that size.

Synthetic Biology:

A new and growing science that focuses on re-designing and re-building natural biological systems synthetically from the ground up. These new systems will have many purposeful uses and may enhance those in nature.

There is a fine line between emulating and enabling human interaction. A lot of fiction has imagined future interfaces as natural conversations between human and machine. I question how effective those experiences will really be and one approach could be to design interfaces as tools for interaction. It begins to remind me of some of the principles from architecture and industrial design when the form is derived from the process of making. Let the interface be an interface!

We are already beginning to see the proliferation of mobile computing devices that gather all sorts of information and are extending the web to new areas. The continued progression of ubiquitous computing will

hopefully provide more seamless integration with our lives while adding additional information and value to social interaction.

I wonder if the increasing use of social networks, allowing individuals to find others with similar interest around the globe would demand a way to facilitate those long distance interactions. Even today some of my closest friends live on the other side of the country and a way to build those ties through interface is and will continue to be important.

How do we manage all the new data accumulating and interactions taking place? I think this will be the most important question for interface designers over the next decade. I think there has been some interesting solutions presented recently including RSS feeds, Digg and other aggregators but how do we ensure that users find relevant information while still leaving room for serendipitous discovery. That seems to be a large concern as things become increasingly tailored and customized.

It's curious that education standards have dropped considering the possibilities for video games, which will only continue to become more sophisticated and pervasive. It's clear that there is a missed opportunity for educators to fully realize the potential of this medium. Maybe the widespread popularity of video games with no apparent educational value, like *Halo* or *Grand Theft Auto*, is creating a stigma toward the entire genre that repels educators from exploring their rhetorical properties.

with the larger network?

FB: The negative aspects of co-creation, open source software and the democratized production and design were few. Systems were needed to coordinate the advancements of small-scale community-based organizations. For a while transliteracy training was also needed, the masses automatically had operate at the lowest intelligence level. The amount of content uploaded was uncurated, tagged incorrectly; they failed to collectively make sense of the content. Designer's roles were evident, and their tasks became curatorial, creating structures for managing the complexity and lessening information anxiety of society.

PDB: As we move forward presently as designers, you say must operate as marshals of culture, mindfully juxtaposing ideas, images, sounds, and interactions. We know the importance of user testing new ideas and systems but increasingly designers are seeing the value in co-creation.

FB: You seem to have your head in the right direction, and it will essential for you to continue investigating within design the creation of affordances for human interaction because these systems form the basis of our future.

PDB: I feel interface design is an enigmatic conversation and it seems as if our lives with technology are becoming increasingly complex it was helpful for me to discuss my current ideas and trajectories with you. As well as asking these questions on the value of transparency, enabling human-to-human connectivity, and the current trajectories for interface design and interaction with her you. Thanks

FB: Your welcome, watch out for rabbits, that's all I can say without altering the time space continuum. Enjoy life, Night

PDB: Rabbits? humm ok got it, I will, Goodnight.

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TEMPORAL INTERFACES AND HYPER ATTENTION

Written by Sidney Fritts, Commentary by Anthony Fugolo

Over the past two decades, our society has witnessed the rise of digital information and electronic devices. Consequently, we have raised a generation of individuals that embrace and adapt to these information-rich environments. The successful scanning and interpretation of multiple streams of information is a skill facilitated by new technology that has changed the way people think. This shift in cognition has occurred as individuals gradually became accustomed to the interfaces of digital media. Over the same time period we have witnessed American education standards drop significantly. While there is a slow and steady crawl towards changing the way we approach education and persuasion, I believe there are some affordances inherent to interface and game design that offer ways to connect with users/students and foster a better learning environment. The writings of Peter Lunenfeld, Kate Hayles, Ian Bogost, Steven Johnson and others have all discussed ways for approaching new interaction patterns and how users understand these experiences. For the sake of this discussion it's important to distinguish between emotional engagement and intellectual investment.

Emotional engagement is tied to game play that is entertaining, delightful and/or has a system of goals and rewards that encourages continued participation.

Intellectual Investment is the interaction is based on knowledge gathering or technical skill practicing in an effort to expand ones knowledge.

By evaluating how design can encourage intellectual investment in the user we need to address how the interface develops over time, cognitive differences in individuals, and the mechanics that form the interface and interaction.

Kate Hayles, a literary critic and conceptual writer, discusses the shifts of cognitive patterns over time in her paper *Hyper and Deep Attention: The Generational Divide in Cognitive Modes*. Her discussion is rooted in the following two definitions found in the article:

Deep attention, the cognitive style traditionally associated with the humanities, is characterized by concentrating on a single object for long periods (say, a novel by Dickens), ignoring outside stimuli while so engaged, preferring a single information stream, and having a high tolerance for long focus times (Hayles 187).

Hyper attention is characterized by switching focus rapidly among different tasks, preferring multiple information streams, seeking a high level of stimulation, and having a low tolerance for boredom (Hayles 187).

While she discusses the validity of both modes of thinking, she underestimates the role and benefits of hyper attention in contemporary culture. Steven Johnson is a social critic, technologist, and author of *Everything Bad is Good For You*, in which he discusses the effects of new media on cognitive development. He describes the benefits of hyper attention in today's society and its increasing importance in jobs and functions that will require the ability to sift through vast amounts of information. The complex interactions demanded by present-day digital media (video games, social networks and mobile devices among others) are providing the cognitive training grounds for a generation of users already being shaped by this ubiquitous technology. Johnson uses the term 'telescoping' to discuss a user's ability to test a designed system, discover its rules and build an understanding of how interfaces and interactions nest. As users jump between hyper and deep attention, they are constantly scanning large amounts of information to gauge its relevance in relation to their needs and interests. It is this search for relevant and emotionally engaging experiences that define hyper attention. By comparing Hayles' and Johnson's theories we can revise the definition of hyper attention to read, "seeking high levels of engagement" instead of reacting to meaningless stimuli.

According to Johnson's philosophy, social networks seem to be the perfect model for future educational systems. They nest a wide variety of content and expand to house limitless amounts of data. If MySpace can introduce HTML to an entire generation, the power of a network built on specific educational objectives could move learning outside of the classroom for students who do not respond well to conventional teaching styles.

Ian Bogost, a video game theorist, critic and designer discusses the basic affordances of digital interaction through his definition of procedural rhetoric, or "the art of persuasion through rule-based representations and interactions" (Bogost ix). His writings focus on the potential for video game mechanics to persuade and educate individuals through their coded rules for interaction. However, his discussion of procedural rhetoric fails to acknowledge the evocative power of an experience and focuses on pure intellectual engagement. Ignoring the emotional qualities of procedural rhetoric undermines an important part of interaction design—the initial motivation to engage. Through increased study of the cognitive sciences and a deeper understanding of human emotion it is possible to apply his theories of procedural rhetoric and increase the level of user engagement over time. For example, the video game *Sim City* is a successful demonstration of moving a player from an initial emotional engagement to an extended experience that offers intellectual investment. The game tasks the player with creating a functioning city. Bogost, Johnson and others have discussed the game as a milestone in interaction design because it builds a nested system of interaction. At the onset of the game the player has a few simple controls and must make systematic choices if his city is to survive. Over time the interface adds layers and complexity as the system grows to reflect the player's choices in managing the population and

neutralizing the natural disasters that occur. Through this process, the procedural rhetoric educates the player on the rules, consequences, and interconnections that develop in the system as the game progresses. It is remarkable that such a complex, seemingly tedious system engages rather than intimidates the player. Essentially, the player encounters the system as entertainment, with all the qualities that define an emotionally engaging experience, but in the process they have laid the groundwork for an intellectual investment in the basic concepts of economics, management and politics. While not an exact replication of real life municipal management, it still carries the fundamental ideas of nested interactions that are important for the player to remember. Considering *Sim City* has sold millions of copies, we can reasonably anticipate an increase in users that are accustomed and even expect similar interaction patterns in common interfaces.

The video game *Spore* also comes to mind as a powerful example. As players evolve their sprite from a unicellular organism into an intergalactic civilization, sciences such as biology, anthropology and astronomy are gradually introduced over a long, episodic game play experience. The massive popularity of *Spore* proves that the *Sim* franchise is not a fluke; educational games can resonate in pop culture.

How can these concepts transfer into a new practice for educating individuals that do not have an intrinsic or intellectual predisposition to engage with a system? The answer may lie in how we build systems for continuous use over time. How an interface accounts for increased user understanding, current level of engagement and deploys its procedural rhetoric is important to consider. An emotional component is valuable through the entire experience, but it is most critical in the initial contact—where users develop an understanding and affinity for the system. As users become more familiar with the patterns of interaction, predictable responses from the interface are important while still allowing for surprise, delight and increased complexity. The game industry has done a remarkable job facilitating emotional engagement through entertaining and simple systems of goals and rewards. Coin drop, a term from the 80's arcades that refers to the incentive system that encourages players to keep inserting quarters, was a simplified version of emotional engagement also built on goals and rewards. Overtime, if we design educational and persuasive interfaces with this progression in mind, we will see a shift from emotional engagement to intellectual investment, eventually producing enduring knowledge.

So how do we design content and systems that facilitate these extended interactions? If we begin looking at interfaces as a progression from emotional engagement to intellectual investment while simultaneously promoting the evolution from hyper to deep attention carried through procedural rhetoric, we will see the potential for new educational models. In the initial moments of hyper attention—the scanning for relevance, needs, and self-interest—we can draw a correlation to the importance of emotional engagement. By creating a system that rewards extended interaction and increased complexity we will be able to move the student/user towards intellectual investment followed by knowledge retention. This model could be a way to excite students/users about things they initially deem unimportant and irrelevant. This can also account for the various levels of experience and different cognitive strengths users have. As designers create tools for users to generate their own content, this development over time becomes increasingly important. This also implies that the idea of a transparent interface is not the answer. The ability to facilitate simple functions for the novice but provide a deep, nested system for the experienced user is critical for rewarding interaction. Nested and context sensitive interactions that walk the fine line between predictable and surprising offer the strongest experiences for the user and quite possibly a new model for educating a generation defined by progressive interactions.

I believe we are on the cusp of a technological plateau where information from social networks could inform game play. Thus, emotional engagement is achieved through procedure as well as superficial content, creating a truly unique experience that is tailored to the individual player. In this way, players would be more likely to build the affinity to which you refer.

To further your point, I think a unified set of principles that informed the hyper to deep attention gradient would be implemented across the entire K-12 system. Games would have to mature as students moved closer and closer to a deep attention over time. Older students would not need the intense level of emotional engagement that younger students require because their minds would be attuned to intellectual investment of previous video game experiences. Essentially, an established arch of game play could create a cohesive

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educational experience that spanned an entire student career.

MEDIATION AND MORAL DECAY

Written by Anthony Fugolo, Commentary by Lincoln Hancock

I was thirteen when I was caught shoplifting at Target. Newly acquired Metallica and Public Enemy cassettes were tucked safely in my pocket as I was unlocking my bike to leave when a security guard approached. I vividly remember the fearful, sinking feeling. He showed me camera footage of me pocketing the tapes. A police officer soon arrived and led me out of the store in handcuffs. Shoppers and employees gawked.

I was processed like any criminal. By the time my father picked me up from the station I had an official juvenile record complete with mug shots and fingerprints. I would later repay my debt to society by spending a couple of days collecting litter and transporting trash at a local fair.

This incident had a profound impact on my future as a crook. I felt terribly guilty. I was painfully embarrassed. I abandoned my shoplifting career and never looked back.

Five years later the stigma of stealing had faded. It was my freshman year of college. I had never been online before so my roommate graciously showed me the ropes of navigating the Internet. One day I noticed an unlabeled compact disc on our dresser and I asked him about it. He explained it was possible to harness music from the Internet and then inscribe it onto a CD. My mind nearly exploded. I was enthralled with the possibility that the computer in our dorm room might give birth to a palpable artifact; my enthusiasm for music and collecting records only amplified my interest.

I was determined to learn as much as I could about this miracle of modern technology. Quickly I discovered that to accomplish anything really interesting—like making my own CDs—I would have to enroll in the bad guy camp. Enamored by my newfound technological potential, I was more than willing to turn a blind eye and join the party—despite telltale signs of iniquity in the domains I began to peruse. Piracy was a tangled, convoluted, clumsy enterprise, but I eventually got the hang of it; I became a bona fide thief.

In the ten years since, it has become much easier to gain admittance to the party. The myriad rules, cryptic iconography, and complex processes that defined the dark side of the web a decade ago are gone. New technology now facilitates illicit trickery on a grand scale. Huge bandwidth and polished interface design make stealing as fast and easy as checking email. Mediations—designed opportunities for pause and reflection—are rare.

The transparency of new file sharing interfaces is actually threatening our system of social values. By subverting opportunities for ethical reflection, new interfaces make it too easy to steal. The boundaries that once separated the bad guys from the good guys—intentionally or not—have been obscured. The internet is the new pusher, and it is rapidly expanding its clientele.

Ten years ago I was drawn into piracy by my affinity for music; today, many other kinds of assets—software, movies, pornography, and fraudulent memberships, for instance—are being unlawfully distributed. In 1998, the year I discovered downloading, Shawn Fanning had yet to launch Napster (that would happen in June of the following year). MPEG-3 (MP3)—a digital audio encoding format developed by the Moving Picture Experts Group—had been

It's interesting to consider the extent to which peoples' engagement in file sharing might correspond to their desire to explore the limits of their technologies. Humans like to test what they might accomplish with the things they own. This accounts for the urge to drive fast in a car, or rig up an elaborate stereo system; in the case of a computer, this might account for the temptation to test the acquisition of music, movies, and software for free. Especially since this kind of exploration can be done in the privacy of one's own dorm room, as it were.

Sharing copyrighted material over anonymous networks is illegal in most circumstances. But this doesn't necessarily mean it is immoral. It seems like the anti-file sharing lobby is missing an opportunity to appeal to reason and basic good sense when they come down so hard on the legality of the issue. Many people who participate in file sharing don't see it as a moral issue, and it's difficult to change what is generally regarded as permissible behavior based on a legal argument alone.

around for years, but it was relatively unknown outside of small circles of technology enthusiasts and, of course, college students. My buddies in the dorm were a bunch of engineering and computer science majors, so I was getting the inside scoop.

To bag a bunch of MP3s at once, I would have to solicit individuals, one by one. This involved visiting a website—such as *astalavista.com* or *cracks.am*—that housed databases of IP addresses representing the computers of other users on the network. The sites typically had a dark, sci-fi aesthetic. I knew I was not in Kansas anymore when I saw provocative images of naked alien women, a la H.R. Giger, adorning several webpages. Even the name of the host site, “astalavista,” was a nod to *The Terminator* (as well as a slight to the popular search engine of the day, *altavista.com*). Navigating these early file-sharing sites was a task designed to disorient the user, perhaps to throw snoops off the trail. Hoards of hyperlinks occupied every available inch of screen real estate. The longer one spent lost in the labyrinth, the greater one's odds of bombardment by pop-up window. The pop-ups generally advertised less-than-savory sites and services. At the time, web browsers did not have a defense for this tactic, and it was not uncommon for a strained browser to freeze up or just fold altogether. The porno-assault was a major red flag, but the determined—like myself—carried on.

Once I had found an IP address that claimed to host something I wanted, I contacted them through a network protocol called FTP (File Transfer Protocol) by way of a client program. I used CuteFTP. Like most FTP applications it represented data in plain text—the same unformatted characters seen in the source code of programs. It was like working with the command line in MS-DOS—pretty intimidating for a guy who had just set up his first email account. I thought this was what professional hackers dealt with everyday. I felt subversive, empowered, to say the least.

I was learning FTP's conventions. The pirates I dealt with had their own iconography, and it was unabashedly sinister. After I connected to a given site, a barrage of plain text would appear, forming imagery from patterns of letterforms. “X” was certainly in vogue. Skulls were also very popular, along with demons, weapons, and the like. These text-based images were always followed by instructions or some kind of explanation of what I needed to do to retrieve the files I sought. Sometimes I was prompted to barter, but I had no digital assets. Mostly, it seemed to be time and effort the pirates sought. Essentially, the FTP connections presented the first step in a virtual scavenger hunt that led me through the slums of the web, signing up for trial memberships and bargain newsletters along the way, in hopes of obtaining a password that would allow me access to download. The FTP pirates were being paid by advertisers for all the traffic they generated.

Of course, the information and passwords I received on these adventures were often worthless. This was frustrating, but I was well aware that the entire system was built on a foundation of deceit, fueled by scams and smut. I wanted free music, and I relished the challenge. The scams were simply quid pro quo. It took some time, but in the end I got the MP3s.

Actually, downloading music in 1998 prompted a complete crisis of conscience. From the sleazy ads to the ASCII skulls to the double-dealing cyber pirates, there was no mistaking participation in wrongful activity. Fraud and deception were the standard *modus operandi* for both user and supplier, reflected in the clunky, antagonistic mediation between the two sides. In addition, the entire interaction was peppered with seedy motifs hinting toward the true nature of the dealings.

The technological constraints may have been incidental, but the system worked the way it did by design. File sharers were an elite group. The right to participate had to be earned; and it was not easy. The ones who were clever enough to work the system entered the secret society. The rest were intentionally weeded out. The pirates wanted to unite and share assets

Were these conventions actually designed to deter the uninitiated, or did they just reflect the language of the tech subculture? It's easy to imagine that early file sharers gravitated towards obscurity and anonymity more

from the need to hide their trails from the authorities than from any desire to keep other users from joining their communities. It may have been happenstance that some more causal users were deterred from sharing by the conventions and time required.

This new inclusivity is probably the result of monetization, as much as anything. Host sites issue legal disclaimers while profiting handsomely from the advertisers lured by their traffic. This part of the arrangement seems most troublesome — the sites that exist as facilitators for shady transactions are the only ones profiting.

It's going to be nearly impossible to put this genie back in the bottle. People will continue to use their computers to trade files. If we acknowledge this, how might we alter existing systems and structures to provide alternative profit streams? Perhaps there are opportunities for monetizing other parts of the supply of digital commodities. Interfaces are expressive — perhaps their designs may provide positive motivations for users to engage with more legitimate avenues for acquiring digital files.

with individuals like themselves. After all, people who could nimbly gather fresh assets added more value to the community. In this way, its creators essentially contained the system. But it was only a matter of time before a deluge of technology would break the levy.

Today, the demand for digital music has exploded and vast networks of “peers” such as BitTorrent, Gnutella, and FastTrack have formed around the notion of freely sharing files. These communities can be tapped by way of freeware programs, or “clients,” that are widely available online. Unlike the tech-savvy elitists of 1998, the programmers that conceived these networks designed them to be inclusive rather than exclusive. Outmoded FTP gatekeepers have been abandoned in favor of direct, peer-to-peer exchanges. New clients are simple and intuitive. Users no longer have to toggle back and forth between complex operations that may, after a substantial time investment, go awry. No web browser is required, keeping villains (and pop-ups) at bay and out of sight. Blogs, in broad daylight, have been established by the thousands to distribute music for “promotional purposes only”—meaning that a user can fairly download as long as she agrees to delete the content from her hard-drive within 24 hours. Often reputable companies, such as WordPress or Google’s Blogger, host these blogs, inadvertently giving them credibility. Working in conjunction with these blogs, a new breed of file-hosting sites handle the dirty work by housing and delivering enormous media files. The most popular of these, RapidShare, is the 17th most visited site globally. Moreover, the RSS (Really Simple Syndication) web feed format has become a blog standard, making it possible to have pirated material automatically delivered right to your email inbox—a new album is just a couple of clicks away.

The language and imagery on contemporary peer networks and blogs delivers a more discreet rhetoric that is far more egalitarian than dissident. Nothing about “sharing” with one’s “peers” sounds underhanded. Names like Astalavista, Morpheus, Poisoned, Xfactor, and gifToxic have been replaced by quirky, innocent monikers like Kazaa, Limewire, BearShare and eDonkey. Dark, grungy, *Dungeons and Dragons*-esque themes have been traded in for more traditional, professional facades. These visual and linguistic devices work together to delude users and conceal an underbelly of ethically questionable activity.

Technical and logistical barriers to pirating music, software, and other files have been torn down. Today, getting music for free is as clean and easy as checking your email. In fundamental ways, downloading has become naturalized into many people’s online behaviors. What might be a jarring reality is glossed over, subdued, hidden. Sites that claim to condemn illegal file-sharing make little effort to mediate or inspire reflection. By removing the hurdles to downloading—the exasperating hunt and sordid rhetoric of the pirate web circa 1998—new file-sharing sites offer far fewer reflective checkpoints, far fewer opportunities to ask whether our use affirms our values. Whether by design or as a matter of technological evolution, file-sharing sites have become transparent and ubiquitous. The public is increasingly ambivalent. If we allow deceptive interfaces to continue the ruse, future generations will be defined by how they mediate our transgressions.

TOWARDS A NEW HUMANISM IN DESIGN

Written by Lincoln Hancock, Commentary by Samyul Kim

Interfaces permeate our modern world. These devices enable us to communicate with the systems, machines, and other entities we encounter with frequency. They enable us to transmit messages, relay instructions, receive information, and experience feedback. They reflect our positions as users and participants in larger schemas, often while hiding the true

complexity of scenarios. Interfaces populate the landscape with possibilities and constraints, arrays of affordances contingent upon their design as functional artifacts.

The real explosion that marked the induction of the interface into the almost natural order of things was the emergence of the computer. For as the complexity of machines leapt forward, so did the need for devices that would serve as translators — both between machines and between humankind and these new, spiraling cyclones of information. Increasingly, the computer has passed data from the material world into the digital realm, where it cannot even be accessed without the assistance of an interface, which both represents and provides affordances for interpretation and manipulation.

For decades the design and development of interfaces followed the logic of the machine. Interfaces were not seen as relational devices, but as components of the mechanical systems they inhabited. (The nature of early computer interfaces certainly also indicated the highly specialized cast of the individuals who might have encountered these machines.) As far as aesthetic principles entered into early interface design decisions, they were modernist — emphasizing clarity, cleanliness, and universal access.

In 1984, the Macintosh personal computer introduced the GUI —the Graphical User Interface — to the public at large. The GUI made explicit the relationship of the designed interface to the human user. Design decisions made by the team at Apple “remained true to the modernist values...straight lines and rectangular windows...files arranged in a grid,” as media theorist Lev Manovich recounts in *The Language of New Media* (63). But these design decisions were geared towards an end goal of an interface that existed as a device independent in spirit of the machine to which it related. The computer behind the interface, to be sure, was still a mechanism operating under the edicts of digital code. The Macintosh GUI was significant in that it did not derive its operational rhetoric from the rules of the machine. It was designed to function explicitly as a translator, enabling communication between human and machine. This represents a subtle but profound paradigm shift, I believe. For the first time, consideration of specific human needs and desires were given prominence in an interface design. The moment of encounter was thrust into the fore as a new priority. The logic of the machine was no longer the arbiter of the interface.

The GUI opened the door to a reconceived relationship between human and machine. But almost three decades later we’re still trying to figure out how to go through it. The aesthetic of the Mac GUI quickly set the standard for how an interface might look, but few scenarios have since pushed hard on the envelope to re-envision how an interface might afford a more expansive human experience — one of engagement, expression, and empowerment.

The emergence of New Media as a category and concept warranting critical investigation indicates a positive shift in the landscape. Researchers and theorists now regard the computer and digital media as indicative and predictive of modern culture, picking up the trail Marshall McLuhan blazed half a century ago. Indeed, the computer has become a medium much like television, radio, or print (a radical transformation of function made possible by precisely the development of the GUI). Incorporation of graphics and sound — and more recently, the network we call the Internet — has allowed the computer to rise to claim the mantle of “the 21st century’s culture machine,” as Peter Lunenfeld says (*The Secret War Between Downloading and Uploading*, unpublished MS). But as a culture machine, the computer is fundamentally unlike TV was in the last half-century. For, TV broadcasts streams of information to be consumed whole by viewers. The computer, encountered as an *interface*, always contains the possibility of communication between user and machine — and in fact now enables communication between users and other users and machines on the Internet.

The ubiquity of the computer raises a level of alarm, for as a culture machine it holds as

much power to do harm as to do good. The messages it transmits through explicit and implicit channels can spread uncontrollably through modern society. Part of the work of New Media criticism is to mine digital media for clues as to how these messages are transmitted. Part of it is to look into the future and theorize about how we might design interfaces that work better, in more satisfying and sustainable ways. Another part, still, is to help elucidate and expound upon the principles upon which interfaces should build if they are to serve the better nature of the humans who use them.

Recent theoretical work in New Media has begun to take on the third part of this task in compelling ways. Thematically, writing in diverse sectors of the New Media critical environment has begun to cohere around an impulse that might rightly be described as humanistic. In the same way as art, literature, music, and philosophy are humanisms, some writers seem to be embracing the notion that *design* too is concerned with getting to the heart of *what it means to be human*. Insofar as design is expressive of a particular viewpoint, it does seem it may fit into the class of the humanistic arts. Interface design, especially, seems necessarily to incorporate an expressive vision, as it makes claims about how people can and should behave in an encounter with a machine. (Perhaps one of the challenges in seeing design as an art is that it typically represents a process reliant upon the work of many people. It's tougher to call this kind of work *art* — it can't be valued in the same way as a singular expression. But it certainly can speak with a principled voice and manifest a creation that holds moral weight.)

Normative visions about human relationships with machines inform many contemporary texts concerned with New Media. Sometimes implicit, sometimes explicit, the claims that emerge in these writings indicate a common interest in keeping human experience and value at the center of contemporary design practice. As the technological landscape continues to evolve, how can we ensure our core values are not steamrolled by ambivalent and malignant market forces? Beyond, how can we facilitate the growth of structures that support us as humans and help us find and create meaningful, sustainable existences? Seen in this light, the humanistic impulse in New Media criticism presents a stark alternative to the market and machine-centered interface design of decades past.

Many of these contemporary texts evince a humanistic impulse by foregrounding a concern with designing interfaces that help us navigate and make sense of the information glut that often is the modern media experience. In *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency*, Diane Gromala and Jay David Bolter argue that reflective, mediated interfaces hold the most potential for sensible, coherent encounters with machines. They reveal through a number of case studies of contemporary digital art that transparent interfaces, long held to be the optimum affordances for accessing the truth, often leave people feeling lost and alienated. "If we only look *through* the interface, we cannot appreciate the ways in which it shapes our experience," they observe (27). Incorporating reflective aspects into an interface design helps a user feel grounded, contextualized, and more in control.

John Thackara relays a series of anecdotes to demonstrate how design can help us cope with the stresses of modernity in his book, *In The Bubble: Designing in a Complex World*. Evoking principles like locality, situation, and conviviality, he encourages designers to engage critically with their assumptions about the way the world works. Evoking Henri Bergson, Thackara seeks to emphasize the importance of real, lived, narrative time —experience, roughly — over *speed*, which he says can undermine "the foundations of professional knowledge" in situations where reflection is integral to understanding (38). In terms of interface design, we might take away from Thackara a critical skepticism for the tendency to enable users to run roughshod through any kind of information without pausing to consider

what it means.

Peter Lunenfeld's upcoming book, *The Secret War Between Downloading and Uploading: Among Other Tales of the Computer as Our Culture Machine*, also takes on our unhealthy habits of interface-enabled media consumption. He argues that in treating the computer —the culture machine — essentially as an entertainment server, we're becoming sick, losing sight of our essential human capacity as creators of meaning. Failing to regard one's world critically and meaningfully — to "move beyond downloading," Lunenfeld says — is to relinquish one's claim to humanity. He proposes a new design emphasis on creating affordances for what he calls *stickiness*: "A sticky object or system has affordances that allow other meaningful objects or systems to latch onto it, to expand or bore within it" (28). Interfaces can encourage meaningful content creation or engender attitudes of mindless consumption. If we believe that humans are creators, Lunenfeld argues, then we should respond with designs that affirm our highest potential.

Literary theorist Katherine Hayles has also explored how designed artifacts provide "potent resources for creating meaning" (107). In *Writing Machines*, she examines several contemporary text-based interfaces (or *technotexts*), and argues for a conception of *materiality* that acknowledges how the physicality of and intentions behind an expressive interface contribute to its meaning-making potential. Technotexts, Hayles claims, actually suggest that "the appropriate model for subjectivity is a communication circuit rather than discrete individualism...

narration remediation rather than representation, and...reading and writing inscription technology fused with consciousness rather than a mind conveying its thoughts directly to the reader" (130). She thus models a picture of the human being creating meaning in dialogue with an interface, rather than simply receiving meaning through passive consumption.

But some of the most explicit formulations of humanism as a guiding force in design have come recently from the realm of videogame research and theory. Game designer and researcher Jane McGonigal explicitly advocates for multiplayer games as "the ultimate happiness engines" (see her keynote lecture at the 2009 Game Developer's Conference). The essence of the well-designed multiplayer game, she argues, directly meets the four requisites most psychologists associate with the profile of a happy person: engagement in satisfying work, the experience of being good at something, time spent with people we like, and the chance to be part of something bigger. McGonigal's appeal to a substantive version of human happiness represents a basic embrace of humanism as a guiding principle for design.

Georgia Tech Professor Ian Bogost, in his book, *Persuasive Games*, looks at the ways in which videogames "mount arguments and influence players" (viii). He claims that, as designed objects and systems, videogames express their points of view much in the same way is art, poetry, literature — through discourse that aims "to get to the bottom of human experience in specific situations" (340). Games, through their design, make claims about processes fundamental to human existence through their selective interrogation of them. Encountering a videogame is like encountering a work of art — when it works well, it reveals to a viewer, participant, or player a world to be learned, sorted through, reckoned with, evaluated, and embraced or denied. It reminds and affirms or calls into question our values. In this sense, Bogost, like the other theorists mentioned above, represents a view of humans as volitional, empowered beings creating meaning in dialogue with the designed systems they encounter in the specific context of the world they inhabit.

From many different directions, critics and theorists engaging New Media seem to be cohering around an impulse that represents a new humanism in design. Fundamentally hopeful and optimistic, these critics should be able to help us find constructive ways to confront the challenges faced by our culture at large: resonance, meaning, connection, and

sustainability.

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GRASPING INTERFACE

Written by Samyul Kim, Commentary by Daniel McCafferty

Over the course of our Interface seminar, we were challenged to investigate how we interpret perspectives from contemporary practitioners and theorists and examine our findings regarding Interface. Having guest lecturers in seminar provided theoretical formations such as networking behaviors in new media culture, attributes of materiality in literature, and procedural computation in games. Discussions during the lecture series arose my awareness about concepts such as passive reception, formative body, and fundamental systems from conditions in the new media environment. Engaging new disciplines accompanied both encouragement in learning different viewpoints and challenging my limitations. My personal quest, in particular, was what will my position be regarding Interface speculating and what can I get from the investigation.

Having the guidance of a class website, Interface in the contemporary circumstance means intricate conditions and experiences of interactions rather than specified devices and contents of interactions. What are these conditions and how do we experience when we interact? When I look back to answer this question, I will see that I do not know as much as an inclusive index or rules from which I can derive a comprehensive answer. I have been disoriented in the middle of uncertain and chaotic information circumstances. I need to understand the notions of ideas, and be able to locate the concepts of ideas within myself (as a human). In order to comprehend the nature of this new information environment, I was curious to find a key attribute that I could trace back in history? How can I envision a key concept in contemporary circumstances? The concept is the control—which is out of control—in the new information environment.

Radical Alternations

I. Mass Production

The industrial revolution promotes mass production. Machinery standardizes the process of production and the result of production in the assembly line. Inspired by butchered animals moved along a conveyor, the Ford Model T was the kernel of the modern automated assembly line concept. The heart of this concept is the efficiency/accuracy of conveyor belts to move partially complete products to workers, who perform simple repetitive tasks with less human-power. The mass production of the Model T lowered its unit price, making it affordable for the average consumer. Furthermore, Ford substantially increased its workers' wages, giving them the means to become customers. These factors led to massive consumption. In fact, the Model T

surpassed all expectations and revolutionized a system—synchronization, precision, and specialization—within a company. These innovative ideas led to “Fordism,” a concept that helped increase economic prosperity in the United States in the 1940s to 1960s.

“Fordism” is capital and energy intensive, it uses a high proportion of machinery and energy in relation to workers. It is also usually automated to the highest extent possible. With fewer labor costs and a faster rate of production, capital and energy are increased while the total expenditure per unit of product is decreased. The goal of mass production is attaining profits, not the training of the workers. Instead of a skilled worker who measures every dimension of each part, a ready-finished part is set-up to fit all the other finished parts. The system saves time to wait for other parts to be ready, material waste, and human labor.

II. Dematerialization

The contemporary media culture inhabits the information environment. “News” is new information on current events, which is presented by various media to a mass audience. Unlike other news media—radio, newspaper, and television—“Internet News Broadcasting” amplifies digitized news collecting, rapidly updating and openly sourcing. The web-magazine is much slower paced and considered by editors in terms of social influence whether good or bad. With political and commercial empowerment over objectivity (matters of truth), Internet news accelerates the speed of up-to-date news and the quantity of news data. News agencies continuously prompt news in the other sides, then news portals surpassingly weave a news-web beyond human capacity. As Internet news portal sites update news each second, the most current news forces us to be informed. While web portals utilize services of news presentation, portals provide a consistent look and feel with access control and procedures for multiple applications. News portals link both dematerialized news and our material life. While taking benefits from new information technology, we passively receive both truth and misinformation daily. While encountering opportunities in the new media environment, we confuse ourselves sensing a difference between information and knowledge (and knowledge and wisdom).

Web portals offer other services such as e-mail, news, stock prices, information, and entertainment. Portals supply a way for enterprises to provide a consistent look and feel with access control and procedures for multiple applications, which otherwise would have been different entities altogether.

III. Immaterial Labor

Maurizio Lazzarato, a sociologist and social theorist, argues “the activities of immaterial labor force us to question the classic definitions of work and workforce, because they combine the results of various different types of work skill: intellectual skills, as regards the cultural-informational content; manual skills for the ability to combine creativity, imagination, and technical and manual labor; and entrepreneurial skills in the management of social relations and the structuring of that social cooperation of which they are a part.” The forms of “immaterial labor” are immediately collective and exist only in the form of networks and flows.

Lazzarato introduces “immaterial labor” as a form of interface between production and consumption. The process of communication materializes the activation of both productive cooperation and the social relationship with the consumer. The role of immaterial labor is to promote continual form creation and conditions of communication. The particularity of the commodity produced through “immaterial labor” enlarges, transforms, and creates the cultural environment of consumer. This activity makes immediately apparent what material production had “hidden.”

Sensible Human Actions

I. User's Expression

Benefited by advances in digital design tools and network technology, the process of creation is more automated and efficient than ever. This has resulted in a reduction of hours worked and an increase in time spent on unrestricted activities. In response to these trends, improvisation became a user's activity. Good improvisation follows rules of variations to pick out a element to explore, otherwise they lose focus. The harmonic reversals are disciplined by what came before. Above all, the user has to select elements for his or her own interest that can respond to others. A successful improvisation in sustained blogging and commenting will avoid sounding like the equivalent of a visual maze.

II. Post-Fordism (from some kind or scale to some degree or scope)

Associating socio-economic phenomena, "Post-Fordism" characterizes an attribute of new information technologies. Post-Fordism has shifted away from manufacturing and industry and towards service and the knowledge economy. Post-Fordism has arisen in part due to the increasing interconnectedness of the world—globalization. Instead of investing huge amounts of money on the mass production of a single product, agencies needed to build intelligent systems of labor and machines that were flexible in their approach to production, to quickly respond to the whims of the market.

Post-Fordism is very much driven by information technology. The key to production flexibility lies in the use of informational technologies in machines and operations. These permit a more nuanced control over the production process. With increasing sophistication of automated processes and the new flexibility of electronically controlled technology, the major results of the new electronic and computer-aided production technology is that it permits rapid switching from one part of a process to another and allows the potential tailoring of production to the requirements of individual customers.

Traditional automation is geared to high-volume standardized of production; the newer 'flexible manufacturing systems' are quite different, allowing the production of small volumes without a cost penalty. Focus is now on the principle task of manufacturing. Companies are smaller and subcontract many tasks. Likewise, the production structure began to change on the sector level. Instead of a single firm manning the assembly line from raw materials to finished product, the production process became fragmented as individual firms specialize on their areas of expertise. Flexible specialization and organizations begin to emphasize communication more than command. Following the shift in production and acknowledging the need for more knowledge-based workers, education became less standardized and more specialized.

III. Drilling

("Drilling" human behavior is mentioned by designer Zak Kyes and novelist Ingo Niermann in The Choice <http://www.thechoices.net/>) Zak Kyes claims human beings have increasingly taken fate into their own hands. With manual/hand labor, humans could do over and over in a new way or react to a specific pattern with an ever constant, unconsciously performed behavior. According to Kyes, constant human behavior and conscious repetition of the behavior are known as "drilling". With "drilling," we can systematically expand and update repertoires of instincts. Monkeys can learn, but quick repetition is taught to them either by way of coincidence or a trainer. However, humans learn by an aspect of compilation of various trials in their repetition. To promote a sustained effect, we have to drill. What it looks like is a comparison of both craftsman's and bogusman's process.

Richard Sennett, a sociologist, claims “guiding intuition” in process of craft is that “making is thinking.” Sennett argues “craft” stays away from rigorous logic and moves toward a playful engagement with common speech, paradox and parable. Sennett introduces how the work of the hand can inform the work of the mind. The material world speaks back to us constantly, by its resistance, by its ambiguity, by the way it changes as circumstances change, and the enlightened develop an “intelligent hand.” His insistence of attitude in craft reimages the enlightenment in terms not of ideas but of how craftsmen have learned to work.

Intelligent Hand

The thread throughout is progress in the development of our skills. In design investigation, designers can and do improve. Skill builds by moving irregularly, and sometimes by taking detours in the new information environment. However in a reality of education, economy, and politics, where we live by is correct and answer-oriented. Society marginalizes the non-answer-oriented group. How can new technology embraces a notion of creative people? Development of an intelligent hand shows how a process of craft works.

The hand needs to be sensitized at the fingertip, enabling it to reason about what it touches. Once this is learned, the hand can work with the eye to look ahead physically, to anticipate and so to sustain concentration. Each stage, though challenging, grounds moving on the next; but each is also an independent challenge. This seems like a very cyclical process of skill development, of trying, learning, growing and building on that process. We need to practice a language of craft to communicate with new technologies. With an intelligent hand (and intuitive sense) in the new information circumstance, how can we capture the moments of a new scene and shape the conditions of new experience?

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THEORIES AND CONVENTIONS

Written by Daniel McCafferty, Commentary and editing by Caroline Prietz

Conventions

In my first year of serious graphic design education, the director of my program, who was our instructor and was additionally a strong mentor figure, told me that the most influential book he had ever read about design actually had nothing to do with design. He was an instrumental figure in the realm of design pedagogy for introducing and formalizing the application of structuralist theory and visual rhetoric to design education. Although I respected him a great deal, I was rather outraged at his suggestion: I was in the extreme thick of learning and loving everything about design and typography. I was deeply engaged, wanting to absorb everything design and could not begin to imagine stepping outside its bounds for such influence. Didn't design itself have enough to offer?

I am no longer outraged by this notion. I actually understand and share this position. In fact, I can now no longer understand how a designer could possibly suggest that Steven

Heller might be the best source for a particular question related to history.

The ideas expressed by the guest lecturers this semester do more for design because they expose the overlaps and the soft edges between disciplines. They are progressive in this sense, because they offer insights into worlds that design can learn from and build onto, not in a reckless sense towards constant expansion outward but in holistic and considered ways. Rather than being caught in repetitive cycles of production, theory and scholarship from outside of design propels it by giving designers methods to engage with and limits to brush up against, as opposed to spiraling around in a sort of navel-gazing hermetic universe. One of the direct benefits of this exposure is that it allows us to continue to challenge and question our own beliefs about the conventions of design.* They ask for a level of engagement as well as a commitment to no longer being complacent about the designed world around us. **What are conventions, and why should they be challenged.*

Conventions of Materiality

Noted postmodern literary critic, Kate Hayles, most obviously deals with the issue of materiality in her writings. However this is also a subject with Ian Bogost — videogame researcher, critic, and designer — in his discussions of the concept of code as a material. Within this context materiality emerges as the next frontier that technology should and will assail. How can we engage in this promising area as designers?

In terms of conventions, Hayles notion that the book, or the virtual environment be thought of in terms of its own material existence, suggest that her premise is richer and deeper than the commonplace materials-based activities that typical designers engage in — like “specing” paper or thinking about ink and varnishes. These would be the conventional aspects of considering materiality. Hayles is in fact suggesting a total rethinking of the conventions that define mediums in our new era. When thinking about the materiality in the terms that Hayles has in mind, we are thinking more broadly in terms of the affordances of a particular medium. Further, when thinking then about an affordance in dialectical terms, it could take on meanings not just relegated to physical properties, and, for example, become a political. In this way, once the idea of the politics of a piece takes on material aspect as Hayles claims could be possible, we begin to see the loop which harkens back to Hayles professed sympathies with Louis Althusser and his claim that ideologies have material existence.

Bogost, on the other hand, talks about the materiality of code, in the computer world. It is of course hard to imagine a less material object than computer code. But the very notion of code as material, suggests that the materiality is inherently an embodiment of any possible affordance. For example, my DNA might not feel like a material component of my humanness. But in fact, the DNA is the core building block, which in one aspect affords the other blocks to build off of. It would create an entirely different beast if combined in different ways. Computer code, is also like a building block, changing one aspect of it, changes the entirety, and changes what other affordances can come next.

Beyond this aspect, Bogost is challenging our conventions here (and elsewhere) by the very suggestion that code could have such a humanistic association or quality. In this light, code is seen, for the first time in my life at least, as an approachable ally, as something I might actually want to try on. In the past, it was common for designers to be well versed in the technologies that afforded them the ability to do what they do. As an example, for most designers it was/is a point of pride to know “as much” as your printer, to know the issues related to paper, and how certain inks are affected by certain paper, how certain presses were more forgiving than others, how particular processes like folding or die-cutting or embossing paper would be affected by other material elements. This knowledge is all but gone now with

Design, in its most influential regard, is fundamentally about the world around us. Peter Lunenfeld, Kate Hayles and Ian Bogost have challenged us to look outside the realm of design and allowed us to explore a perspective that embraces this world while searching for the way in which design can be the most beneficial. How could we, as designers, even begin to engage, communicate and/or influence without investigating the world in which we wish to impact and without ultimately making decisions about where we stand within that world?

Design plays a fundamental role in exploring the materiality of the artifact and Hayles poses a unique challenge to literary writers and designers to develop relationships in which this

materiality can be most richly explored.

Where do these affordances take on properties outside of the physical form? Affordances can be found in the software, coding and even the budget of the project. How is design and who we design for influenced by money?

Oftentimes as designers we tend to think of design as the shell on the surface of the code, the layout on the surface of the meaning, a membrane covering the living being. Yet it is interesting to think design as access to that meaning or as having a deeper connection to the meaning. It is even more compelling to think of coding as design. In essence it is the most intricate and comprehensive form of design. It is here where fundamental decisions on design are made and it is the core of where a message is initially crafted and formed. Is it safe to say that design is found in the bones as well as the skin making up one being?

How can a coder and graphic designer develop relationships that foster consideration of materiality in the same way a literary writer and designer are challenged by Hayles to explore? Or if coding can now be considered design itself how can

respect to the virtual world. For many designers it is now almost a point of pride to plead total ignorance with regard to programming languages. Today there are fewer and fewer jobs that come through a design office that do not include digital elements as part of their deliverable components, yet a typical designer is as alienated from a programming language like Java, which affect the outcome of a project much like paper and ink does, as he is from the mechanics of the engine under the hood of his BMW.

Conventions of Problem Types

One convention that has been challenged over the course of this semester's lectures is the notion of what constitutes a problem in graphic design. Based on what we have been exposed to, it might be fair to say that the idea of the problems/solution model for design is finally dead. If it is fair to say that the art/design debate is dead, then perhaps problem/solution is the latest casualty of the modern world.

Replacing it could be dialectics. In a world where there are fewer universal truths, where design cannot profess to be a solver of problems, dialectics can act as a useful model. There are many definitions and philosophies of dialectics, but essentially it recognizes inherent splits or fractured realities, and seeks to resolve them, by acknowledging the value of each dimension. This approach allows for a much richer questioning. It allows and engages criticality by its very nature as a mode of inquiry. Bogost qualifies it by stating that dialectics "Invit[es] subsequent forms of discourse," a statement that is reminiscent of Lunenfeld's concept of sticky media. In this case, it is sticky criticism, which if we could imagine it, would be the ultimate in a democratic and holistic type of debate to happen about social elements.

Dialectics is necessary in contemporary design because of the notion of transdisciplinarity* (*the term has received a meaningful definition by Basarab Nicolescu in *Manifesto of Transdisciplinarity*). This explanation of the interconnectedness of the worlds knowledge and disciplines is gaining acceptance and is adding to an already fractured world view. This view illustrates the ever softening edges and the blurring lines among fields and knowledge domains. Bogost introduces the concept of dialectic most directly but each guest was engaged with his or her own dialectical pursuits. For example, Lunenfeld with the dialectics of mindful and mindless downloading; Hayles with the dialectics of technology and materiality.

Conclusion

Some people read fiction voraciously and exclusively. They would not dream of picking up a book by Roland Barthes, or of choosing a documentary over a film. They claim, and I oftentimes agree, that escaping to another world through a story is not just escapism. It is a way to understand, experience and connect with their own physical world. They understand the world around them through narrative acts. I am also realizing that another equally valid way of understanding the world, is through theory. Each lecturer this semester was in a very fundamental way, building a theory out of a lineage of past theories. These are different ways of making meaning. Understanding these texts as continuous lines of inquiry into how the world works and how it might work better in a large way — or in a tiny corner of the universe kind of way — is also a valid way of creating understanding and meaning.

It is possible to believe that a progressive and relevant design practice cannot exist without theory, despite how theory might manifest itself in an artifact. It could be in an obvious or discreet way, poetic or didactic. But without theory and an understanding of the lineage of ideas, design practice flat lines, because all it

these two beings become one? Designers now face a challenge of embodying the qualities of a coder. One such designer that has embraced this concept is Joshua Davis. Davis merges programming and design by building his own Flash-based programs resulting works of “dynamic abstraction.”

has to fall back on then is convention, or that which has been tried and is assumed to be true.

My writing this semester has occasionally focused on political dimensions because I feel that design has yet to determine theory that properly addresses its own — sometimes willfully, sometimes ignorantly — blinded ideological position and function within society.

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THE ACT OF PERSUASION: LEADING VS. DIRECTING RELEVANT AND MEANINGFUL INTERACTIONS

Written by Caroline Prietz, Commentary by Shelly Upton

I leaned in to kiss him goodbye as I hurried out before the sun and with eyes still closed his brows raised. I knew he wished me well.

As I entered the room I saw her, eyes low and focused, brow furrowed, lips tight. Something was wrong, or rather not going right. I assessed my options. Offer an invitation to assist in the apparent crisis or ignore and stand clear. Either choice was acknowledgement on my part.

The critic raised the fork to her mouth. Then through a cycle of squinting and widening of the eyes with a slow turn and tilt of the head, we knew. Delicious.

What lies between our state emotional being and the world is merely a simple face. With over 90 muscles it is an intricate system at work beneath the surface. As our primary means of conveying social information, the facial expressions we employ communicate emotions to an observer. They invite, warn, distinguish, approve, comfort and beg. Whether we choose to manipulate them carefully or cannot hold them back, our expressions steer our viewer to a specific place for reaction or response. They persuade.

Her head turned and tilted downward ever so slightly with an inquisitive lift of one brow and a lowering of the other. Beckoning me to continue...

I approached interface with a wide lens, willing to entertain thoughts on the periphery. I was permissive for a small space in my defining laws to remain vague, blurry and undefined. It was the promise, the possibility that held the most interest for me. And through open-ended explorations, such as the human face or perception, I have come to understand a great deal more about interface and the role of design in its realm.

As the space between, the point of tension and the condition of contact, interface plays many roles but ultimately it serves as a doorway, a tool for granting access to something beyond. Perhaps the true promise in interface is what happens in that space between—the interaction, the experience, the tension between the two. It is not just a membrane but both reactive and responsive. The audience learns to interact in a certain way to achieve a desired response or set of information. Fundamentally, interface and interaction go hand in hand. You can't have one without the other.

This was a wise decision considering the breadth of information on the topic. There are so many existing definitions of interface in media texts that it would be difficult to make a thorough contribution to the field of design without an open mind.

With a lift of the chin, a hand to the face and lids lowered to a sliver of a squint he affirmed my notion that there was interest in seeing where this was going, or maybe it was just skepticism...

In the human face the interaction is between the observer outside the body and the emotional being inside the body. Facial expressions play the part of design. As the observer makes shifts in conversation the facial expression may change as an indicator of a new emotional state in response and vice versa. In technological terms when an individual comes to an online environment they point and click about the space to alter what they see and gain new access to meaning. They open the door to deeper information by the interaction with the interface. Progressing cover to cover in a conventional book, you are engaging in an interaction with the interface of the page. Words guide you through the information. Your eyes fall into the rhythm of rocking back and forth across the page from top left to bottom right, flip and repeat. Through the interface a story unfolds. It is the role of the interface to guide the viewer in a certain way, to persuade. Yet an interface cannot exist independent of anything else. It is not simply an object. It requires design and it is the designer's commission to make possible this magic of persuasion.

The most successful interface design finds a way of visually, spatially and experientially describing the thing as what it represents. It takes on the peculiarity of what is being expressed, what lies beneath. Either intuitive or cumbersome, interfaces are found in abundance in our surroundings. Interface should serve as a natural interaction, or if appropriate, a natural metaphor, between the two entities. But the idea of the natural—relevant to context—is not constant, because what is efficient or easy in an interface depends on what the interface is for (Bolter and Gromala 2003). I navigate effortlessly to gain access to the information on my computer through an intuitive graphical user interface (GUI) that utilizes the metaphor of a desktop. This desktop interface is quite natural in this context because it virtually mirrors the physical actions I take when organizing tangible items on a desktop. But as the trajectory of culture is moving more and more in a digital direction how will those natural metaphors shift and change? Can a child of today even relate to storing content in a physical file folder when their entire lives have involved digital storage devices?

Widened eyes and a nodding head allowed me to believe that at least for the moment she was following me...

Computers and the Internet are full of great purposes and even greater intentions. We must learn to harness those intentions and extract its usefulness. With the affordances of the computer, society has the world at its fingertips but oftentimes finds itself either paralyzed from information overload or lost in the mess. The mess, under the guise of productiveness, is taking over our lives. How do we prioritize? How do we filter? I cannot help but wonder if our lives are truly enriched by the compounding of modes of production. Or, rather, are we finding it more and more difficult to get anything at all actually accomplished? When work and play are compounded we face a continuum of disappointment. On one end we feel like we do not have enough free time, and on the other we feel like we do not get enough accomplished. Ultimately we need spaces that iterate the distinction between work and play as well as curate this flood of information.

Technology, specifically the Internet, provides the individual with an overabundance of information of all kinds (Manovich 2001). It is quite often in this environment that we can find the most dynamic and also the most laborious experiences with interface. It is possible, through the process of interacting with a laborious interface, for an experience to reveal a

The now ubiquitous multi-touch interface creates a visually, spatially and experientially compelling interaction. Properties of a tactile experience like texture and weight, though, are not (and maybe cannot) be replicated.

Like the narrator in this piece, there are computer interfaces that can observe and interpret human eye movements. Perhaps investigation of a computer-based "face interface" using this technology will provoke questions and generate more ideas regarding a face (either human or machine) as an interface.

Although questionably defined, Peter Lunenfeld argues in *The Secret War between Uploading and Downloading* that meaningful consumption and creation of media is the responsibility of both designers and consumers.

Media critic Katherine Hayles' concept of hyper-attention resonates with this idea. With in mind, responses to this statement would likely vary greatly if asked to a 15 year old, a 30 year old, or a 60 year old.

specific, poignant message. *Trydrugs.net* is developed to prepare young people for the question of whether or not to try drugs. This rather simple interactive environment simulates what it may actually feel like to be under the influence of varying drugs. Visitors are invited to virtually experience the uncontrollable effects of drugs and ultimately decide for themselves how they may respond when asked if they would like to try them. Through the process of an inhibited procedure the visitor is invited and persuaded to consider the outcomes and weigh the options. Through a dynamic interface, *Trydrugs.net* is attempting to institute social changes amongst young adults facing with the question of whether or not to try drugs. It is leading rather than directing. Rather than directing the viewer to the right decision it is leading them into a place for reflection, creating a deeper connection to and understanding of that choice.

Designing is ultimately guiding the audience to a new understanding. It is persuading not pushing, molding as opposed to making. In John Thackara's *In the Bubble: Design in a Complex World* he views designing as steering more than designing as shaping. Thackara believes that as facilitators our job is to "help people act more intelligently, in a more design-minded way, in the systems we live in" (Thackara 214). But how do we achieve this goal? How do we make the shift from designing on the world to designing in the world (Thackara, 2006)? How are we to take the voice we are given in design and develop it as a tool that positively influences a broader audience—the individual, our society and ultimately this planet? Like it or not, designers have the ability—and oftentimes responsibility—to shape values and behaviors. Design holds the potential to shift behavior for good or for bad and the design of interface plays a crucial part. By creating environments where the individual may investigate and explore, it works as a catalyst for reshaping frameworks within the mind of the individual.

Thackara observes that, "Our dilemma is that small design actions can have big effects—often unexpectedly—and designers have only recently been told, with the rest of us, how incredibly sensitive we need to be to the possible consequences of any design steps we take" (Thackara 7). As designers we are held accountable to develop interfaces that curate, prioritize, steer, guide, mold and persuade while facilitating relevant, meaningful interactions. It is no longer enough to merely shape and create but rather provide the means, the nudge, for a viewer or even society to choose to move in a certain direction. Putting one foot in front of the other, pushing pulling, pointing clicking — intrigue sets in, curiosity takes hold.

His eyes dipped slowly, shot open again then dipped twice more before closing. I reached over and confiscated what was left his brownie since it seemed he would not be partaking...

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A MEDIA CONSUMER'S REQUEST

Written by Shelly Upton, Commentary by Lauren Waugh

Within the past decade, the topic of interface and its relation to new media and user experience has grown into a major topic of investigation by contemporary media critics and scholars. Net neutrality was a relatively new topic of debate during the 2008 presidential campaign, Apple is facing a possible lawsuit for its multi-touch technology, and an outwardly simple web site called Pirate Bay is on trial for copyright infringements just to name a few of the most recently cited events.

Even with all this attention, the concept of interface in and of itself is too often overlooked by both users and developers. While there are certainly users and developers who pay a great deal of attention to the interfaces with which they interact, large portions of each group are passively content with the functionality of current interfaces. Still, though, the majority of these interfaces' users passively interact with them everyday whether they are good or bad. Average new media consumers do not interrogate or challenge the point of contact between them and the machine as a designer or developer of the media does. They simply accept it. With that in mind, it is important that some method of accountability be instituted in regard to design and development decisions in the creation of interactive experiences. If accountability existed between developers, designers, and users, the possibility for the generation of higher quality interfaces would be elevated.

Interactive media developers create virtual or physical mechanisms that comprise the main structure of an interface. They are often asked to take on roles of a designer as well. Ideally, this would never occur and a knowledgeable designer would always guide development toward a finished product, but limitations in resources and managerial understanding create situations where non-designers designing an interface are unavoidable. A scenario this ubiquitous may not be easily fixed, but there are certainly measures that can be taken to mitigate any negative effects.

Ian Bogost introduces the concept of thoughtful rhetorical crafting for game developers to ponder in his book *Persuasive Games: The Expressive Power of Videogames*. He cites many of his own projects in order to demonstrate ways to bridge the gap between designers and developers through persuasive video games. He also introduces theories that call for a new way to approach interactive narratives when creating a work of new media. His focus is on procedural rhetoric and the persuasive qualities an interface has when procedural rhetoric is used effectively.

Although generally attentive to some aspects of user response, developers also have a responsibility to be aware of the effects an interface has on the user. They should make a conscious effort to work within the platform's affordances to create a meaningful and effective point of interaction between the user and the machine, which reaches beyond the outward design. As Bogost states, "Interactivity guarantees neither meaningful expression nor meaningful persuasion, but it sets the stage for both" (Bogost 45). This calls for interactive developers to educate themselves in understanding the effects that their decisions have on the user beyond statistical data and direct observations.

Usability studies provide this numerical empirical data that act as proof of the effectiveness of an interface between a user and the machine. These studies cover both the tangible interfaces like game controllers and computer input devices, and the intangible interfaces like games and web sites. The results, though, are recorded in numbers of clicks, observable user reactions, and goal completion. What they do not always accomplish is providing a designer or developer with a concrete analysis of the effects the interface has on the user, nor do they provide the user with a means of understanding the physical and emotional effects the interface has on them and how to articulate these feelings.

Ideally, anyone creating a point of contact between a human and a machine should have a desire to understand their role in forming user experiences and they should feel

I think that moving forward, as technology progresses to encompass more and more aspects of user experience, it's going to become crucial that new media development include collaboration between developers and designers.

accountable for any fleeting or lasting affects on the users. Yet, this is not always the case, and this disaccreditation has been propelled in part by the accessibilities of contemporary creation software and technologies. Design of new media is now a very accessible pursuit and not everyone is paying attention to the power they hold in this position. Anyone with basic understanding of a computer can publish a web site interface using blogging software or other content management systems. Programmers with basic knowledge of programming languages can now create games for web distribution using Flash and even downloadable games from the Xbox Live arcade.

These technologies are a monumental improvement to the state of media, dissolving much of the media monopolies that used to be untouchable. Everyone has a voice and everyone has a creative outlet. Although previously unrecognized talents are given a chance to pursue success, they are many times lost in a sea of uninspired and even bad work. Unfortunately, this poses a problem for users as well as developers. Peter Lunenfeld argues in his forthcoming book *The Secret War Between Downloading & Uploading* that uploading and downloading should be meaningful and balanced, and that we need new ways to deal with the influx of mindlessly consumed information. His reasoning is that human nature is to make and share, and we are suffering from a sickness of receiving too much. He places the blame as much with the users who download as the developers and designers who upload. This may be a little extreme, but it brings up a good point about media consumers and their awareness in an increasingly saturated media environment.

These days, many media consumers and users are passively consuming new media without an awareness of its emotional, physical, and even cultural effects. As the point of contact between the media and the user, interfaces are the most important aspect of this issue. Empirical study of new media interfaces is a relatively uncharted territory and designers and developers are still learning from their mistakes. Popular web interfaces such as *Facebook* and *Youtube* are still only aged into the single digits, and even the oldest video game consoles are comparatively young with regard to traditional media like print or film. Users taking an active role in media consumption and criticism would force an increased awareness in the creators whom may not have fully understood the implications of their work before. An awakening, if you will, of user participation and awareness would raise the standards of user experience with interfaces and create safe, enjoyable, and enticing new media interfaces. Although this may be a lot to ask of recreational media users and may enter a grey area by delving into the shaky definition and moral grounds of "mindful downloading," there are more subtle ways of generating user awareness (Lunenfeld).

For this, we look again to the development side of new media for a solution that will not impose poorly defined responsibilities on the user. At the 2006 TED conference Jeffrey Han presented touch screen hardware, which at that time was still in development, and spoke about the intended influence on the future of interface design. "I kind of cringe at the idea that we're gonna introduce a whole new generation of people to computing with kind of this standard mouse-and-windows pointer interface. This [touch screen] is something that I think is really the way we should be interacting with the machines from this point on" (Han 3:24). Han's recent scholarly work is devoted to creating interfaces that consider the user's emotional, physical, and cultural well-being. His talk focused briefly on the collaborative aspect of interfaces, foregrounding the inherent affordances that interface possesses for collaboration between developers and users.

While the data collection inherent in current day usability studies can hold importance in certain areas of study, these methods definitely don't account for the implications of the experiences of a user on their behavior. The trajectory of usability studies should be geared more toward behavioral aspects in order to inform more succinctly crafted user experiences.

The affordances that universalize contemporary creation technologies, while intended to democratize certain design processes, can actually be detrimental to developer and designer credibility. It's

Good design can entice user interaction, both human to human and human to machine, and can serve to facilitate user behavioral shifts. For example, the interface of an *iGoogle* web page is intended to be the first thing a user encounters upon opening their web browser. The page follows the user to any internet-capable device and provides only user-chosen content in

important that developers and designers work to create savvy users who can contribute rather than detract from the trajectory of user experience and interaction.

As users become better informed about the affordances of new technologies, they will hold developers and designers more accountable for design decisions that affect them directly. This could drive them to become more specific about their wants and needs, thereby demanding consideration of their overall experience.

The touch screen is only the beginning of the attempt to design new interactive behavioral languages. In fact, it's already starting to become ubiquitous as the future face of interaction—many technological projections are based around touch screens and behaviors associated with touch screen interaction.

This shift in community is fascinating to me. The closest my mother's generation got to the idea of a social relationship with someone you had never met was writing to a pen pal or a family member overseas. Here in 2009, I have nearly twenty friends on *Facebook* I have never seen face-to-face. The essence of interaction and contact has definitely moved into a different realm—and also effects the perceptions and value judgments I give to my physical relationships.

Today people can connect with each other and build vibrant digital communities based on all sorts of commonalities: *Star Wars*, trying to lose weight, a

simple, customizable canvas. In this case, constraints are seemingly endless to a critical eye, and could be anywhere within the web interface contained within a browser interface, within the operating system, or within the physical hardware. Still, the average user feels free to control their experience and the affordances of all involved interfaces provide a comfortable framework in which users can interact. The users feel enabled, and ultimately adjust their thoughts and behaviors due the persuasive interactivity of the site.

The response to Jeffrey Han's presentation at TED was full of excitement—a response likely to grow as developers begin to more fully understand both the positive and negative effects that design can have on users. Lunenfeld was partially right; users can choose what media to consume and what not to consume. It is not logical, though, to assume that media consumption choices made by the user are either mindless or recognizable as such to the user himself.

If developers look beyond common quantitative usability data they will see new media interfaces as a platform for effective communication, collaboration, and persuasion. As one voice speaking for the massive community of media consumers, all I ask for are interfaces that have been designed and developed with our physical, psychological, and social wellbeing in mind. We understand that developers may not always get it right, but we would like to know that they have our interests in mind as we continue to support their intellectual and creative endeavors.

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INTERFACE: SOCIAL INTERACTION AND THE HUMAN CONDITION

Written by Lauren Waugh, Commentary by Liese Zahabi

Twenty years ago I was seven years old. Social networking, as I knew it, existed only within the physical world; for that matter, it wasn't even called social networking. I made my friends at school, through after-school activities, and in church; the world in which I learned to forge relationships with other human beings was limited mainly to my immediate physical surroundings. And even within that world, my only means of quickly communicating with members of my network in the absence of their physical presence was via telephone. Via a telephone with no caller ID. Via a telephone with no call waiting. Via a telephone with no answering machine.

Some might say that the world of twenty years ago was more limiting and there's no doubt it was more technologically limiting in respect to human communication. But in the absence of the internet, *iPhones*, and *Facebook*, people were still able to forge richly layered relationships, or social communities, within the physicality of their personal spheres. These were based mainly on proximity but also on common interests and values. Human-to-human interaction was crucial to communication and to the maintenance of these relationships. Collaboration was also achieved within the physical world through acquaintances or committees, in part because communication was less all-encompassing than it is today.

The introduction of newer and newer communications technologies has changed the nature of human relationships within social communities. My thoughts surrounding

passion for board games, even on an intense love of Elvis! Life has certainly changed for the geeks among us, and for those who find themselves physically surrounded by people they don't have much in common with. Of course, the internet has also made it easier to escape (and perhaps give up on relationships with) the people physically around us. Now that it's easier to connect to those we agree with, have we lost the ability to find common ground with those we don't?

The idea of community through context is vital to the internet, and it will be interesting to watch this concept mature and change. It could also be interesting to analyze how the context of an existing community can shift and alter as forces in the physical world change. If we actually do extricate ourselves from Iraq, how would online communities banding together against the U.S.'s involvement there react? Would they disband? Regroup under another cause? And how would that alter the relationships among members?

interface lie within this intersect of social interaction and human emotion. I'm interested in how the use of interface in digital environments can facilitate relationships based on affordances for interaction and emotion. Social networking within online digital communities is a pop culturally relevant facilitator of human relationships. I'm interested in how interfaces within these and similar environments can provide multiple layers or levels that either digitally mimic or alter the traditional formation and maintenance of human relationships within the physical environment. I don't think a digital system yet exists that captures the many complexities of human social interaction in their entirety. However, I do think there is value in exploring existent qualities within certain interfaces that correlate to current cultural trends relevant to the topic.

The trends I will discuss all fall within the realm of online communities and are all growing and evolving out of what I think of as the traditional conventions of physical community formation. The first is the trend toward the formation of digital communities based on common beliefs or value systems. The second is the translation of physical human-to-human interaction to virtual human-to-human interaction. The third is the construction of technological allowances that bridge collaboration between both the digital and physical worlds.

The design of interfaces based on certain conventions of human behavior have the ability to affect trends and the cultural trajectories that accompany them—especially if those behavioral conventions are unique to a group of people belonging to a specific online community. I've noticed qualities of the interfaces of certain online communities, such as in the community portion of Etsy, which I think play important roles in the longevity of the systems within which they are situated. These are by no means all-encompassing, but are observations upon which to build. One quality is that of community through context, which could manifest itself in the trend of common interests toward which community members gravitate. Another is the provision of tools which shape the nature of virtual human-to-human interaction and facilitate the collaborative process. These two qualities, which can be designed into an interface, feed into a system's ability to adapt over time and across mediums in order to outlast mere trendiness.

Communities such as the one within Etsy, which began as an online marketplace to showcase and sell handmade goods, connote certain behaviors of human interaction within the physical world while also connecting people to their contemporaries in ways that they might never before have been able to connect. In the same way that craft fairs bring people with similar interests in handcrafted goods together, Etsy allows for the exposure of those goods on a larger, more global scale. It provides a more expansive range of possibilities through which customers can sort by removing geographical constraints. Etsy is fundamentally different from other online marketplaces such as eBay because Etsy members have a more consistent common interest, even if it is as broad as an appreciation for the handmade. Unlike eBay, Etsy has started to build a community around this common interest and provides tools for connecting artisans for collaborative projects, maintains an events calendar, and spotlights different designers, among other community-centered features. That broad interest provides opportunities for the creation of a sense of community, taking on the feeling of a similar and shared value system.

While Etsy incorporates social networking into a marketplace for the burgeoning entrepreneur of the handmade, it loses some of the value inherent in person-to-person contact through the selling of specialty goods. I think that this issue is one that is, in part, caused by but could also be addressed by Etsy's interface. Although Etsy provides many affordances for human connection and collaboration, there isn't much uniqueness in the interface, the construction of which uses current web conventions and visual language. Etsy

has an essentially different mission than eBay, yet the interfaces of the two look and behave in very similar ways.

There are a number of possibilities that could be incorporated into both the visual and behavioral language of Etsy's interface. One exploration could involve a feature that has the feel of a real craft fair or marketplace, possibly through the translation and incorporation of craft fair visual language or conventions into the visual landscape of the interface. While it may not be so extreme as creating an entirely new visual landscape, small changes could be made such as in the way that a customer views a sellers' items. Instead of clicking through several square, statically boxed photographs of items, perhaps sellers could place their items on a virtual table within a virtual booth. Instead of scrolling through, customers could then use their mouse to "pick up" items, inspect them, and get more information. Perhaps sellers could make themselves available for live chats at certain scheduled times with interested customers to provide more of a real-time interaction beyond the current contact through email.

Another area where the design of the interface could facilitate collaboration between designers and customers is within the "Customization" section of Etsy. Currently, customers can post their wants and sellers can scan the page for custom jobs. This seems counter to how customization is approached in the physical world. Possibly sellers willing to take on custom jobs could be categorized into certain shops based on specialty and customers could shop for the best designer instead of the designer shopping for the customer. While the possibilities for incorporating a distinct experience through rethinking Etsy's interface are vast, I think that the most successful changes would take place within the points of contact between members, buyers, and sellers.

Altering an interface in this way could bring a more human element and further differentiate a community like Etsy as an entity in and of itself, one in which people place value on the crafting of products instead of the eBay model of unloading goods to the highest bidder. The personal aspect exists more clearly in Etsy's model and that aspect could be furthered through changes in both the functionality and aesthetic of the interface. This type of transition plus the addition of tools that could translate across mediums, ranging from the physical environment to emerging technologies, could allow for more flexibility in order for the community to adapt over time.

As technology is becoming more and more prevalent in facilitating the human connection, the nature of human experience is shifting from the physical world into the digital world. Many present day interfaces are mired in early computer and web conventions, which serve to limit this shift, but therein lies much potential for the exploration of translating and incorporating conventions of traditionally physical human behaviors into these interfaces.

However, generational shifts are ever-evolving, changing the nature of human interaction both in communication and within physical environments. My generation is probably the last born into a world where the landline telephone served as the chief method of quick communication. The impact that a new generation—born into a digital world, in which the failure of the internet would, in their minds, constitute a catastrophe of armageddon proportions—will have on social communities as we now know them will be enormous. Conventions that exist within the digital world will most likely take on more prominence in regard to communication and then later translate into conventions within the physical world instead of vice versa. Small transitions of this are already apparent, particularly with language and the spoken word, but the maturation of the digital generation have a huge impact in altering the current trajectory of interface and its role in human social interaction.

I believe this is key to breaking through to new and exciting territory in both web and interface design. Letting go of many of these conventions (adopted for generations of users completely unfamiliar with the technology that is nearly ubiquitous now) and stepping into a different thought process and conception of digital space and our relationships to it is vital to any meaningful innovation. And our generation will be leading the charge!

This is terrifying and thrilling at the same time! How will our notions of space and time and motion change in the physical world as we strive for efficiency or social connection or relevancy of data that can match that of the digital world? What metaphors from virtual space will we drag out into the sunlight and try on? And will that be a cycle or just a reversal of a one-way street? Only time will tell.

THE SPACE HOVERING BETWEEN

Written by Liese Zahabi, Commentary by Tania Allen

The concept of interface has a very familiar feeling at first (like the face of a loved one)—it is the skin between two things, allowing interaction to take place. It is the computer screen, the access system to an ATM, even the structure of a book. But, just like the face of a loved one, the harder and deeper you look, the stranger it becomes, steeped in unfamiliarity, made even more unsettling and curious for the perception of complete familiarity just a moment before. To attempt a concrete definition of the concept is a very slippery prospect.

Using only this notion of a membrane as criteria allows for an overwhelmingly liberal application of the term interface. Thus, your face is the interface between your brain and your friend, a window is the interface between a housecat and the world outside, and a shower cap is the interface between your hair and steamy water. These all exist as membranes between people and/or objects, but a very key ingredient is missing: connective and mediated interaction.

Interaction can be defined as a “mutual or reciprocal action or influence”¹, a give and take, a call and response, a ‘you scratch my back and I’ll scratch yours’. I type a word into the search engine, the engine spits out related responses. I click on the ADD TO CART button, and the desired item is one step closer to being mine. I press my fingers onto parts of my keyboard, and these very words appear on this page. Actions create re-actions and responses, which in turn create moments of decision and more actions. Therefore, interface consists not only of a membrane or boundary, but one that facilitates and enables this cycle of interaction.

Even as this definition of interface begins to focus on these basic parts, other even less tangible (yet perhaps more illuminating and interesting) elements lie in the periphery. Beyond this mere litmus test for identification exist aspects even more ripe for examination and critical consideration.

What Lies Betwixt and Between?

John Dewey, in his book *Art As Experience*, suggests that there is a distinction between *experience*, which, “occurs continuously, because the interaction of live creature and environing conditions is involved in the very process of living,”² and *an experience* which is set apart from everyday experience by some special quality. This is true of interface as well, every aspect has a quality, and in turn, the entirety of the interface also has another distinct quality. Moreover, interacting with an interface over time generates an experience, which also has its own particular qualities.

In the video game *Katamari Damacy*, the player is presented with a charmingly chaotic environment, and a very basic set of interactions. The game's plot concerns a diminutive prince on a mission to rebuild the stars, constellations and Moon, which were accidentally destroyed by his father, the King of All Cosmos. This is achieved by rolling a magical, highly adhesive ball called a katamari around various locations, collecting increasingly larger objects, ranging from thumbtacks to people to mountains, until the ball has grown large enough to become a star. *Katamari Damacy's* story, characters, and settings are bizarre and heavily stylized, rarely attempting any semblance of realism, though the brands and items used are based on those current in Japan during the game's production.³

As designers, we are taught to think this way—to understand that each instance contributes to a greater whole. But often we become immersed in one quality, or one behavior, and cease to consider its place within the larger experience.

The game play consists of guiding the prince through a littered landscape, and attempting to roll over as many objects as possible. Movements and options are basic and repetitious—you push your katamari through the environment and collect objects—and while many levels exist in the game, the game play remains much the same in all of them. However, the environments are highly stylized and detailed (even though they employ very basic and simplified graphics), and the sheer number of different objects you can roll up into your katamari ball creates surprise and intrigue as to what you will ‘run into’ next. Often as you roll objects up into your katamari, the objects around them begin to respond. Pencils knock marbles and bottle caps down slopes, creatures and people flee from you, knocking other objects out of your path.

The audio elements further enhance play—the incidental music is upbeat and rhythmic, and the sound effects for objects are unique and intricate. Cows moo desperately as you roll over them, and school children yelp in terror. Discovering the different sounds all the objects make as you interact with them is as compelling as exploring the environment and visual nature of all the elements. All these details add to the particular experience of playing *Katamari Damacy*, and make it decidedly unconventional and different from many other current games.

Interacting with a book is another great example of interface having a particular quality. The experience of handling a family bible has a much different quality than that of a second-hand paperback. Flipping through a brand new hard-bound copy of *Meggs’ History of Graphic Design* has a different character than scanning the phone book for a restaurant. These experienced qualities have to do with materiality and physicality, sensual nature, and even content of the book; as well as with the needs, perceptions, predispositions and desires of the user.

This notion of quality and experience is intrinsic and unavoidable when dealing with interface. Interactions with websites, books, video games and other types of objects create experiences encompassing very specific qualities—they can engender frustration, humor, sadness, reflection. One of the jobs of the designer is to carefully consider how all the small moments and pieces of the interface act individually and in concert. Is their conception and execution consistent? Do they work together as well as they do in isolation? What overall and overarching message is the interface delivering? How might users perceive an experience with the interface? Examination of these small details in relation to the desired ‘big picture’ and intended communication can help bring cohesion and consistency.

Of course, this interrogation and planning can only go so far. Designers cannot control the experience of their user—they can only carefully create the conditions under which the experience may occur. In this way, designing an interface and releasing it to the public (like nearly every act of creative energy) is a bit like throwing oneself into the abyss. No matter how many focus groups have been consulted, how many plans have been drafted, thought through and assessed—you really don’t know what you’re going to find at the bottom. But the intrinsic quality of the interface *should* be crafted into something consistent—illuminating a message, idea or position—whether it resonates with users as intended or not.

Details in the Action of Interaction

The procedural operations and functions of an interface are another vital facet worthy of critical assessment. In his book, *Persuasive Games*, Ian Bogost (a gamer, game designer, and academic) discusses what he calls “*procedural rhetoric*, the art of persuasion through rule-based representations and interactions rather than the spoken word, writing, images, or moving pictures”.⁴ In the book, Bogost is mainly discussing procedural rhetoric in regard to

We often think that for something to have depth, there needs to be complex understanding and behaviors associated with it. But, we can take cues from games like this that the simplicity of interaction can be inversely related to the richness of the experience.

This also brings to light the idea of designer as curator. We often don’t think of ourselves this way. We consider ourselves architects of sorts—putting elements and ideas together in such a way as to ‘illustrate’ a meaning. But in essence, and through this role, we are furthering an agenda. And so we need to consider what, exactly, that agenda is and whether or not it is contributing to a greater good

(however we might define that).

video games, but this concept can easily encompass other types of interface. Every moment of interaction, every choice given and alternative allowed, every scaffolded decision made (or merely considered) shapes the overall perception, expressive nature and persuasive voice of an interface.

The procedural rhetoric in *Katamari Damacy* is more intricate and complex than it initially seems. As the user rolls the katamari ball around the environment, the objects that can be collected are directly proportionate to the size of the ball at any given moment. At the beginning of every level, the ball is very small, so only the smallest objects can be collected: thumbtacks, paperclips, pebbles. As the user collects these objects, the katamari grows, allowing the user to now collect larger objects. Moreover, as the katamari grows larger, more of the world becomes visible. The user begins at a very micro level, unable to even perceive much of the environment that exists at the macro level. As the katamari becomes larger and larger, the world shifts and changes, and the user can interact with other objects: cars, houses, gas stations, even mountains. The functionality of this gradation of collectability serves to give the user a sense of the vastness of this world, and to persuade him or her that the katamari is growing large enough to be a star.

An interface with beautifully realized graphics, interesting and appropriate typography and a persuasive message can still be ruined with clunky or confusing navigation and interaction. The way the user *engages with* the interface often speaks louder than the way the interface looks. Crafting every interactive element, structuring every system layer, fashioning every piece of the choice architecture with consistency and care helps to reinforce the intended qualities of an interface. The devil is not only in the details, but also in the way those details move and respond and function. The diligent designer must wage a holy war—must mold and shape every single second of every single moment into one strong statement. Vigilance will be rewarded!

Defining Within the Gaps and Crevices

The face of interface is still wavering in and out of focus, but perhaps that is inevitable. Such a slippery and nebulous concept is unlikely to be nailed down (once and for all). But the fumbblings and gropings into the cracks and crevices can move us closer, not necessarily to a definition, but to an understanding of how interface is explored, engaged with and designed for. Each tiny thread teased out winds far into the distance, ready to be followed and examined further. This is proving to be just the beginning...

As designers, there may actually be benefit to keeping this open to interpretation. It allows us to explore possibilities that a strong definition would not. If interface were defined too finitely, what would we miss, and would we continue down the rhetorical path that we are currently on—one that may be quite narrow.

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SUPPLEMENTAL ESSAYS

TANIA ALLEN

INTERFACE, TRANSPARENCY AND UNDERSTANDING

We can't talk about interface, without talking about new media, and specifically digital new media and how it has influenced not just how we communicate, but how we understand. New media has taught us to be comfortable with impermanence, and even to covet it. To design and create something that is in constant flux. This is not something that comes easily. Our history in designing for communication and understanding has relied more on permanence, creating canons that are destroyed after an intense ideological struggle—to be replaced by something else. New media (and so interfaces) show us, on a daily basis, that what we create will change almost before we are done creating it. This is a lesson that has not come easy, and which we, as designers, are constantly negotiating. We are embarking on an entirely new way of considering interface and new media, and it's uncomfortable. We are caught between possibility and implications. We are still negotiating what all of this means, while at the same time considering what will come next, and how what we are currently creating will be used, appropriated, and changed.

In the past, one way that we have worked to negotiate (and digest) this ever-changing landscape is, as Bolter + Gromala state, to make the interface itself invisible—to privilege the content over the interface. In their argument, this reality has attempted to make the technology itself invisible, and make the interface more understandable. I would also argue that it has helped the interface designer and developer relieve the burden of the daunting fruitlessness of his task—the complexity of the unknown. But what it doesn't do is make his task more fulfilling. It uses an old methodology to address a new problem.

Rather, as designers we need to constantly move between where we're trying to lead the user, and where the user will lead us. We need to set up the conditions for the experience, but not the experience itself. We need the user to complete the interface. We should constantly fluctuate between the micro and the macro—between the small moves and the bigger understanding. And know that different experiences will shape different understandings.

The examples of digital art as models for interactive design are interesting because they are both calculated and experiential. They don't exist in their full form without the user, but they also don't give everything up. They allow the user to explore, discover and manipulate the interface within a controlled environment. The interface is not invisible at all, but is completely integrated into the understanding of the experience. There are interesting lessons to learn, but I don't think they will be learned easily. We are designing interfaces in a world that might not be ready to release all control. As students, we can explore, experiment and define our own rules. But, how do we transform this exploration into something that is accepted and acceptable to clients—to those who are presumably paying for a 'result'. How do we translate this model? We need to define a new language of interface design and experience to account for the partnership between the user and the developer.

I would also argue we can't, and shouldn't give everything up to technology. There is a danger in ceasing to consider the implications of what we are creating. Recently, I was listening to a radio show, where the topic was robotic warfare. Computer robotics has advanced to such a degree that an army lieutenant in Indiana can spend the day shooting missiles at insurgents in Afghanistan. What struck me first was the dissociation that the soldier must have with his own actions. What I didn't consider, but what the program illuminated, was that these soldiers actually had higher rates of PTSD than soldiers on the ground—precisely because of the divorce from reality—the knowledge that his actions were having real consequences, but not really knowing (nor being able to see) what that meant.

So, we run the risk of using the speed of technological advancement to change things because we can, but does that necessarily mean that we should? Technology is, at its best, a tool that enhances our abilities. In his book, *In the Bubble*, John Thackara states “tools for collaboration, such as the internet, agents, wireless and knowledge mining, are support for the process, not the process itself.” (p132) We are inherently creative creatures, and so our ability sometimes dictates our actions. We are at a pivotal point, where the capabilities of technology could easily outweigh the benefits of those capabilities. We can forget to look at the root of what it is that we’re trying to make better (and I do think we’re trying to make things better) and instead look at the technology itself. We remain firmly in the center of the existing condition, and try to make it better from within. Rather, and again quoting Thackara, shouldn’t we move to the edge, to the area between where we are and what might be (216), to be able to see both more clearly?

I think that we are at a pivotal time in the technological shift, precisely because technology ceases to be a barrier to what we can and can’t do. It’s only a matter of time and conscience as to where it will take us. As designers it is increasingly important not just to consider what we can create, but also to what end? We have the opportunity to contribute to making life better and more fruitful, but we need to define what that means, and how technology can get us there, not how we can get somewhere through technology.

WHAT IS MEANINGFUL?

Tania Allen

I cannot read Peter Lunenfeld’s piece on *The Secret War between Downloading and Uploading* without wanting to unpack the concept of “meaning” in meaningful uploading. Lunenfeld intentionally avoids explicitly defining ‘meaning’ precisely because of its messiness—and instead gives a general description of meaningful uploading as, “hav[ing] enough of an affordance to connect with other elements of the network to add to larger questions of meaning rather than simply shimmering there as nodes in the distraction machine” (54). To me, even this definition embodies some of the same uncertainties. Who is defining the larger questions of meaning? Who is defining what a distraction is? Do we all experience meaning and distractions in the same way? What examples would he use to define meaningful uploading? Would a personal photo story be meaningful but snapshots from a night on the town not? Are there degrees of meaning within any given uploading action? Ultimately, what I find particularly compelling in the argument that Lunenfeld makes, and the distinction that resonated most with me, lies in the intent, understanding and motivation compelling user choices and behaviors when uploading or downloading.

The rise of the computer, and specifically the internet and networked environments, has created an environment that is completely out of our control, with little or none of the context that adds to our understanding of information, culture and society. Online (and in the computer) all things truly are created equally, and it is up to the user to sift through what they don’t want to get to what they are looking for. Search engines do not filter out ‘junk’ they only filter out what has or has not been tagged as ‘relevant’, with no understanding of what is important to the user. The unprecedented and universal access that users have also adds to the confusion. With lack of context, it is increasingly difficult for users to understand the complexity and depth of any given topic—and that the representation online is not necessarily a marker of validity or even popularity (as he calls it, ‘stickiness’). A good example that he uses is ‘fandom’—validating (maybe superficially) a genre or a pop icon through sheer volume and vocalization. Online, this validation is especially pronounced as the context for it, and an understanding of the ‘thing’ outside of this particular environment, is harder to collect.

And so as a designer, I read Lunenfeld’s piece as a call to consciousness—an understanding that we cannot control when, where and how what we create will be experienced—that users can understand history outside of a historical context, and can feel nostalgic about a time or place which they have never experienced first-hand. The potential accumulating of disparate pieces into one understanding makes our role as contributors heavier, and requires increased attention as to what it is that we are contributing. We are not carving out and ‘uploading’ to one piece of the network, we are helping to build and expand its entirety.

MEANING/MIND/FUL/LESS

Tania Allen

Lunenfeld's main argument in *The Secret War Between Uploading and Downloading* is that we are spending more time, effort and energy downloading—and downloading mindlessly—than we are in uploading—and uploading meaningfully. He attributes this current condition to two things: that we exist in a consumer culture that encourages consumption over production, and to the popularity of the TV as a cultural icon, and our conditioned behavior to accept what it outputs.

But, the new culture machine is the computer. And, Lunenfeld argues, it is so because of the possibilities and capabilities that it holds.

The computer is the first media machine that serves as the mode of production (you can make stuff), the means of distribution (you can upload stuff to the network), and the site of reception (you can download stuff and interact with it). The computer helps people to create experiences and offers them spaces, often virtual, sometimes augmented, to share them. This is the promise of the computer as culture machine (Lunenfeld 5).

Lunenfeld makes a powerful observation about the current state of our interaction with the medium of the computer. But, ultimately his main premise about mindfulness and meaningfulness creates an argument most compelling to an audience who is already interacting with the medium in a certain (potentially more mindful) way. Lunenfeld defines his notion of meaningfulness by stating that, “Work uploaded into the world ought to have enough of an affordance to connect with other elements of the network to add to larger questions of meaning rather than simply shimmering there as nodes in the distraction machine” (Lunenfeld 54). This definition of meaningfulness is still somewhat abstract, and assumes an adherence to a certain value system. But the democratization of the online, networked environment inherently means that users from many experiences and value systems are participating, and we in turn are being exposed to these differences. From this perspective, building the argument based on values and common understandings can prove somewhat problematic.

It is precisely because of its power and possibility that transplanting our history of consumer culture into the world of the computer has more far reaching implications. But the reasons for our interacting with the computer in this way are much deeper than our history with the TV and the Bomb—our modern society was constructed on consumerism, and our behavior responds to this. The TV did not make us consumers, but it provided another channel to reinforce our conditioned behavior. And so, we cannot expect our behavior within the networked environment to be radically different than outside, especially when the conditions of that environment reinforce a similar imbalance. The networked environment has become another conduit for our consumerism, and an especially powerful one.

Lunenfeld's supporting arguments are actually more powerful in understanding how and why we use the computer in the way that we do, and might bring us closer to understanding how to interact with it in a different way. As John Thackara states in *In the Bubble*, “If we can design our way into difficulty, we can design our way out” (1). In this case, we need to understand that we have designed a network without boundaries. The two points that Lunenfeld makes that bear more discussion through this lens are the decontextualization of content and the mediated experience of the computer as a culture machine. Both of these give a strong grounding for understanding how the computer as a medium may engender a certain type of behavior, and are important in considering how to affect an alternate outcome. As Lunenfeld states,

If anything, the culture machine allows for even outsourcing of our memories, with audio files, image banks, and video storage added to the archive. The effects of all of this storage goes well beyond the memory of personal experience to

encompass our memories of mediated experience as well. The universal database transform the direct linkage between the object in time and the actual memory of that time. TV led the way, with children who grew up in the 1980s now "nostalgic" for their first viewings of "I Love Lucy" — a show that may well have predated their own parent's childhood. In other words, by the start of the 21st century, a uniform, temporally melded popular culture now exists that no longer needs stratification by decades (Lunenfeld 52).

The notion of contextualization is particularly compelling in understanding the conditions under which we engage with and experience current networked environments, and directly influence what we decide to upload or download. This decontextualization is also directly related to our understanding of how we consider our own role of participation. Being able to access old episodes of "I Love Lucy" (to use Lunenfeld's example) and the newest NASA flight plan within the same space and session creates an environment and understanding of a medium that is fragmented at best, and lacking boundaries and clear relationships. Could this decontextualization create a mental model within the user that is discouraging of contributing anything 'precious' which is arguably inherent in 'meaningful' uploading? How can users create habits of meaning and mindfulness within an environment that provides so little structure and context? And considering it within the construct of consumerism, those conditions that may inhibit our consuming in the 'real world' (CDs piling up, books falling off shelves, old magazines getting moldy in our basement) cease to be reminders of the amount of consuming that we are actually participating in. They are reduced to bits, numbers, and abstract space taken up on our hard drive (and in our brain).

Lunenfeld's discussion of the universal database is a good example of the mediated experience. The ability of the Internet positioned it as a repository of anything and everything. It was transformed into an environment of possibility, at the same time mediating our interaction with content through unique and individual access portals that have little or no coherence across platforms. It is this history that has encouraged the fragmentation and decontextualization of the content and the experience. And so I would argue that dissecting the medium further is vital to shifting user roles from one of consumer to one of producer (and mindful producer). As Lunenfeld mentioned in his talk, social networking sites begin to encourage users to consider the medium a bit differently, but I think he was also right to acknowledge that these are very 'low stakes' sites, where the contribution does not have far reaching implications outside of your own network and where what you are contributing is more voyeuristic than truly contributory.

Lunenfeld is picking up on a compelling and provocative subject matter with this manuscript. Ultimately, there is an opportunity and a responsibility to reshape the networked environment into something that encourages our progress as a domestic and international culture, society and people. The imbalance of downloading vs. uploading is indicative not just of a cultural sickness, as Lunenfeld highlights, but encouraged by the medium itself. It is this second point that deserves more attention, and will ultimately set a compelling and powerful stage for how we might begin to address a cultural and behavioral shift in our participation in downloading and uploading.

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A MATTER OF PERSPECTIVE

Tania Allen

In her book, *Writing Machines*, Katherine Hayles argues substantively about the need to account for, and mediate materiality and environments in our interaction and consumption of literature. In particular, Hayles shows an unabated enthusiasm for the online environment as a medium for a new kind of literature, which she coins (among other things) as technotexts. "As the vibrant new field of electronic textuality flexes its muscles, it is

becoming overwhelmingly clear that we can no longer afford to ignore the material basis of literary production” (19).

Hayles uses three case studies to illustrate the role that medium and materiality play in our understanding and experience with literary technotexts. In *Lexia to Perplexia*, the author, Talan Memmott foregrounds the computer as machine, creating a ‘creole’ or hybridized language that is part human and part computer code. The very experience of reading it raises questions of human understanding and cognition in comparison to the computer. The boundary between the literature and the medium is in constant negotiation and would be an entirely different piece (and arguably less meaningful as an experience) outside of the materiality of the online environment. The materiality of the environment and the literature itself are heavily dependent on one another.

Humanent, an artist book by Tom Phillips, employs the materiality of the print book by transforming it. Through overlays of images on existing text, Phillips illuminates certain ideas and creates analog ‘hypertexts’ throughout the physical space of the book. The book itself is wholly dependent on the physicality, for without the original properties, *Humament* would cease to exist.

The third case study is potentially the most powerful as an argument in support of the importance of materiality because of its wide acceptance as a bestseller. The materiality of *House of Leaves* rests on the multiple and parallel voices and stories that make it up. The experience of the story is the experience of the book, for as voices and stories shift, their corresponding relationships on the page evolves.

Reading Hayles’s *Writing Machines*, I couldn’t help but be reminded of some of the arguments and ideas expressed by Mark Johnson, and the notion of the embodied mind. I think it is clear and unarguable that context, medium and materiality are critical to our understanding of a ‘story’ whether it be cognitive, literary, or communicative.

The case studies that Hayles chose are obviously representative of those artists who are cognizant and using the medium almost as a character or setting in the literature—or technotext— that they are creating. In these examples, it is obvious how material and context—to varying degrees—help shape our understanding and experience with literature and all reading. This brings up a few questions for me on the nature of materiality within *Writing Machines*. Hayles uses examples of pieces particularly crafted with medium in mind, but I also wonder to what degree, and how we might understand or challenge the translation of literature from environment to environment. It seems obvious that those pieces of literature (or technotext) that are designed as an exchange or interplay with materiality need to be rethought, but what about those pieces that are less conceived, or less obvious? How would a John Grisham novel be reconceived for the online environment, or should it be at all. If materiality is the partner of the experience, what does that mean for the movement from analog to digital. Does that necessarily assume that the movement is not possible or just that it takes on a new meaning?

My read of *Writing Machines* is that it is conceived of as a manifesto for the literary community to value technotexts outside of the traditional print medium, and to take them seriously. It is obvious that the extreme examples that Hayles employs in the defense of her argument use medium and materiality not only to augment a text, but to shape and define it. For this reason, they are particularly successful in illustrating the possibilities that materiality can play, and I think can give us cues and lessons to how we might think of materiality in our design and conception of storytelling and literature in a wider spectrum.

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TECHNOLOGY AND ENVIRONMENT

Tania Allen

In *Writing Machines*, Katherine Hayles advocates for the acknowledgement and importance of materiality and environment as vital to how authors write, create, and produce meaning. As a designer, I cannot help but consider the role dialogue and co-creation play in this realization. For a number of reasons, the text is more of an historical launching pad than a contemporary reference for how we, as designers and communicators, understand and respond to materiality and context in our own work. This perspective rests on a few particular points: the age of the text itself, the examples that Hayles uses to illustrate her points on materiality, and the role that technology (and materiality) plays in realizing a balance between word and environment.

Even though the text is only seven years old, in technology years that is an immense period of time. Our experience and understanding of hypertextuality and the online environment is entirely different now than it was even 2 years ago. We are shifting away from the traditional notion of the online environment as a mirror (in digital form) of our real world, and increasingly recognize it as an entirely separate environment that engenders different expectations, behaviors, and understandings. In many ways, Hayles is taking the model of the printed book and transferring into the online / hypertextual environment—it is the dissemination of an idea to an audience. The author is artist. It is the artist who is crafting the message and meaning. But the power of the current online environment lies in the multi-directional nature of creation, craft, collaboration and meaning. Hayles discusses collaboration between author, material, and even designer. But what of collaboration with the audience? Sites like Wikipedia, Lego Factory, and Swarmsketch create meaning and content solely through user interaction. The definition of co-creation is somewhat nebulous and open to interpretation. It can mean actual authorship, but equally as compelling is the idea of audience as 'player' in the creative process. This could mean as participator, experiencer, or 'driver'.

But not all artists see themselves as distinct from audience. Particularly compelling in Camille Utterback's work is the role that the user plays in actually creating it. Looking back at the examples of Wikipedia and Lego Factory, the work itself is entirely dependent on the user to create. This is key to the online material experience and also a core difference between Hayles original essay and where our understanding of the online environment is today. While the examples that Hayles utilizes are compelling, beautiful, thought-provoking and powerful in their use of material and the negotiation between word and story—and the environment in which they exist—they continue to use the materiality of the print or digital environment in much the same way. Neither considers a different overall interaction with the audience.

As is common in many fields, and especially in cultural and technological movements, it is often artists who embrace possibility before a more 'mainstream' audience is ready and willing to do so. For this reason, it is clear why, and how, Hayles would use artists book as the perfect medium to illustrate her points on materiality—they are the 'extreme creators.' Especially in the first two illustrations, *A Humament* and *Lexia to Perplexia*, Hayles illustrates her fully.

“If my case for the importance of materiality rested only on *A Humament* and *Lexia to Perplexia*, it might risk being seen as special pleading; for these tests, wonderful though they are, are somewhat anomalous in the literary tradition. *House of Leaves* demonstrates that materialist strategies are also intimately involved in a best-selling novel (110).”

But even in the third example—*House of Leaves*, which was a best selling novel—the materiality is intriguing as much as an experiment as a story. Considering the degree to which we understand environment and materiality today, the more compelling point that this case provokes is not how artists and the literati can use materiality, but how authors (and designers) can incorporate these ideas into everyday uses of technology. The transfer from print to web, for the most part, continues to be a direct translation. When a book travels from its printed form onto GoogleBooks, it takes the form of scanned print pages. What GoogleBooks does effectively, and where it uses materiality powerfully, is the way it highlights searched-for phrases and concepts. The behaviors and movement through the book, however, are identical to that of a printed book—you move from page to page, or 'flip' through the book. If materiality were considered more thoroughly, this could change our understanding and experience entirely, and might even encourage a longer 'read.' For instance, the table of contents currently

shows chapters, identical to the way it appears in printed form, but has the potential to be completely interactive as a search tool. It could provide glimpses into what exists around the highlighted phrase or idea, and directly the user straight to it, rather than having to sift through the book in the hopes of finding something of use. Digital environments also afford the possibility to connect not just within an existing site or document but also outside of it. Google books could also create links and relationships with tangential materials, user feedback and dialogue to help users develop a greater understanding of the material and resource.

Hayles advocates strongly for the notion that materiality is vital to our understanding of a piece of literature, and is an opportunity to consider not just the words that are written, but also how they might be experienced. This is obviously a lesson well considered as designers and communicators. A more striking lesson—one that I'm not so sure Hayles intends—is how easily technology can obfuscate meaning. This may be as much a relic of the age of the original writing, but the compelling characteristics of technology is its ability to create new meaning, and support a new and insightful experience. In many of the examples from the Electronic Literature Collection—and even in Stephanie Strickland's work—technology seems to be the main character. It ceases to support and grow the experience, and becomes an additional channel to navigate through. This is a constant issue that designers face, and something that I think we can learn well from Hayles examples and the theme of her writing (whether or not the examples support it).

How can technology and the materiality of the online environment negotiate new meaning and experiences without taking over? The online environment is inherently a democratic one. We contribute in both public and seemingly private ways to create a tool that is accessed globally. And so I wonder how valuable online materiality is that demands the user be led through to understand it. There is always some benefit to asking the user to slow down, to explore, to encounter the unexpected. But it needs to be balanced with a fundamental understanding of how to access the material. This is not pandering, it's key to the concept of the online environment—users are interacting with your work, whether you are or not. It is anathema to create something that is presented online, but cannot exist or be accessed or understood independently.

The points that Hayles makes regarding the partnership of the material environment and the written word are strong, and common to what we as designers face in our own work. The argument is compelling at its core, but problematic in some of its examples. If the negotiation between environment, content and understanding cannot be mediated through materiality, then at best, materiality ceases to be a compelling factor in the experience, and at worst, it actually hinders it.

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PROCEDURE FOR CHANGE

Tania Allen

There is no denying that video games are a compelling, if not transfixative, medium. The entertainment industry as a whole goes through economic downturns with the least impact, and consistently has people line up overnight, for days, to buy the latest version or the first tickets for the next event. It is a powerful medium. And while most forms of entertainment engender validation on some level, video games as a whole do not. In his book, *Persuasive Games*, Ian Bogost seeks to debunk this notion, but even more to highlight the ability of the gaming environment to be transformative; to seek to introduce ideas and behaviors that can transfer into the material environment. Through three key attributes: procedural rhetoric, persuasive games, and the rhetoric of play, Bogost strives to distinguish games that are effective in the attempt to make impact, and those that miss the mark. But by failing to acknowledge and unpack the popularity of video game violence (and the implied fantasy and escapism that is embedded) or distinguishing and defining the term game from mere interactivity, the argument for validating the video game becomes more about extracting core behaviors of the gaming environment and repurposing the, then about using the gaming structure for a different ends.

Procedural rhetoric is defined as the ability to experience an idea or concept, rather than having it explained to you, or seeing evidence of it. Through simulation (which all essentially are) a powerful medium is opened up where users can experience what it's like to pay (or avoid) taxes, accumulate wealth, try on clothes, etc. As designers, this type of simulation is something that we have not fully explored outside of the gaming environment. And some of the examples that Bogost uses do that in a compelling way. *G!rl Power* gives users the ability to 'un re-touch' a photo to illustrate how fashion photography is distorted. But, is this a game or an interactive experience? Once I have participated in this event, am I compelled to come back and do it again and again? It seems one of the key affordances of the video game structure is the compulsion to continue to 'play'. If that's not in place, can it be deemed a game? This is an important distinction in trying to legitimize and validate the gaming industry: examples have to be specifically defined as games or the argument is less successful. As interactivity and online experiences continue to draw from the core interactivity of the gaming environment (whether intentionally nor not) this boundary becomes less clear and makes the definition of game all the most important.

It was hard to move through the argument for legitimizing gaming as a valuable and critical medium for behavior change, without first understanding and acknowledging the large impact of violent or criminal simulations. Bogost makes a likening of the early movie industry as 'chases and pie fights' before *Birth of a Nation* came out in 1915 (viii) and this is well heeded. But the level at which the violence exists, and the ability to simulate these scenarios with increasing realism all contribute to its popularity and something that needs to be demystified (or debunked) to create an opening for an alternate 'read'. It is too pervasive to ignore.

Most compelling as a designer was the potential and illustrations of tapping in to the video game language and experience to direct (or redirect) behavior and understanding. It is obviously a powerful segment of the digital environment. One that people are not just tapped in to, but dedicated to. It is a resource and a medium from which designers (of non gaming environments) can learn much: can borrow, subvert, steal language, behaviors and understanding from.

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PERSPECTIVE PLAY

Tania Allen

There is no denying that video games are a compelling, if not trans-fixative, medium. The entertainment industry as a whole goes through economic downturns with the least impact, and consistently people line up overnight, for days, to buy the latest version of Xbox, or the first tickets for the next event. As a video game developer, designer, and theoretician, Ian Bogost unpacks the meaning and possibility of video games and tools to change behavior and understanding. As designers and communicators, we strive to do many of the same things, and can use some of the core principles of Bogost's argument as we approach our own work. Specifically in Bogost's writings are three core arguments that are most powerful: procedural rhetoric as a tool for persuasion, the possibility for openness and democratization of the rules of play, and materiality and material constraints.

Design is about communication in some form and often persuasion is embedded in this communication. We are attempting to show a perspective, point of view, help an audience see things in a different light. If all we were doing was showcasing what was already commonly known or accepted our work would be far less interesting. And for this reason, Bogost's definition of procedural rhetoric as a new methodology for persuasion is particularly exciting to consider, and something that, while starting to be more prevalent as a design methodology, is still a relatively new concept. The tradition of design has been in storytelling, by verbal or visual means.

Bogost defines procedural rhetoric as "the practice of using processes persuasively...Procedural rhetoric is a general name for the practice of authoring arguments through processes...[It] entails persuasion—to change

opinion or action—to convey ideas effectively...its arguments are made not through the construction of words or images, but through the authorship of rules of behavior, the construction of dynamic models” (Bogost 28).

I would like to augment this definition with bits and pieces of some of Bogost’s other claims about the power of the video game, which makes it more relevant for designers of artifacts not specifically game or digitally oriented. Procedural rhetoric is the ability for users to experience and understand a persuasive argument by being able to walk through the idea first-hand. Not unlike a simulation or role-playing, procedural rhetoric does not explain or show an argument, but sets up conditions for a persuasive argument that the audience (or user) can control. Defining procedural rhetoric in this way likens it to some of the earlier ‘open-work’ theory. In his essay “The Poetics of the Open Work,” Umberto Eco quotes composer Henri Posseur’s observation of the open work as “tend[ing] to encourage ‘acts of conscious freedom on the part of the performer and place him at the focal point of a network of limitless interrelations, among which he chooses to set up his own form without being influenced by an external necessity which definitively prescribes the organization of the work in hand” (Eco 23). The fusion of procedural rhetoric and the notion of the open work, affords possibilities for design and communication that are less powerful separately.

But, it is also important to consider the procedure itself. Some of the examples in Bogost’s book (like the McDonalds game) walk through the complex procedure of being a CEO/decision maker at McDonalds. The choices that are made are as much moral choices as they are economic and procedural ones (procedural in this case meaning the procedure of the company). This is the same sort of procedural rhetoric that I would argue is at play in most of the violent war games that kids play. Sure, you’re walking them through the procedure of being a McDonalds CEO, and sure, you’re making a statement about the kinds of decisions that they have to make—the compromises of morality and ethics that they are engaging in. But, if the game/experience is to be persuasive, shouldn’t the rhetoric afford the alternative? Isn’t that the real power of the procedural rhetoric—to show what’s “wrong” and offer the ability to see what the alternative case could be?

This is not meant to be a critique of those games/experiences that are not doing that. The McDonalds game is interesting in its outline of the current condition. Its ability to allow the ‘player’ to play out the moral and ethical dilemmas facing a big company makes the statement about what decisions current CEOs are forced to confront, and where current priorities lie. It is meant to be a critique of current processes, and potentially call out the irony and misalignment of goals and methods. But I would argue that this critique is more powerful when the alternative is also played out. When the players themselves can choose to go about playing the game differently, and their own moral and ethical standpoints can be investigated. Then, they can understand the implications, depth, and complexities that are at play in any given structure or scenario. Rather than take on the persona of a decision-maker working within the existing conditions, what if the player was ability to completely subvert those? If that were possible, then they could begin to understand the complexity of the decision-making process.

But, as Bogost also illustrates, this is somewhat different than the ability for the user to simply raise objections, or change the rules of play. And, this is also where, as designers attempting to persuade, we might detour from the original notion of the open work—because there is a point. The author of the persuasive game has a particular message to communicate. But, the way in which that is done can leave open the possibility for understanding that perspective in a richer way. For example, what if the decision-making process regarding the vote to go to war was handled differently? What if, rather than simply voting for war, you had to also vote, individually, for those troops who were going to be sent to war? How would that change the method and understanding of the decision that you were making? There is a point here. The point is that decisions are weighty—that when you are making a decision, you are implicating others in the outcomes of that process. But, the point is still open. This is an extreme example, but I think is interesting to consider as an example of procedural rhetoric outside of the gaming environment.

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CADY BEAN-SMITH

RECONSIDERING INTERFACE NORMS

Cady Bean-Smith

A host of issues were raised in this set of texts that expand and clarify common understandings of interface. In particular, and threaded through all of the readings, was the discussion of the naturalization process of design approaches. That is, how design practices and beliefs make that slow creep past the area of the socially familiar and into the territory of the binding cultural norm. And this is particularly evident in the discussion of the norm in interface design of striving for "simulations of sensible reality, (Manovich 25)" that is the pursuit of the natural or the transparent. This phenomenon has far-reaching and deep implications to how we understand our role as designers and our ability to affect designed experience.

There are a great many designed interfaces, infrastructures, and objects that have been so integrated into society since their introduction that our understanding of these things has shifted to thinking of the designs as naturally occurring and fundamental to our human condition. Our collective memory seems to be short and selective on these accounts—and we fail to recognize the design decisions and evolutions at play and we perceive the circumstances of our experiences as intrinsic. John Thackara points out a pitfall of such transparent design, noting that it can lead to a feeling of loss of control. If we can't identify the source and structure of complex systems around us, then they may feel "too complex to understand, let alone shape or redirect (1)." But, if we understand that we have designed ourselves into many of our problems, instead of being passive victims of circumstance, we might begin the work of parsing out the design moments that have led to current situations, and moreover, start to "design our way out (Thackara 1).

It is not so surprising that users have grown to perceive so much of the current designs language as naturally occurring. There has been a decades long effort on the part of artists, filmmakers, and designers to strive for a convincing level of transparency in their works, in effort to create an audience experience that feels like the "real thing. "We certainly see this as a prevalent goal in interface design. However, it's interesting to consider what we sacrifice when we design interfaces that privilege transparency. What might be gained by not merely looking through an interface, but occasionally and meaningfully, looking at the interface In doing so, we can "appreciate the ways in which it shapes our experience (Bolter and Gromala 27)." Thus, Bolter and Gromala's assertion that an interface should behave both like a mirror and like a window with a controlled "(oscillation) between transparency and reflectivity."

It is important for us, as designers, to acknowledge that there is an historical lineage of the pursuit of transparency, because ironically the historical and cultural origins of this norm have become a bit transparent themselves. Designers need to develop an awareness of this precedence for two reasons. First, so that we might learn from the previous efforts toward this end, in particular the twentieth century modernist ambitions towards transparency, reduction, and the essential. The universal solutions proposed by modernism no longer accommodate the complexities and contexts of current interfaces, but still "the goals of contemporary interface design are ... the same as the goals of the modernist design of the early twentieth century (Bolter and Gromala 38)." Second, once we have exposed the aim for transparency as a "cultural and historical choice" and not an intrinsically superior approach, then we will see that we may elect to work another way (Bolter and Gromala 35). This simple but powerful distinction has broad and deep implications for a profoundly changed character of interface design. It is exciting to think about what new forms may result from an interface design process that is liberated from a historical norm that divorces outcome from conditions and context, and from an accepted truth that, the resulting design should ultimately aim to entirely escape the user's notice. It's as if the parameters for what an interface may be, what it may allow for, and how it may behave will be instantly expanded.

In "Windows and Mirrors" Bolter and Gromala contend that this "myth of transparency" is inaccurate. The notion "that a technology can disappear completely and put the viewer or user in touch with reality (52) is a fallacy.

"Because our culture had believed so strongly and for so long in the myth of transparency, interface designers could rely on it to make their designs compelling to users (Bolter and Gromala 48)." Again and again we see the implementation of this normative approach. The move from written line code to the graphic user interface was an attempt at greater transparency. The advocating by virtual reality enthusiasts to move from the desktop to a virtual reality helmet system was again an effort for transparency. And still, even with our most exciting contemporary multi-touch innovations we see a drive for transparency. How many times did Jeff Han say, "the interface just disappears" during the course of his TED presentation of the multi-touch screen? He reiterated it perhaps more than any other feature of the screen, because to present an interface as entirely transparent is the ultimate design success. Perhaps Han was using this phrase simply as "a way of indicating that the interface [was] easy for a beginner to learn or efficient for an experienced user. But even by this definition, the idea of the natural is not constant, because what is efficient or easy in an interface depends on what the interface is for (Bolter and Gromala 52)." And not only 'what' the design is for, but for whom, where, and to what end? When we pose these questions we expose the trend towards transparency as the constructed convention that it really is. Which further implies that what we conceive of as "natural" or "transparent" is subject to cumulative histories and outside cultural shifts and that this norm can and will change.

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WHAT WE CHOOSE TO SALVAGE

Cady Bean-Smith

When Lunenfeld places the networked computer at the end of a chronological progression of culture-defining technologies (that he begins with the bomb and then moves to the television) he automatically suggests a thoughtful examination of what it means for contemporary technologies to be situated historically. And, for me, it stirs a bigger discussion of what we elect to salvage, what we discard, what we repurpose or reconfigured from previous modes of media production, distribution, and consumption when shaping the emerging new media landscape. Moreover, what are the unique qualities and affordances specific to the networked computer that demand our considered development, curation, and implementation? In her TED talk *Redefining the Dictionary*, Erin McKean expressed her frustrations with current models of online dictionaries which carry on print conventions that make much less sense in a web context, while simultaneously failing to exploit the capabilities (updateability, multi-sourcing, etc.) of the internet. She refers to it as "Victorian design merged with modern propulsion." While McKean is largely talking about the inheritance of previous medias' formal aspects, these chapters of Lunenfeld's upcoming book investigate the ramifications of maintaining pre-existing cultural models and implementing them through contemporary technologies. He calls this insistence that the existing modes are the best modes "capitulationism," but we may also call it inertia, and it's a powerful force to overcome.

Lunenfeld begins by describing the unique quality of the networked computer, that we saw beginning to surface last week in the *Windows and Mirrors* excerpt, as a device that fuses the modes of production, methods of distribution, and the means of reception into a single site. As we emerge from television's decades-long dominant insistence on passive reception and engagement through consumption into a new era defined by the capabilities of the networked computer Lunenfeld notes with disappointment that we have continued to apply outmoded, inherited old-media cultural models to the emerging "new" media. We have taken the least valuable attributes of a tele-visual cultural and perpetuated them through the new networked computer, resulting in an emerging media landscape that is increasingly pervasive, if not intrusive, in our lives. Lunenfeld further contends that

continuing to persist with a passive consumption method of media interaction will result in a high volume of low value content, saying, “the worst excesses of the blogosphere simulated this model, accelerating it into the viral torrent of RSS feeds to mobile phones and “the new” at the click of the browser’s refresh button. (6)” He hopes for a day “when simulation evades the trap of mimicking the worst traits of a medium, and makes the best characteristics and affordances of it available to ever-larger groups of people. (6)” To arrive at this new place he suggests a correction in our current course; a shift towards a “mindfulness in downloading and meaningfulness in uploading” (31) His assertion is that a change toward this model would result in greater participation from users, higher value content available, and a greater quality of media experiences.

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TOWARDS MINDFULNESS

Cady Bean-Smith

Peter Lunenfeld paints a picture of our contemporary society as floating (and at times submerged) in the ceaseless flow of information gushing from the networked computer. He identifies perceptions and patterns of behaviors that we inherited from our historical experiences with television, and have since applied, with unfortunate consequence, to the computer. We too often engage in passive reception of media available on the computer, gorging ourselves on the glut of information. And since this model of reception is based off of television, an older technology with no capabilities to allow for participation or contribution, the stream of information flows overwhelmingly in one direction.

Why and how does a failed, outmoded model continue to proliferate? Lunenfeld points out that "people are always happy to hear that what they are already choosing to do is the best possible strategy (17)." He calls this tendency "capitulationism (17)." Peter Turchi seems to advocate against this very type of capitulation when he writes, "we need to devote ourselves to the ongoing practice of questioning the rules we have found most useful (including those we hear ourselves offering as advice) ... constantly checking for empty routine, thoughtless employment (102)."

One of Lunenfeld's central arguments is that the current computer media consumption framework, that is one of passive consumption of vast quantities, runs contradictory to our very human nature. If we were to, as Turchi suggests, check this model for legitimacy, we would expose that it is in our nature not only to receive, but also to create and share. Moreover, we currently find ourselves suffering from a sickness of receiving too much. He says, "understanding and consuming culture requires great skills (ask anyone who has taught a child to read), but failing to move beyond downloading is to strip oneself of a defining constituent of humanity (10)."

He does offer the potential for another healthier, more sustainable, and dare we say 'natural,' model: better management of what we download, and a commitment to an increased level of uploading. He contends that it is "the job of the critic, and of committed audiences and makers to search for and support mindful downloading and meaningful uploading (25)."

While I discussed the idea of meaning making in the earlier response, I would like to focus here on the notion of mindful downloading. Lunenfeld says, "there are times when focus is called for, and should be summoned; it is this attitude we call mindful. Mindfulness is not so much an innate trait as a learned response to the world (27)." A key word here is "learned," and is exciting to think about how the field of design may engage in process of in creating learning environments, experiences, and strategies that would facilitate and/or mediate conditions supportive of mindful downloading.

When describing the current cultural conditions that demand a response of mindful downloading, Lunenfeld employs the metaphor of public health, and likens our overindulgence in information to diabetes, saying the disease "is to a large extent a disease of plentitude (10)." It is imperative in our era to find ways to manage the quality and quantity of information that demands our attention. Lunenfeld suggests a strategy of 'info-triage' as a "[way] to step outside the plentitude and, at least occasionally, carve out periods of mindful

engagement (32)." "Info-triage functions as a workaround in the engineering or hacking sense. A workaround does not "solve" a problem so much as circumvent it, going around it in order to achieve a more optimal performance (30)." The never-ending stream of data, intricate systems, and complicated content that flows past us "will not be solved so much as managed (30)." This management will take form not only in the development of technological systems, but also in subtle and pronounced shifts in our mental habits and daily practices.

The computer is perceived as both the prototypical efficient work machine and as our greatest asset in our quest to achieve maximum human efficiency. However, there are inherent difficulties in establishing a super-powerful, always-on, global network as the model for human efficiency. We simply are not built that way. So, quickly we begin to see basic problems in attempting to retrofit our internal sense of time and capacity to the turbo pacing and massive volume of the networked computer. Here, though, we see the consideration of affordances surface. While it is undeniable that the networked computer affords us the abilities to do a whole host of activities at an ever increasing rate and the access to people and resources on an unprecedented scope and scale, it is not only worthwhile, but necessary, to consider how the identification of affordances that support mindfulness may result in a redefinition of our relationship to the computer- and beyond that, how we might restructure the quality of our own lives and our connections with others.

It is intriguing to think how the networked computer, with all of its' capabilities of rapid processing may become responsible, in part, for an insistence on deliberation of thought and intentionality in actions. And it is exciting to think how a machine that is characterized by a central quality of speed, may come to inspire a cultural era marked by selective slowness.

The proliferation of ever more opportunities to download is a gift that must be treated with care. "There is no denying the ways in which computers exist in a continuously shifting and fluid blend of text and context. The issue is how to use this fluidity to build meaning, rather than increase distraction.(40)" Could the computer be conceived as a tool to mediate mindfulness as opposed to it's current characterization as the greatest single source of frenzy- a technology to be managed or sometimes simply avoided?

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COLLABORATIVE / CONSOLIDATED PRACTICES (DESIGNER AS RESEARCHER, EDITOR, COHORT...)

Cady Bean-Smith

In *Writing Machines* Katherine Hayles makes some exciting claims for an expansion of what we think of as a critical reading practice, particularly focusing on the inclusion of electronic media and the influence of materiality on the meaning of a work of literature. These assertions did, at the time of publication, call for a somewhat radical reimagining of literary criticism and readership. However, in other respects Hayles stays incredibly faithful to the traditional notions of literature. Specifically, she chooses language and case studies that reinforce the notion of the book as a masterwork, that is, a text that is primarily the product of a singular author's voice.

The characterization of the book as the product of a single auteur's artistic intentions rings false in its refusal to acknowledge the pooled efforts and abilities that brings the book into reality. Katherine Gillieson echoes this sentiment, writing, "The actual content of a book is not a product of the author but of a team: editors, designers, publishers, writers – and there is an element of authorship in all of these roles" (10).

While Hayles does not go far to advocate for a collaborative method of book making in literature, she does acknowledge that the act of participating in the *Mediawork* series has made her aware of the potential for intentional collaboration and the "interaction of verbal and visual components" (Hayles 6). She identifies designer Anne Burdick's work as a voice in dialogue with her own framework and textual contributions. Dieter

Roelstraete insists this characterization is by no means unique to Writing Machines or the Mediawork series. He argues, “By their very nature, books are collaborative efforts in a cultural space that continues to be dominated by individualism, conflated egos, and conflicts of solitary interest of both the side of the artist and critic, collector and curator. A book need not consist of language alone to demonstrate the very idea of dialogue at work – it is (a) dialogue” (Roelstraete 56).

Across the Mediawork series we see evidence of the notion of designer as collaborator at work. If we expand our survey we may also identify another mode of making that further blurs the lines that often firmly delineate disciplinary areas of expertise as designers position themselves to act as writers, editors, curators, and/or publishers. Amongst the caliber of contemporary designers who understand design as a cultural practice there is an emergent trend of designers creating content beyond designed elements, often as the output of a research practice. From the publishing world, one can see this type of practice in the work of the designers/typographers Peter Bilak and Stuart Bailey (editors and contributing writers for Dot Dot Dot magazine). Likewise, a similar practice is seen manifest in Task Newsletter, created by designers Emmet Byrne, Jon Sueda, and Alex DeArmond who say Task “uses design as a perspective, designed objects as evidence of larger systems, and designers as researchers” (tasknewsletter.com). These designers develop a critical stance and make in response to, or as an expansion upon that stance. In this way the roles of critic, writer, and designer are consolidated into a single practice. Notably, these practices are often highly collaborative as well.

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QUESTIONING PRESUPPOSITIONS: MATERIALITY AND THE BOOK

Cady Bean-Smith

There is a prevailing assumption in literary criticism that a book may be reduced down to and evaluated as a mere “text.” Privileging the linguistic element over the material qualities skirts the reality of book production as a collaborative undertaking among writers, editors, designers, printers, and publishers. It reinforces the idea of the writer as a singular author. Moreover, the characterization of a book as a “text” undermines the influential role design plays in guiding the reading and meaning making brought to bear on the work. The true nature of the book is that of an artifact subject to histories, traditions, and contexts. Katherine Gillieson supports this definition, contending that “book design is a form of communication in which visual and linguistic messages combine in a solid form of discourse. An anthropology of book design is possible because books are... products of the development of conventions in craft and construction (just as the written word is a product of conventions in social history)” (10).

The book is not solely a linguistic “text;” it is better thought of as a technology for human communication. Gillieson expands this notion, further contending “the book as a technology is also a product of a cultural system, and it can stimulate or mitigate specific behaviors within it” (12). This technology has qualities of structure, form, and physicality that combine with content to create the meaning of the literary artifact and the experience of the book. In *Writing Machines* Kate Hayles insists, “Literature was never only words, never merely immaterial verbal constructions” (107). Instead, Hayles offers that every work of literature is embodied with materiality. Her definition of materiality is distinct from simple physicality. She identifies it as an emergent property that is revealed as the result of human artistic intention and a set of physical attributes (Hayles 33).

Hayles explores the notion of the book as a “material metaphor,” identifying it as “an artifact whose physical properties and historical usages structure our interactions with it in ways obvious and subtle” (Hayles 22). The shape and attributes of a book are established by thousands of years of structure, appearance, and means of production. Entangled with this established understanding of the book, is our concept of literature. Indeed, for many literary scholars it would seem impossible to strip out the literary from the book. The idea that

the book is the receptacle for human thought, as well as the channel for distribution of literature is, at this point, so normative, that the book itself, as a channel and an artifact, has all but fallen away into invisibility. Here, Hayles would like to shine a light on the physical manifestations of literature, and insist that the visual embodiment of the verbal word is an inextricable quality of the experience of a work of literature.

Embedded in this idea is a powerful notion that the book is not merely a passive receptacle of information into which a single author may deposit their artistic intention and from which the reader may make an unencumbered retrieval. If we instead think of the book as a means for an author to share experience, as opposed to impart their knowledge, and of the book itself as a mediator of experience, we see how the characterization of what a book may be instantly and meaningfully expands. Moreover, if we conceive of reading a book as an experience and probe for what attributes contribute to that experience, we quickly expose the influence of materiality on the overall meaning.

Hayles examines three case studies that stand as hyperbolic examples of the importance of materiality in the book. She argues that what is true for these volumes (*Lexia to Perplexia*, *Humument*, *House of Leaves*) applies, perhaps to a less evident degree, to all works of literature. Does this theory hold up upon closer examination and wider application? For example, it may be easier to recognize the role of materiality in the beautifully bound oversized Atlas with vast expanses of slick heavy paper stock, full color map reproductions, and a rigid hardbound cover with foil stamped typography on the silk spine. The bargain bin “beach read” paper back is often characterized by hundreds of pages of lightweight almost translucent unbleached paper bound in a small dimension, which makes the book conveniently portable. The materiality of this book promotes a certain cognitive state of low investment and relaxation and an attitude towards the artifact itself that allows the reader to disregard and dispose of the book after reading. The overall material impression is that of an ephemeral pleasure, and the reading and meaning of the book are altered accordingly. The importance of materiality is indeed present and found to be very influential on the experience.

An understanding of the book as a communication technology subject to its own materiality, allows us to begin to move beyond presuppositions of literature and arrive at a critical practice that is concerned less with *literature* and more with the *literary*. The literary could work as a broader concept that accounts for physical qualities of books, historical usages, and insist on media specific reading strategies for both the verbal and the visual. A critical perspective that examines meaning reveals that books are distinct beyond their mere textual content.

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FORM AND FUNCTION

Cady Bean-Smith

Ian Bogost describes video games as an “expressive medium” that “represent how real and imagined systems work” (vii). Bogost argues that video games mount arguments through procedural rhetoric, which he defines as “the art of persuasion through rule-based representations and interactions rather than spoken word, writing, images, or moving pictures” (ix). First, we must observe that to some extent the character of the video game representation is due to the central affordances of the computer systems that host these games, namely the computer’s ability to run calculations, process inputs, and configure responses based on set system structures. Video games are procedural environments that appeal to us in part because of these systematic behaviors. However, they also appeal because we understand that we may influence or induce these behaviors. In this way video games are an interactive “environment that is both procedural and participatory” (42). This perception of video games suggests the potential for true agency on the part of the player as well as meaningful responses from the gaming environment. Broader, an investigation of the combination of “procedural and participatory” tactics reveals the prospect for a new standard for sophistication in interaction within and beyond the gaming realm.

To begin with, let us unpack Bogost's description of interactivity a bit. He refers to Janet Murray's description of the pervasive use of the term "interaction" in digital media theory. Interaction can be used to refer to the simplest user inputs met by the most basic of system computations. When we refer to computers as interactive we are often referring to their codified representations and responses. However, Murray points out that the simple act of clicking a mouse is insufficient behavior to elicit "genuine embodied participation in an electronic environment." To achieve this more meaningful level of participation, greater sophistication in interactivity must be attained. This does not simply mean a glut of additional features complicating and clogging the shape of the user experience. "Rather," Bogost contends, "sophisticated interactivity means greater responsiveness, tighter symbolic coupling between user actions and procedural representations" (42).

What factors need to be considered for this tighter incorporation of user actions and representation? At the outset, it is important to expand Bogost's distillation of the user down to their "actions" and acknowledge that the user brings much more to their experience of an interaction than a set of operations. The user is subject to their own cultural histories, past experiences, and constructed understandings. A user has motives, presuppositions, and expectations. Users also have observable patterns of behavior that can be studied and accounted for during design. Coupled with the issue of user attributes is the need for considered procedural representations. Here we have to ask for thoughtfulness and refinement in form making and assignment of interactive behaviors and functions. But the most crucial piece is the integration of these factors. Successful coupling results in a stronger procedural rhetoric, a more sophisticated interactive environment, and ultimately a more satisfying user experience.

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THE NATURE OF THE THING (THAT IS THE THING)

Cady Bean-Smith

Ian Bogost describes video games as an "expressive medium" that "represent how real and imagined systems work" (vii). Bogost argues that video games mount arguments through procedural rhetoric, which he defines as "the art of persuasion through rule-based representations and interactions rather than spoken word, writing, images, or moving pictures" (ix). The character of the video game representation is due to some extent to the central affordances of the computer systems that host these games—namely the computer's ability to run calculations, process inputs, and configure responses based on set system structures. Video games are procedural environments that appeal to us in part because of these systematic behaviors. However, they also appeal because we understand that we may influence or induce these behaviors. In this way, video games are an interactive "environment that is both procedural and participatory" (42). This perception of video games suggests the potential for true agency on the part of the player as well as meaningful responses from the gaming environment. More broadly, an investigation of the combination of "procedural and participatory" tactics reveals the prospect for a new standard for sophistication in interaction within and beyond the gaming realm.

First, unpacking Bogost's definition of interactivity reveals several findings. He refers to Janet Murray's description of the pervasive use of the term "interaction" in digital media theory. Interaction can be used to refer to the simplest user inputs met by the most basic of system computations. When we refer to computers as interactive, we are often referring to their codified representations and responses. However, Murray points out that the simple act of clicking a mouse is insufficient behavior to elicit "genuine embodied participation in an electronic environment." To achieve this more meaningful level of participation, greater sophistication in interactivity must be attained. Sophistication in this context does not simply mean a glut of additional features complicating and clogging the shape of the user experience. "Rather," Bogost contends, "sophisticated interactivity means greater responsiveness, tighter symbolic coupling between user actions and procedural representations" (42).

What factors need to be considered for this tighter incorporation of user actions and representation? At the outset, it is important to expand Bogost's distillation of the user down to their "actions" and acknowledge that the user brings much more to their experience of an interaction than a set of operations. The user is subject to their own cultural histories, past experiences, and constructed understandings. A user has motives, presuppositions, and expectations. Users also have observable patterns of behavior that can be studied and accounted for during design. Coupled with the issue of user attributes is the need for considered procedural representations in interactive design at large. Here we have to ask for thoughtfulness and refinement in form making and assignment of interactive behaviors. We must also consider the ways that interactive media may mount arguments over time or function heuristically. But the most crucial piece is the integration of these factors. Successful coupling of user attributes and interactive representations results in a more sophisticated interactive environment, a more satisfying user experience, and ultimately a more persuasive procedural rhetoric.

Bogost further expounds on his notion of persuasive procedural rhetoric, contending that "procedural rhetorics facilitate dialectical interrogation of process-based claims about how the real-world processes do, could, or should work" (57). Arguments crafted in this fashion can act as a "window onto an underlying structure of a thing." In this way procedural representations describe "the way we understand a social or material practice to function" and can be used to support or challenge these practices and systems (58). One such designed instance of this persuasive rhetoric -- intended to argue in support of a position -- can be found in Bogost's own design practice when he co-created the first-ever presidential campaign game.

In 2003, Bogost co-designed a game for then-presidential candidate Howard Dean. The Howard Dean for Iowa Game was developed with an objective to create a procedural representation of grassroots outreach. The user's clicks trigger behaviors in virtual game characters that simulate a few actual activities involved in canvassing. During the process of playing the game, a feeling of repetition is evoked through a behavioral metaphor that likens the game's repeated clicking action to actually completing the same canvassing actions over and over (e.g. knocking on doors, waving signs, etc.). Procedurally, however, there seems to be a flatness to the methods of user engagement resulting in a fairly shallow understanding of what it means to campaign on behalf of a candidate. For example, "to play the sign-waver minigame, the player positions a supporter near as many passing pedestrians as possible and clicks to wave the sign itself" (138). This procedure seems to insist that the experience of sign waving, as well as the success of the activity, can be described simply as proximity to a high-volume crowd. This seems to be a questionable reductivist representation. There are a number of attributes of experience that could have been elicited by a more sophisticated interactive design successfully coupled to the way we understand the social political practice of canvassing. For example, consider the variety of attitudes amongst the pedestrians that signwavers encounter? Imagine if the game was able to help the player assess pedestrian sentiments towards Howard Dean. Then the player could adjust his or her style of play according to the degree of pedestrian support, opposition, or apathy. The procedural rhetoric of the game would be far stronger, and the experience of game play would reveal something much more nuanced and insightful about the experience of this canvassing tactic. This is not to say that this missed opportunity is an issue of greater articulation over abstraction. It is instead best understood as an instance that could have been enhanced by greater interaction sophistication and a tighter linkage of game behavior to the true character of an actual experience.

We might forgive the simplicity of this game if the explicit purpose was not to inform and persuade "sympathetic citizens to become supporters" (135). The rhetorical stance of the game would arguably been far more convincing if the procedural representation had been more specific. Appealing attributes of the canvassing experience include interpersonal connection, a sense of immediacy to the change one can effect, and the challenge of working on the ground and in the physical environment. These attributes remain conspicuously absent in the gaming environment. More importantly, these characteristics are never invoked during the procedural experience of playing the game over time.

When we measure the success of design by the degree to which it can make visual and experiential "the nature of a thing, the reasons that make it what it is," then we have put in place a powerfully transformative understanding of the discipline (58). In addition, we have begun to describe a new rubric for assessing

effectiveness and persuasion in designed artifacts. A new relational practice replaces the modern notions of the universal user and neutral codified solutions. Instead, context-specific, user-centered design processes result in contingent solutions responsible to underlying social cultural and technological systems. Moreover, these sort of persuasive designs offer not only the potential to illuminate and make legible increasingly complex systems but also “disrupt the state of a situation and reinvent it, wholly anew, under different organizing logic” (58).

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Deanforamerica.com

BROOKE CHORNYAK

SEEKING ANSWERS TO AN ENIGMA

Brooke Chornyak

Defining interface is a journey into uncharted territories down winding roads. How can one define such an enigma as interface? In class it has been referred to as “a common boundary between two portions of matter or space,” for instance the surface tension created between air and water—which is both and neither air or water. This definition poses an extensive and exploratory path that may lead to moments of clarity but also moments of murky haze. In an exploration into the nature, purpose and role of interface I find myself undoubtedly with more questions than any possible answers.

What is an interface? In an immediate response to this question, the majority of individuals imagine a screen, a computer, electronics, pixels, vectors and icons. How could we be expected to disassociate our concept of interface with computers when our lives, our jobs as designers and our culture are intertwined with this machine?

In *The Language of New Media*, Lev Manovich writes that new media consists of two distinct layers—the “cultural layer” and the “computer layer” (Manovich 2002). “Because new media is created on computers, distributed via computers, and stored and archived on computers, the logic of a computer can be expected to significantly influence that traditional cultural logic of media; that is, we may expect that the computer layer will affect the cultural layer” (Manovich 2002). The culture of interface is significantly influenced by its direct association to the computer and technology. I have to ask; does this association hinder designer’s explorations of interface? Without the invention of the computer would we even use the word interface? Is it the computer that facilitates this dialogue?

New media is characterized by variability, as liquid wherein many different versions are created out of one new media object. New media, as we observe in our daily lives, is modular—many parts make up the whole. As designers we have the ability to explore the assembly of these bits and pieces, investigate re-configurations and speculate on how they may make form. In *Windows and Mirrors* Bolter and Gromala suggest that “an effective interface functions as a mirror as well as a window” (Bolter et al. 2003). “The interface should in fact reflect the user, a somewhat different and more complex undertaking” (Bolter et al. 2003). How can we begin to configure bits and pieces to create interfaces that reflect?

Many of the different ways we interact with one another can be improved by design. “The modest design actions we might take to improve the efficiency of information transfer within a network are to create hubs, or add new links, to act as artificial shortcuts between otherwise distant regions” (Thackara 2005). We are regaining a common respect and understanding for what people can do that technology cannot, and designers should and will be providing tools for community organization and collaborations. Interfaces could reshape how we think about interaction, control and power, government, and communication.

For many of us we probably haven't noticed interfaces until the beginning of this class. They have ceased to be transparent and we now see that aspiring to transparency is a wasted endeavor because of the ever changing, ever updating, ever expanding nature of technology. How can we possibly match the speed of this fast moving train? "The pursuit of transparency is endless, because transparency is redefined with each new technology" (Bolter et al. 2003).

In Jay David Bolter and Diane Gromala's *Windows and Mirrors* and Lev Manovich's *The Language of New Media* the formal qualities of interface and interaction are discussed. The two readings present a history of the computer. While I think a firm understanding of how the computer and technology has developed is important, I fail to see how it can help to define interface. What if we throw all understanding of technology, computers etc. out the window, wipe the slate clean? What will this free us to consider, to explore and to redefine?

My investigations into interface have led me to seek the space between, an enigma, an unconventional idea or inspiration to define this object. If interface is a condition of contact what types of human behavior, experience and work might lead us to a definition, or new insight? Thackara's *In The Bubble* led me to think about the possibility of interface as a tool for social change and improvement. "To do things differently we need to perceive things differently" (Thackara 2005). An interesting exploration into the perception of everyday work led me to investigating different communities and their values and philosophy surrounding work. One community in particular, the Shakers, a protestant religious denomination originated in the mid eighteenth century. Shakers established beliefs that generated a unique American cultural history and subsequently inspired many modern fields. One of the major attributes of the Shakers was to build what they designed with care, believing that making something well was in itself, an act of prayer. They never fashioned items with elaborate details or extra decorations, but only made things for their intended uses. Our country has changed since the Shakers first put their philosophies into action. With every new technology we see and live in an increasingly complex and uncontrollable world. New technology always has expected and unexpected consequences. For me technology fails to have a lasting impression, yet what is most memorable, poignant and enduring is that technology which benefits both the creator and humankind. Thackara writes about shifting our focus of innovation in our work to innovation in our everyday life. We have plenty of technologies unlike the Shakers that have not been thought through which have frivolous or meaningless uses. What if we adopted the reasoning of Shakers, how unfamiliar our world would be?

I think we should and have to look at an interface from every possible angle. We need to consider every possible function or purpose and we are compelled to unravel how and why designers are creating interfaces. Only from an extensive exploration can we begin to know what an interface is and is not.

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MINDFUL UP/DOWNLOADING

Brooke Chornyak

The computer, a common device in all of our lives has unimaginable capacity to shape and form society. A majority of us however, lack the insight into the machine's potential and into their own. With the advent of the computer we were given a tool, able to produce, distribute and receive. Peter Lunenfeld believes that this machine offers immeasurable possibility for creation. "it is the 21st century's cultural machine."

As operators we are engaged in a secret war between uploading and downloading. Lunenfeld writes, "the outcome will shape our collective future." He postulates American's are unmindfully using their computers uploading occasionally but mostly downloading nothing of substance or contribution to society. Half of the reason for our uncontrolled downloading habits is the result of a consumption problem; we over consume food,

products and entertainment without any thought to the content we are ingesting or the consequences. Our computer behavior has been shaped by the television, which is a narrative form of entertainment, and so our computer use is similar. Not only is the computer narrative entertainment but also it has a built in capacity to communicate and shop simultaneously. The author writes that our current use "creates habits of mind and modes of consumption that lead to cultural diabetes".

The first tentative steps towards winning the war would be to questions what type of culture would we like to create in the 21st century? Innovation is possible if we have the skills to question the meaning of what we are uploading and what we are consuming or downloading. What computer users produce is a mess of unfinished partial products and constant brief communications; current users feel the need to broadcast where they are and what they are doing. Through the act of questioning meaning in content and its contribution to culture user ultimately will create a hierarchy of meaning. Meaningful uploading involves "work uploaded into the world ought to have enough of an affordance to connect with other elements of the network to add to larger questions rather than simply shimmering there as nodes in the distraction"

Mindfulness can also be found in the growth of practices similar to Gestalt principals of figure ground relationship. Being able to ask if an image has greater dimensionality or two sides automatically allows users to apply value. Lunenfeld writes that this realization will trigger what he calls "The Pop". This pop has happened in the past, Freud's book *Interpretation of Dreams*, caused a new relationship with the self, suddenly people became aware of the conscious and unconscious. "After the pop, the new relationship takes on the mantle of "common sense", of natural perception and transcendent truth."

Not all our activities and behaviors with computers are negative, much can be drawn out of what has been and is currently happening online, peer to peer networking, file sharing, accessibility to dense amounts of information and many other fascinating complex user interactions. Presently we should be developing useful organizational tools for communities online and offline that take advantage of the networking that has happened so far. The author does give his readers hope in stating that the current digital system is flexible and has the ability to change rapidly. Proposing techniques of "Info-triage" a workaround to deal with information overload, curation of content, and new models for the analysis and critique of current media will ultimately affect computer use.

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THE NEED TO CREATE SUPERFLUOUS MATERIAL GOODS

Brooke Chornyak

Computers are amazing machines that allow for a continuously shift and flow of information, media, and art. Lunenfeld's main claim in "The Secret War Between Uploading and Downloading" is that humankind is uncritically consuming. We are downloading in far greater quantities than we are uploading. To make matters worse what little we do upload does not create affordances to connect with the larger cultural network. As operators of the computer we are engaged in a secret war between uploading and downloading and "the outcome will shape our collective future" (Lunenfeld 2009).

The television has condition our current behavior of over consumption and under production. We have been lulled into a passive state even though our creative passivity is not a natural state of mind. If we take a look back into an era before television many had to take part in the creation of entertainment, through dance, art and spoken word. Both telling and creating stories was a means of creation and recreation. Sharing knowledge as well as history created affordances and bonds among community members. Lunenfeld argues that we have an innate desire to make and then to share our creations. It is not difficult to observe the world and see this evidence.

I'd like now to discuss the evidence Lunenfeld presents to support his claim that as humans we have a need to create. In the opening paragraphs the author writes, "Humans are unique in their capacity not only to make

tools, but to then turn around and use them to create superfluous material goods — painting, sculpture and architecture - and superfluous experiences - music, stories, religion, philosophy. Of course, it is precisely the superfluous that then comes to define human culture and ultimately what it is to be human. Understanding and consuming culture requires great skills but failing to move beyond downloading is to strip oneself of a defining consistent of humanity" (Lunenfeld 2009).

One such creation is that of fan based media. Involvement in media creation such as this Lunenfeld argues is not as “sticky” as the type of media he hopes that we will someday make. But I would argue that it is creation nonetheless and Lunenfeld might need to distinguish that media creation for play or hobbies is a significant part of culture creation. An article written in the *New York Times* by Kevin Kelly, writes, “ cheap and universal tools of creation (megapixel phone cameras, Photoshop, iMovie) are quickly reducing the effort needed to create moving images. To the utter bafflement of the experts who confidently claimed that viewers would never rise from their reclining passivity, tens of millions of people have in recent years spent uncountable hours making movies of their own design. Having a ready and reachable audience of potential millions helps, as does the choice of multiple modes in which to create. Because of new consumer gadgets, community training, peer encouragement and fiendishly clever software, the ease of making video now approaches the ease of writing” (Kelly 2008).

A significant portion of uploading is in a state of unfinished, partial production. Online community collecting has increased significantly, collecting of self-made videos, images, written documents and so forth. Our cultural archive is overflowing, as it never has before and the libraries of the past pale in comparison to the amount of media we currently and will continue to collect online. The growth of online community collecting is what Lunenfeld categorizes as “continuous partial production” (Lunenfeld 2009) it is purely for personal consumption. Yet, this partial production takes time and effort. What if the population was putting its efforts into productions that connected and benefited culture?

What Lunenfeld does propose is a new model “to harness the two defining modes of networked computing, simulation and participation. In order to add stickiness to the culture, one way to increase stickiness is to use the computer as a way to share and remixed what a singular author has uploaded” (Lunenfeld 2009). Freeing ourselves from the old model of artist and viewer will lead to the new idea that artist and viewer are one in the same then we can see how all work uploaded is essentially unfinished. Lunenfeld believes that an economy of unfinished shifts us from a pure consumption oriented model to one that mixes production and consumption. That emphasis on production is where we want our technology to bend.

The DIY culture played an important role in the creation of affordances for the construction of our memories and new tools were developed. Lunenfeld writes that the expansion of personal archives can lead to increased opportunities for collaborative, co-creation and multi-authorship. Flickr, Wikipedia, Jumpcut and communal Blogs are the cultural websites that lead us to a future in which we could all potentially contribute to the creation of things and systems vastly larger than ourselves.

There is a negative aspect however of co-creation on a large scale. The group automatically has to operate on a lower level of intelligence. “But what is the point of developing these machines, networks, and affordances for the delivery and publishing of media if we don't also develop some corresponding sophistication in their content and well as their use? Their are limits to what mass culture can talk about, levels of subtlety, of language, and of thought and thoughtfulness” (Lunenfeld 2009). Designers can't leave the masses to their own accord and so our role becomes evident. Our task is to understand how to curate, create structures for managing the complexity that will be uploaded, establish patterns and finally to create meaning out mess. “ The marshalling of culture, the mindful juxtaposition of ideas, images, sounds, and interactions to create more that the sum of their parts.”

This is what I think “The Secret War” is lacking. Lunenfeld discussed how to control our media intake and change our habits into more meaningful downloading but he fails to ever fully discuss how we can teach ourselves or reprogram our behavior to one that might come more naturally.

Designers can shape these affordances online for co-creation to happen. We can ask appropriate questions, how do we change our behavior and what structures should we be discussing and designing for the future? *In the Bubble* a book by John Thacker discusses the role of the designer can play the betterment of society. The author

proposes that humans have designed their way into difficult situations, so they can design their way out. We are all designers, and we all must take a role in shaping technology for the future. Human kind has altered its behavior so that it is detrimental however if Thackera's logic is correct, people can alter that behavior once again from over consumption to beneficial creation.

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AN IMITATION

Brooke Chornyak

Remember when Dolly the sheep made headlines in 1996. She was the first mammal cloned using a cell taken from a mammary gland. Cloning in biology is the process of producing populations of genetically identical individuals. The clones however are not quite the same; this is a common misconception that the act produces exact copies. Clones have the same nuclear DNA but different mitochondrial DNA. As we digitized our world we simulated behaviors and materiality of the analog / printed environment assuming that like Dolly, the materiality of the works would be identical. N. Katherine Hayles states, "As the vibrant new field of electronic textuality flexes its muscle, it is becoming overwhelmingly clear that we can no longer afford to ignore the material basis of literary production" (Hayles 2002).

Printed works just like clones change when they are reproduced into electronic documents. As these literary texts were digitized the authors adopted the customary conventions of print, simulating the look, feel and behavior we employ with printed books. Media engages in an act Hayles writes as "recursive" an imitation of each other; "incorporating aspects of competing media into themselves while simultaneously flaunting the advantages their own forms of mediation offer. (Hayles 2002). Can we avoid recursive media, is it really detrimental, does it hold back conversations and thinking on literary materiality?

Hayles poses the question in her book "What would it mean to talk about materiality in an era in which simulations are everywhere around us?" I believe it would mean a reexamination of current conventions and would lead, hopefully to new and exciting interfaces. We can't fault the current digital texts because the creation of new technologies allows for instant remediation. Remediation occurs quickly as technologies become widespread only allowing for thoughtful reflection after the fact. We have been fortunate in our lifetime to witness the rise of the computer as Peter Lunenfeld states as the "cultural machine". Before computer technology the printed word and the book was the dominant material for text. But technology and conventions did exist before the invention of the press, Hayles writes "We are not generally accustomed to think of a book as a material metaphor, but in fact it is an artifact whose physical properties and historical usages structured our interactions with it in ways obvious and subtle" (Hayles 2002). The computer has done the same, we can't break with convention immediately yet we can be urged to reexamine what materials and behaviors are appropriate for each technology.

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SHARED KNOWLEDGE

Brooke Chornyak

Newspapers are failing. In the last year there has been a significant decline in advertisement sales and newspaper readership, forcing the transition of printed media into digital formats. Are these journalists and editors ready to create and navigate a new form of digital journalism? The general public does not give much thought to Internet's

materiality; its has ceased to become a reflexive activity and transitioned it into an experiential one, much like how we pick up a book and fail to notice the paper, the typography and so forth. The World Wide Web, the large set of interlinked hypertext documents is where people now seeks and first encounters literature. Stephanie Strickland, a digital poet, writes, "literary life has actually moved to the Internet, or to the Web, with the huge profusion of blogs, zines, and the like" (Elkstrand 2009).

Writing Machines, written by Katherine Hayles and designed by Anne Burdick, explores the materiality of literature in print and electronic formats. Currently materiality is not considered and so books translated into digital versions simulate print behaviors. For example, the humanities tend to assume the screen having the same functionality of the printed pages of a book. To Hayles, this assumption is a large mistake. The screen erases the materiality of a printed book and so the text ceases to be a book but something completely different. "If books are seen only as immaterial verbal constructs, the rich potential of this interplay is lost. Literary critics have long accepted that form is content and content is form. Materiality is content, and content is materiality" (Hayles 2002). Consider materiality will ultimately change the mental landscape of literature allowing writers to re-think the current perspective. Electronic texts can stimulate scholars to read old text in new ways and seek out new text that cannot be adequately understood without electronic media. "The physical form of the literary artifact always affects what the words and other semiotic components mean. Literary works that strengthen, foreground, and thematize the connections between themselves as material artifacts and the imaginative realm of verbal/semiotic signifiers they open a window on the larger connections that unite literature to its material forms" (Hayles 2002). As literary texts are remade and in a sense rewritten for electronic formats the act of change assumes that print conventions will not be applied. These conventions are examined and hopefully dismissed so new practices can be developed for electronic documents.

Just as Hayles collaborated with Burdick the literati should find it essential to establish collaborative relationships with designers, computer scientists and programmers. Most authors and editors do not consider materiality because they have not been trained to do so. Graphic Designers, however have been educated to regard, scrutinize, and make provision for materiality. It is with this profession's knowledge that the literati will be capable navigating the transition into digital print. Without designers efforts a user will notice the difficulty in viewing the outdated digital work fabricated by amateurs.

The technology or platforms, which ultimately determines what can and cannot be designed needs to be regarded. The time sensitive nature of technology will demand an investigation into which platforms these works can exist on, the shelf life, restraints and restrictions. Electronic media can also encounter difficulties when it fails to be designed to withstand the ever-changing digital aesthetics. Exploring Hayles's literary examples, Talan Memmott's work *Lexia to Perplexia*, Mark Z. Danielewski's *House of Leaves* and the Electronic Literature Collection it's difficult to see beyond the dated aesthetics and functionality.

For designers to consider materiality they must consider touch, and touch inherently means user interaction. If the computer has become our "cultural machine" then the literati should examine and respond to people and their interactions with digital interfaces. The computer has and will have enormous effects on writing and on everything that conditions writing. If Hayles states materiality matters she should also promote tandem research into user behavior. What is the relationship between the computer, language and the reader, how does someone interact with literary works, how do they want to interact, what will they receive from those interactions?

That knowledge could be found in collaboration, working together toward the common goal of creating an artifact. Watson & Crick, Lewis and Clark, Rogers and Hammerstein, the great collaborations through our history are representative of what can happen when individuals with diverse skills come together. *Writing Machines* was a collaboration between author Hayles and designer Anne Burdick who created the physicality of the book's thesis.

Exploring the materiality of literature without the knowledge or sensibilities of designers who are professional creators of the visual rhetoric of online media can be disastrous. Time and effort exuded by authors might result in frustrating end results that are misinterpreted or disregarded by readers. As designers we conduct investigations into human behavior with digital media, how users read, what they can and can't understand. We

should not be constrained however in thinking that all online literature should be readable or even user friendly, yet through these investigations designers possess a wealth of understanding and knowledge.

Interface is a complex condition of contact between the user and the materiality of the object. So the object in context according to our class discussion creates the conditions for an experience when users interact with/in it. That very experience is what Hayles is championing in order to find and then gain a broader definition of reading, writing and making of books. Literature shares experiences with other people, and through those experiences knowledge is gained. A closer look at Hayles's argument the design community perhaps can extract a set of principals, which might influence our work and understanding of interface. Principals might include designed structures and affordances for inclusion, tools for facilitating collaboration, connectivity, and shared knowledge.

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THROUGH THE LENS OF VIDEO GAMES

Brooke Chornyak

Video Games have never interested me. In my youth the partial reinforcements given in digital games were less enticing than the public pool or the neighbors backyard. I remember watching Vanna White's pixelated hands revealed the selected letter in Wheel of Fortune on our late 80's Packard Bell PC. However, my time was never spent bathing in the glow of the screen. The millennial generation, which I am a member, first encountered digital interfaces through video games such as Pong, Pac Man, Duck Hunt, Super Mario Brothers and Sonic The Hedgehog. The Atari Video Computer System was the first successful cartridge – based videogame console, which entered the American home, in the late 70's decades ahead of the networked computer system. These games set precedence for how my generation comprehends and expects digital interfaces to behave.

The procedural rhetoric shaped our young minds and taught us a form of media literacy and media addiction. Gaming devices and digital technologies surround us, yet they lack qualities of human-to-human interaction. Technology has the potential to evolve into a more complex yet natural relationship. Though the scrutiny of gaming platforms, their constraints, failures and successes we can project a trajectory for digital interface and computer technology.

Ian Bogost states that numerous studies of digital media, the form and functions of the interfaces has been done. However these studies "seldom delved into the code of these programs, and they have almost never investigated that platforms that are the basis of creative computing." Nick Montfort and Ian Bogost, authors of *Racing the Beam: The Atari Video Computer System* claim that only through an investigation of the hardware and software of platforms can we "reveal the relationships between these systems and creativity, design, expression, and culture."

What types of relationships will this analysis reveal? How can the author's findings inform our understanding of interface and all its possibilities? Do designers consciously consider his or her platform choice the limitations and the affordances when designing an interface? For many we never see beyond the interface into the machinery, the one's and zeros, the capabilities of the machines we are interacting with. Interfaces are enticing and engaging and so have been designed to make the platform invisible.

The current platforms have made significant progress into new forms of user interaction. The *Wii*, a seventh-generation console, was designed with a wireless controller, which can be used as a handheld pointing device and detect movement in three dimensions, the system is also linked with the Internet. Video game consoles are now being used by a greater breadth of people and for purposes beyond education and entertainment. Physical therapists use *Wii* games, which require patients to perform body movements similar to traditional therapy exercises.

If the language of video gaming is changing with the invention of new platforms such as the *Wii*, how will these influence the design of the interface? What might it mean to have a more gestural language added to surfing the web? Apple computer has implemented multi-touch track pads in laptops as well as multi-touch gestural behaviors when interacting with the *iphone*. These interactive behaviors I believe are easily adopted because it's how we operate in the physical world. There is no doubt in my mind these are the reasons for the *Wii*'s widespread use and praise.

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VIRTUAL WORLD / PHYSICAL WORLD: TOWARDS A NEW COMPUTER LANGUAGE

Brooke Chornyak

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The procedural rhetoric shaped our young minds and taught us a form of media literacy and media addiction. Gaming devices and digital technologies surround us, yet they lack qualities of human-to-human interaction. Technology has the potential to evolve into a more complex yet natural relationship. Though the scrutiny of gaming platforms, their constraints, failures and successes we can project a trajectory for digital interface and computer technology.

Ian Bogost states that numerous studies of digital media have been done; however the studies "seldom delved into the code of these programs, and they have almost never investigated the platforms that are the basis of creative computing" (Bogost, et al. 2009). In Nick Montfort's and Ian Bogost's excerpt from *Racing the Beam: The Atari Video Computer System* the author's claim that only through an investigation of hardware and software of platforms can we "reveal the relationships between these systems and creativity, design, expression, and culture."

Gaming platforms have evolved from elaborate keyboards to simplistic control devices; most common were the handheld units, which had only a joystick and the essential buttons. The earliest gesture recognition gaming device offered to the public was the Nintendo Power Glove and the Sony EyeToy. The Power Glove for the NES released in 1989 was the first peripheral interface controller to recreate human hand movements on a television or computer screen. The EyeToy released in 1992 used computer vision and gesture recognition to process images taken by the camera; players interacted with games using motion, color detection and sound, through a built-in microphone.

The current platforms have made significant progress into new forms of user interaction. Nintendo has been exploring touch screen interactivity since 2004 when they released the DS platform. The *Wii* followed shortly after in 2005. The *Wii*, was designed with a wireless controller, which can be used as a handheld pointing device and detect movement in three dimensions.

In *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency*, Jay David Bolter and Diane Gromala investigate digital art which they believe can be considered the purest form of experimental design; the examples in this book show that design need not deliver information and then erase

itself from our consciousness but can engage us in an interactive experience of form and content, helping designers to establish “a rhythm between transparency—made possible by mastery of techniques—and reflection—as the medium itself helps us understand our experience of it” (Bolter, et al. 2003). I would argue that gaming platforms are toys and a form of entertainment and so creators are less restrained in what they design and ultimately produced. They are a form of experimental design that informs the design of computer technology and interface. Both Microsoft and Apple have introduced gestural recognition into their products. Microsoft Surface, a computing platform that uses touch and gesture to access content, is currently only available commercially but can be expected to enter our homes shortly. Apple has also implemented multi-touch track pads in the MacBook laptops and iPhone. If we compare these technological advancements to that of the gaming platform the computer has been slow to adopt new forms of interaction.

Should the population expect future interface interaction to be gestural? In physics interface is the surface that forms “a common boundary between two portions of matter or space” for instance the surface tension created between air and water – which is both and neither air and water. This definition recognizes interface in my opinion as an invisible. Gesture recognition enables humans to interface with the machine and interact naturally without any mechanical devices. Using the concept of gesture recognition, it is possible to point a finger at the computer screen so that the cursor will move accordingly. Potentially this interaction could make conventional input devices such as mouse, keyboards and even touch-screens redundant, welcoming simplicity in design and decreased production. Reading further into *Windows and Mirrors*, the authors argue that “every digital artifact needs to at times to be visible to its user; it needs to be both a window and a mirror.” (Bolter, et al. 2003). In contrast to this opinion, the development of a gestural language for interface will cease to be a window and only exist as a mirror, which is the state digital technologies should exist in. Users should be free from the restraints and mediation devices and begin to feel like they are living in the physical world rather than the digital, virtual one.

Currently several different gestural studies are ongoing, which benefit persons recovering from stroke or those inhibited through disabilities. Explorations include the interface designed to recognize sign language, socially assistive robotics which can assist in patient rehabilitation, directional indication through pointing at the computer, control of the interface through facial gestures and eye tracking, immersive game technology designed to make the game player's experience more interactive or immersive, and affective computing, where technology can identify emotional expression through computer systems.

The possible problems with this language of interaction might stem from the natural complexity of human gesture. Gesturing involves facial expression, hands, a persons’ stance and entire body movement; because gesture is the oldest form of language and might have evolved before or simultaneously with speech, gesture is often in conjunction with speech. As a natural action gestures can be performed voluntarily or unconsciously. Weston LaBarre, an American anthropologist believes that there is no natural language of emotional gesture. He contends that gestures are products of culture, which explains why one gesture may mean two very different things in different cultures. Facial movements, at times, do not always correspond to what is being said by a person. In these cases, gesturing is not meant to supplement words, but may contain a different meaning altogether. Deciphering why and how people use facial and bodily gestures to communicate is a current topic being explored because, while gestures have different meanings in different cultures, they are used by all kinds of people. This phenomenon has left some to ask if there is such thing as a “natural gesture” or if all non-verbal communication is learned in some way. [1]

This being said for computers to begin to understand human body language, human and machine will have to develop a gestural language together. This radical change questions current limited interactions with digital technologies and opens the mind to consider the possibilities. If the need for keyboards and mice are discontinued a persons relationship with a computer could become increasingly liberated. Speculating on the implications of a new gestural language people might come to perform work in an interactive and immersive setting, where sitting at a desk for eight hours could become a habit of the past.

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SIDNEY FRITTS

NEW MEDIA

Sidney Fritts

In *The Language of New Media*, Manovich describes the intertwined history and parallel developments of data processing and mass media technology as the two build toward an inevitable convergence. I found it interesting that while the first actual 'computer' was used to control complex patterns of images on a weaving loom, this was not a primary function until much later in its lifespan—mathematics and engineering dominated much of its early life. It wasn't until the late 1970's that the development of the Graphical User Interface "change[d] the identity of both media and the computer itself" and recast it as "a media synthesizer and manipulator" (25-26). Once media was translated and encoded into a digital format, it was able to be broken into discrete parts (pixel, bytes, etc.), compiled, and reconfigured, while still maintaining its original visual identity. This increase in modularity and malleability has given way to more customizable services and individual experiences, allowing users and designers the freedom to constantly reshape and generate information and interfaces.

Numerical coding and modular structures have allowed automation of some actions to take place. This is particularly evident in the realm of gaming, which has evolved over the past few decades to include Artificial Intelligence Engines within various programs. Although artificial intelligence has been a long dream of technologists and science fiction writers, it is not yet sophisticated enough to mimic human intelligence. Thus far, designers and programmers have been able to effectively simulate it and in doing so have been able to give an interface perceived awareness of user actions and intentions.

Oscillating Interfaces

In *Windows and Mirrors*, Jay David Bolter and Diane Gromala state, "good designs oscillate between hiding and revealing themselves" (68). I believe we could also correlate this assertion to allowing users to appropriately move from experiential to reflective cognitive states. In this sense, design becomes more about the intended activity, attempting to balance user needs with the inherent variables that might detract from their experience. While it is important for users to become immersed in their activity, an interface can become a nuisance when it sacrifices usability for transparency.

The GUI 'desktop' metaphor has defined the basic computer interface for nearly 30 years and there have been no successful attempts to replace this metaphor since it came into existence. While some systems, such as Apple's Mac, have done quite well adapting this interface for increasingly complex hardware and software, their main successes lie in the foundational ability to know when and where to break consistency for clarity. The Windows system, by comparison, displays the effects of designers haphazardly trying to emulate others. Bolter and Gromala run through a number of examples from the Windows OS that fall short where the Mac succeeds. This example emphasizes the importance that designers pay attention to detail in order to shape the subtle nuances of an interface that can then set it apart from others through the creation of a somewhat transparent but also reflective user experience.

Recently a number of devices (iphone, wii, etc...) have been released or demonstrated that incorporate such things as gestures and touch into interfaces. The creation of such devices begins to break down the traditional window metaphor because the user is no longer in the position of a mere observer. There are inherent

lessons from the current generation of interfaces that will be important guides as designers respond to increasingly complex systems and solutions.

Do the Social

Social capital is increasingly important not only within the individual but also within the cultural sphere as different nations come to try to secure their place in the world. Thackara reiterates the importance of social ties within an individual's community, saying "social fragmentation and personal isolation are among the more damaging consequences of the way we organize modern time" (123). This is one of the more drastic consequences of increased reliance on services instead of community to offer basic assistance. An interesting example that he cites is that of the decentralized hospital. By repositioning the hospital as a hub for medical activity, patients would theoretically get better care, faster service, more options, and less red tape, as opposed to what they might find in the current bloated hospital system.

This is all happening while our population continues to live longer and designers seem to be overlooking the need and market for technology that assist the elderly. An example from recent history that was originally aimed at the elderly but found widespread acclaim was the line of OXO products.

Social ties have been addressed across various interfaces more and more recently, resulting in the creation of tools to be used within the social arena. How will these continue to develop as new input technologies enter the field? Faster connections? Increasingly portable devices?

Mind the Context

Thackara discusses the "sensitivity to context, to relationships, and to consequences" which is key to moving from "mindless development to design mindfulness." As he says, "If we can design into difficulty, we can design our way out." The term "design mindfulness" describes a new role for design that is both context sensitive as well as accountable for its consequences, while also being user-centered, culturally centered emphasizes the importance of contextual relation to social needs, not just within the context of the individual user, but also within the context of the environment and creation process.

I agree that as users are given increasingly customizable experiences, along with the tools needed to create these experiences, the contextual environment of individual users will become increasingly important. In failing to account for what preconceptions, history, and curiosities an individual brings to the table the completed design won't be the experience intended.

As designers we need to develop systems that allow for increasing modularity and complexity, while also trying to strike a balance between transparency and reflection. If we can do this while also building the tools for humans to build and maintain the social structures that we need to flourish, then I believe we as designers are on the right track.

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PETER LUNENFELD

Sidney Fritts

After reading the excerpt from Peter Lunenfeld's upcoming 'monograph' and looking over some of his other published pieces I am genuinely excited and looking forward to hearing him elaborate on some of his ideas while directing it towards designers working in the media machine of the 21st century and shaping user experiences.

The rough draft of *The Secret War* did a nice job of bridging some of the ground previously covered in the writings of Thackara, Manovich, and Jenkins. By analyzing the rise of the computer as a medium and the lack of initiative by the majority of users to take advantage of its production capabilities Lunenfeld charges designers

with a clear task; Design useful tools that allow and encourage meaningful (a term that he constantly refuses to define) production and uploading.

He began by comparing the bomb, television and the computer, all of which have effected the world in more ways than were expected. Unfortunately with the introduction of the television, affordable automobiles and the suburban culture our natural tendencies to gather as a community suffered. This is in sharp contrast to the previous excitement for the cinema, which actually brought people together. Following in the habits adopted by television, we have used the computer as a download only machine, one that is consumption driven and in the process has perpetuated our cultural diabetes.

As designers working with the '21st century machine' its important to understand that by reducing all media to the same generic bits and bytes we have the option to mindfully create new context with nearly any type of content. This unfortunately rarely happens. Instead we are hit with arbitrary and random bits of hypertext that amounts to nothing but mindless information and constant partial attention. While some services have tried to remedy this with aggregators and such, they remove some of the serendipitous moments from the experience. He introduces the term 'unfinish', which he defines as "things are constantly incomplete, open to revision, and encourages endless tweaking." I believe that "An economy of unfinish shifts us from a pure consumption-oriented model to one that mixes production and consumption." But will that always create more meaningful content?

In the third chapter Lunenfeld brings up some interesting ideas about the acceleration of nostalgia. Specifically the 'I Love Lucy' example that discusses the impact of the television in the home and how it has created false nostalgia for decades which individuals didn't even live through but only watched them through the lens of nick-at-night. This leads to inauthentic aesthetic form and can be seen in iterations of Punk design and also in fashion as the need for in depth research has removed much of what might have inspired original reinterpretations.

Through his book excerpt and the online article "Media Design and the Media Deficit" I believe that while peter is skeptical of the machines, media and tools we have made and currently use he is hopeful. Hopeful that the computer will rise as a tool that can re-assemble the atomized culture into communities. Communities that can use the vast knowledge and processing power to shape our future to an ideal we actually want to inhabit that includes meaning and mindfulness.

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INFLUENCING MEANINGFUL MAKING THROUGH INTERFACE

Sidney Fritts

I have enjoyed my introduction to the theories and opinions of Peter Lunenfeld through his unpublished manuscript *The Secret War Between Downloading and Uploading* and his lecture. His main argument can be summarized by "The computer is the first media machine that serves as the mode of production (you can make stuff), the means of distribution (you can upload stuff to the network), and the site of reception (you can download stuff and interact with it)" (Lunenfeld 5) and it is time for use to move past the habits of older media technology, specifically television, and move towards a society that balances consumption and production.

While our culture has been accustomed to consuming/downloading we are slowly and reluctantly moving into an age of exponential increased production and contribution, as the means of content creation has been made available to the masses. Designers have a large role to play creating the tools for individuals to create original content and mindful contributions to culture. Lunenfeld's inability to concede to value systems that lie outside of his own and appreciate that the act of making, specifically in groups, is inherently meaningful is shortsighted. Overall his discussion has raised three strong reactions that I have been deliberating on over the past few weeks.

Defining Meaningful and Mindful

Much of Lunenfeld's argument hinges on the application of meaningful and mindful activity with our cultural devices. By refusing to explicitly define what he means by these terms his discussion is open to casual subjective interpretation that can be bent by any value set at any given time. Lunenfeld restricts his discussion to the United States as he admits that he has little understanding of what another countries population would find meaningful. It is presumptuous to believe you can understand and define meaning for continually splintering niche audiences in American society today outside of your own. The closest definition of mindful our class discussions have produced is something along the lines of 'conscientious' participation in culture. The term culture in itself has become confused as influence continues to alternate between bottom-up and top down. While there could be an argument made there is a pop or majority culture, one of the greatest benefits of the digital network has been the rise of smaller like-minded communities that share a common set of values. What might be one mans "High Fructose Corn Syrup" might be another mans meaningful artifact, or at least inspiration to create a meaningful piece of media.

Making Has Meaning

Lunenfeld makes a clear argument that we, as humans have an innate need to build, construct, and contribute to culture at large. Individuals do not deliberately create and contribute meaningless content. The act of making in itself is meaningful, particularly when it occurs in the context of a group. John Thackara included an entire chapter on the importance of conviviality within our culture in his book *In the Bubble*. Group creation has the potential to reinvigorate our sense of community and can be easily accomplished with a networked computer. There seems to be some tension along Thackara's concepts and Lunenfeld's argument when it comes down to a quantity versus quality debate. Is it more valuable for a larger number of individuals to participate in something that could be considered mindless like the publics participation in Snakes on a Plane, or for a smaller number of professionals dedicated to making meaningful cinema? Other authors such as Henry Jenkins of *Convergence Culture* have commended and praised the rise of fan content creation and other works that flourish in these situations. This type of content seems destined to fall into Lunenfeld's mindless category. As designers we are the torch bears of the process and the value of the journey. There is something to be said for the value of social activity, interaction and contribution that isn't evident in the final artifact. Perhaps as we are culling through various cultural products we have to become more aware of the means of production as opposed to the antiquated notion of a final artifact. Luckily these networked tools provide us with a number of opportunities to trace the lineage of an artifact.

Designing Tools

It is a general consensus that designers are moving towards designing tools for individuals that allow increased production, contribution and control over the media they consume. Lunenfeld questioned how our design decisions could promote mindful and meaningful behaviors. By relinquishing control through designing open-ended experiences, designers allow individuals to create their own meaningful contributions to culture. Lunenfeld uses the term 'sticky' which he defines as an "...object or system has affordances that allow other meaningful objects of systems to latch onto it, to expand it or bore within it." (Lunenfeld, p. 35). By creating a tool or artifact that is truly "sticky" a designer is relinquishing control to culture at large which might derail it from its original intention and original scope. Wordpress, a popular open-source blogging platform began as a simple tool to post blog entries with a small window for user created plug-ins. Over time the plug-ins became a major source of content and customization as users turned the system into something that originally couldn't have been conceived. The ingenuity and determination of users to bend systems to their will shouldn't be underestimated but embraced as they provide true possibilities for invention. It is this sort of unexpected development that yields exciting results.

Some of the problems with new media and information management could be attributed to a generational divide between maker and critic. The younger generation that is contributing the most to new media believes its contributing mindfully to culture but the older critics don't understand or appreciate their perspective. As this generation matures and uses the skills they are developing while sorting unprecedented amounts of information we will see a shift to more conscientious contributions to the cultural sphere and critical voices that reflect those

points of view. Designers also have a large role to play. How can we as designers create more intuitive and engaging tools that allow for further exploration and creation? How can experiences begin to encourage, and to a certain extent, demand users create something that is inherently mindful? Doing so presents the possibility to create decisively original content that moves beyond rehashing the past (without the mindfulness that went in to it originally) and hopefully towards a culture that is contributing deliberately meaningful media productions.

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COGNITION & AFFORDANCE IN INTERFACE

Sidney Fritts

I enjoyed our meeting with Kate Hayles and the brief introduction to her background and ideas. Her Mediaworks booklet *Writing Machines* is not only interesting as it brings design concepts of hypertext to print, but beautiful in its execution. Her short discussion raised the following questions.

Kate began to touch on ideas from last semester's seminar concerning how our objects and environments can facilitate and assist our cognition. She used the example of the books in her office as 'jogging her memory' but it begins to question how one might design better learning tools that exaggerate this concept and improve the users ability to retain and recall information. By elaborating on hyper attention vs. deep attention, particularly how fluid and voluntary these states are could be an interesting starting point for further investigation. How are our brains adapting to the increase in information and how do our habits affect the way we store, retrieve and manage these stimuli. In *Writing Machines* she experimented with threading various text and marginalia. Personally I believe that over the next decade more and more of our print materials will greater reflect the way we are encountering information on the web? Does she?

Kate discussed a number of works that emphasized illuminating the perception of the user by shifting behaviors from the norm. I found these examples interesting but, in my typical pragmatic fashion, wonder how these experiments can move beyond a novelty and encourage new patterns of behavior. It is one thing to enjoy 'Still Standing' in a gallery, waiting patiently to see it begin to move to your delight, but how can this be translated into a more 'useful' experience that would be encountered on a daily basis. Does Kate have any insight into how this inform an application like Google docs to still offer the accessibility and affordances users expect while delighting them with small moments throughout their experience?

The concept of 'false ideology', or false truth was mentioned with the example of computer interfaces, which move further from the truth with each new iteration which increases process while maintaining or improving user control while masking the actually process taking place. In our investigations of interface is there any benefit to allowing a window into the internal workings of the software/hardware and the bits and bytes that are the real drivers of these experiences? Are there negative consequences to false ideology?

Finally she began to discuss was the idea of how certain inferior ideas, technologies, etc can dominate and outlive superior ones. While I have my own theories including economics and distribution, I'm fascinated by this phenomenon. This is an area ripe for investigation particularly with the invention of Wiki's. As networks have removed some barriers of authority will this occur more frequently? Does she believe that this could be an outcome of false ideology? I'm excited to hear some more insights from Kate and hopefully expand on these ideas and prompt some new discussion.

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THE KIDS ARE ALRIGHT

Sidney Fritts

In the paper *Hyper and Deep Attention: The Generational Divide in Cognitive Modes*, Katherine Hayles' describes the shift in cognitive patterns that is occurring as a result of new media technologies. Her discussion is rooted in the following two definitions:

Deep attention, the cognitive style traditionally associated with the humanities, is “characterized by concentrating on a single object for long periods (say, a novel by Dickens), ignoring outside stimuli while so engaged, preferring a single information stream, and having a high tolerance for long focus times” (Hayles 187).

Hyper attention is characterized by “switching focus rapidly among different tasks, preferring multiple information streams, seeking a high level of stimulation, and having a low tolerance for boredom” (Hayles 187).

While her definitions are clear and valid, her underlying bias toward the first mode misrepresents the implications and opportunities of both modes of thinking. Contrary to Hayles' bias, Steven Johnson described the increase in complexity and engagement that has occurred in popular culture as an environment in which hyper attention is more appropriate in his book *Everything That's Bad is Good For You*. In order to prepare the next generation to be successful in the new technological environment we need to embrace hyper attention equally if not more so than deep attention in today's educational practices.

Deep and hyper attention exists as a cultural cycle, and we are witnessing the cognitive preferences of the new phase. While hyper attention most likely came first and offered benefits in the hunter gather era, deep attention has been the ideal of recent history thanks to safe environment that provide extended periods of contemplation without distraction (Hayles 2002). There is now scientific proof the younger generation has differently wired brains from older generations (Hayles 2002). Much of this has to do with the way in which the younger generation grew up with media and information from an early age and currently live in an environment that privileges dynamic information. There is also social evidence found in the amount of time it takes an individual to process an image, changing from 20 seconds to 2-3 seconds since the introduction of cinema (Hayles 2002). We are in the early stages of new kind of hunting and gathering era, hunting and gathering data, where the benefits of hyper attention will again facilitate success.

Many of the benefits of deep attention could actually be augmented, if not downright replaced, by hyper attentive tendencies. In her essay, Hayles' proclaims, “Deep attention is superb for solving complex problems...” but today's multifaceted problems call for systematic solutions that are best discovered through multi-level thinking and exploring various topics. For example, modern product designers must define the user, derive ergonomic solutions and sculpt the form of an object while also juggling material choices that effect manufacturing, supply chains, etc... Hyper attention provides the necessary abilities to quickly scan information for relevant and insightful knowledge that these solutions require. In order to develop innovative solutions we must embrace hyper attention and its strengths to pull from various sources quickly, acclimating to a context, and finding pertinent information to inform decisions. Individuals are currently embracing and developing hyper attention and information management skills through modern entertainment. Look at some of the more popular games in today's market; World of Warcraft, Spore and Sim City all of which have nested menus and interfaces that require simultaneous macro and micro monitoring and judgment. The value of deciphering complex information, adapting on the fly while filtering what's relevant to you, and then being able to switch gears and do it all over again should not be underestimated (Johnson 2008).

These games can also start to address another shortfall in Hayles' argument. She states that hyper attention is characterized by individuals seeking “high levels of stimulation, and having a low tolerance for boredom.” Hyper attention does not look for simple stimulation to avoid boredom... it seeks meaningful engagement! The games mentioned above are time consuming but contain well-defined interactions, goals, and rewards. Yes they are full of stimuli but they are also incredibly nuanced, inviting deep engagement in hours of dedicated attention, not pulsating colors. The games mentioned above also share a multiplayer thread that not only allows the players to immerse themselves in these systems but also to share the experience and interact socially. Similar trends occur in the use of social networking sites, wikipedia, and open source software, which attract usage because it allows for meaningful engagement and social participation.

Both authors suggest future implications of deep and hyper attention preferences in education. Both agree that an information rich environment will provide an integral point of diversion into deep attention. Hayles gives the example of “google jockeying” or having students’ google and project relevant information behind a lecturer as they speak, which is occurring in an experimental classroom. While an adequate attempt it seems to be a very superficial interpretation of the interaction and engagement that will be needed to engage hyper attentive individuals. Johnson offers an extreme suggestion of basing the educational experience around the characters development in Spore. Most likely the solution will fall somewhere between the two options, where the use of meaningful engagement and hyper attention creates an intellectual investment in ideas which can then be further developed through deep attention. One where students’ self-taught skills of managing complex information and systems are understood in a way that educates, engages and inspires. The ability to adapt and infer new parameters will become increasingly useful as we inhabit an environment that is rich with interaction, where learners harness their abilities to analyze and comprehend large data sets and complex information.

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PERSUASIVE GAMES?

Sidney Fritts

Since the mild Christmas day that I received the original NES (Nintendo Entertainment System) in the late 80's I have had a long and engaging relationship with video games. I have played nearly every console released since then and gone through the pains of playing mindless shooters to complex games such as Sim City and I'm pretty sure they have had a hand in shaping my perspective (while probably also contributing to my control freak tendencies). Surprisingly it has taken twenty-six years for the introduction writings and theories of Ian Bogost, a researcher and designer of 'Persuasive Games'. His discussion of games ability to persuade revolves around the notion of procedural rhetoric or “the art of persuasion through rule-based representations and interactions” that are natural affordances throughout digital interactive media. He also makes a strong argument for critical voices among games that discuss and progress his notion of procedural rhetoric.

I can say I strongly agree with most of the arguments and intentions Bogost has in his attempt to elevate video games from the children's distractions many perceive them as. In these efforts, his game studio Persuasive Games has produced some noble attempts at creating stimulating content that informs, raises discourse and raises questions within players but has yet to take full advantage of the opportunities his theories and medium afford. Most of his games seem to be underestimating the audience and overly simplifying the concepts in order to reduce the learning curve. In the process they also become redundant and lack variety. This is particularly interesting considering he even referenced Sim City which itself is not only one of the best selling game series of all time, but also one of the most complex. The next generation of students, game players, politically active adults will have grown up playing and interactive with complex games and will expect it or the design will fail to actively engage them. Bogost also relies heavily on concrete details that are as similar to the actual experience as possible in doing so he again sells his theories a little short by not allowing the application of abstract lessons learned from an experience that might be more entertaining and less literal than repetitive clicking to wave a sign in an interactive experience reflecting grassroots campaigning.

I have previously written about the cognitive differences in the upcoming generations that have been proving, as they have matured in an environment that privileges those that can quickly understand systems and systematic consequences to decisions. The key ability of interactive games is the possibility for hands on education that formally directed in comparison to the informal education that happens independently in student's free time.

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PREACHING TO THE CHOIR

Sidney Fritts

Since the mild Christmas when I received the original NES (Nintendo Entertainment System) in the late 80's I have had a long relationship with video games. I've found enjoyment in mindless first person shooters such as Doom as well as strategic simulations including Sim City and Starcraft. Having played nearly every console released since then, I'm confident they have had a hand in shaping my perspective, cognitive process, and approach to problem solving (while probably also contributing to my control freak tendencies). Surprisingly it has taken twenty-six years to be introduced to the writings and theories of Ian Bogost, the video game designer, critic and theorist behind 'Persuasive Games'. His discussion revolves around procedural rhetoric or "the art of persuasion through rule-based representations and interactions (Bogost, xi)" that are inherent affordances in the way interactive digital media is crafted. While I'm grateful for his attempts to elevate video game design from the role of childhood distraction that has characterized the public's perception, Bogost seems to have omitted some critical concepts from his argument. These include the neglected importance of pure entertainment value or emotional engagement and the role of context and abstraction as persuasive tools.

The games Bogost has created with his company Persuasive Games are currently only providing intellectual motivation to individuals predisposed to the games established argument through procedural rhetoric. In other words Ian is preaching to the choir. In order to reach a larger audience and engage individuals who currently do not have an intrinsic desire to study the subject matter of a persuasive game, game designers must acknowledge the role of emotional engagement in the early stages of interaction and its ability to facilitate procedural arguments. "Coin Drop (Bogost, 46)" is a term used to describe what arcade game designers aimed for when they created a gradual learning curve and reward system that kept the player engaged and inserting quarters into the machine. While systems designed to encourage high coin drop have been criticized for being 'addictive', the potential to influence and improve persuasive games can't be overlooked. Steven Johnson uses the term telescoping to describe the way a player test a system of procedural rhetoric to discover the rules. In the process the goals and accomplishments serve as the motivator for continued exploration (Johnson) similar to coin drop in the arcades. Bogost ignores the concepts of reward in favor of factual and procedural lessons that I believe few find entertaining or emotionally motivating. This is particularly interesting considering he even referenced Sim City which itself is not only one of the best selling game series of all time, but also one of the most critically acclaimed for its ability to hold the attention of players while performing activities that don't describe typical avenues of entertainment. In Sim City, the player begins with a small piece of land, simple menus and the simple task to create a sustainable city. As the player reaches predetermined thresholds of complexity the scope of play expands, new menus and actions become available and the player must 'telescope' through increasingly complex procedural rhetoric. I believe it's through this process of providing new challenges and expanding game play that players are motivated and have an engaging experience. Through this extended interaction the concept and discussion of managing a city and the procedural rhetoric that allows this becomes more convincing as players continue to become invested in the outcome. In comparison the Howard Dean for Iowa game (Bogost, 135), a Persuasive Games production that mimics the process of canvassing for a political candidate, is content with very few levels of depth and instructs players only on the mundane and technical aspects of canvassing for candidates. Any entertainment or emotional engagement is lost in the direct simulation and little expansion of the games mechanics. By creating such a one liner the argument crafted by the procedural rhetoric fails to engage or persuade.

Bogost relies heavily on concrete details that are as similar to the actual experience as possible. By adhering to closely to realistic task easily accomplished by your average player, Persuasive Games has yet to take full advantage of the interactive medium. Most of his games underestimate the audience and overly simplifying the tasks within the game. In the process they become redundant, lack variety and remove points of reward to progress and emotional motivation. The repetitive clicking to wave a sign is an example of the dumbed down

interpretation of grassroots campaigning in The Howard Dean for Iowa game, which fails to engage players, unless already intellectually motivated to learn the techniques of political canvassing. The game suffers while ignoring the complexity that is involved in the systemic choices while running for a political office and advocates that more canvassing equals a victory. If the game had expanded to encompass a larger context it could have emphasized the importance of canvassing as a task within the larger system of campaign management. In comparison, Sim City educates the player about the abstract concepts of compromise and consequences that involved with managing a large community. By opening up the systems to include a larger context the experience adds additional abstract problem solving into the procedural rhetoric. Instead, Bogost has removed any sort of abstract concepts from the equation leaving only a simple one to one interaction that doesn't offer much reward to the player or an incentive to continue.

Charles Hill created a table called "A Complete continuum of vividness (Bogost, 34)" that Bogost augmented by adding procedural rhetoric/simulation creating this final list.

Most Vivid Information	<i>Actual experience</i>
	<i>Procedural Rhetoric/Simulation</i>
	<i>Moving images with sound</i>
	<i>Static photograph</i>
	<i>Realistic painting</i>
	<i>Line drawing</i>
	<i>Narrative, descriptive account</i>
	<i>Descriptive account</i>
	<i>Abstract, impersonal analysis</i>
Least Vivid Information	<i>Statistics</i>

According to this list procedural rhetoric falls under actual experience, but would someone want to simulate something when they have access to the actual experience? If the task itself were not entertaining or enjoyable, would anyone participate without an additional motivation to do so? Looking again at the Howard Dean game as an example, this overly simplified and isolated simulation of canvassing for a political candidate only reenacts the procedure that many people do not look forward to. The motivation for participating in political canvassing is socially interacting with likeminded and passionate individuals. The actual experience of canvassing would be something done with-in the context of social group who is motivated and encouraged by one another to participate, adding an emotional dimension that is lacking from the procedural rhetoric of the game. By including social engagement in the procedural rhetoric, the designers could have included emotional motivation to continue within the system. One simple example, while not a persuasive game but one that is a simulation that does recreate the emotional experience of an activity is the iPhone iBeer app. This is a simple simulation of drinking a beer as you tilt you phone. While simple and novel, its value and emotional engagement arises when demonstrated within a group emulating the procedural rhetoric of camaraderie and lighthearted conversation that is associated with having a few drinks.

Much of this is a result of the over simplified structure Bogost has used to convey the procedural rhetoric of activities. Educational models have moved to teaching larger abstract concepts and problem solving and applying them to new situations. Well designed games follow this logic and continue to build complexity as the player deepens in the game resulting in an emotional reward system, expanding on the lessons that have come before but providing new challenges. While not literally the coin drop of the 80's arcades, this reward system is necessary to keep players engaged to provide a complete procedural rhetoric in an effort to persuade. The upcoming generation of students, game players, and politically active adults will have grown up playing and interacting with games and will expect complex and expanding procedural rhetoric and emotionally motivation or the design will fail to resonate with them.

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ANTHONY FUGOLO

OUTLOOKS ON INTERFACE

Anthony Fugolo

Social and cultural implications of design cannot be fully examined without questioning our responsibilities as designers as well as human beings. Authors Jay David Bolter, Diane Gromala, Lev Manovich and John Thacker seek to enlighten our fundamental understanding of technology and expand our definition of interfaces. Collectively, their works are a call to action and a warning, especially for designers.

Thackara is most direct with his doctrine. In his book, *In The Bubble*, he uses broad definition of design to point out the ugly humanity behind many of the indiscretions that led us to the turmoil of today. In turn, he presents a correlating collection of frameworks that lay a foundation to fix these problems—the overarching theme being that we need to slow down and put people before technology. Further, we need to see the destructive results of current behaviors to examine our actions and discern his seven design frameworks.

Thackara's underlying postulation is that humans are an interface and it is necessary for designers to remember this. Essentially, we need to rediscover how to interface with people rather than invent new interfaces on machines. Thackara urges us to stop escaping into the virtual world and start embracing the real world. Mankind's future depends on people communicating with people at the community level. Designers have a responsibility and are able to cause real change in the world through good design. This can be done through designing for people's needs rather than their wants, and in this designers will allow for a decentralized system.

Thakara's proposition seems idealistic given the selfish nature of people when control is decentralized. Instead, I would argue for inspired leadership to guide our technology in the right direction. Can the essence of his principles be translated into a better top-down methodology? Perhaps a more nimble, transparent interface between the people and their system of governance is more likely to resonate.

Bolter and Gromala might argue that the right mix of transparency and reflectiveness would be an effective model in advancing civilization. In *Windows and Mirrors* they discuss the importance of the digital interface's delicate "oscillation" between invisible pipeline and seen artifact. Invisibility delivers content efficiently but disregards the audience's context and needs in the process, thereby failing in the end. People want to be treated like people, not units. Visibility engages the audience and provides, "moments of revelation, when the user comes to understand her relationship to the interface" (Bolter, Gromala 74).

The reflective interface reminds me of an old friend that I might not have understood at first but came to know and love. This notion can expand beyond the digital realm. I grew up in suburban Michigan, near Detroit. My city, Farmington, can only be characterized by the banal landscape and yet it had been carefully crafted that way, with all the services and goods you might need no more than a few miles away at any given location. It was convenient, well kept, and at the same time very forgettable. From Michigan I moved to Minneapolis and I was faced with a completely foreign environment, full of activity, diversity, and surprise. Basic tasks such as parking, grocery shopping and finding the right coffee shop became challenging. The weather was painfully cold and I felt that it took me years to learn the subtleties of Minneapolis. Though I didn't realize it at the time I was undergoing a transformation as the city revealed its secrets and subtitles to me. I soon found that I loved the city and adopted it as my new hometown. I felt as if I had accomplished a great feat when I discovered Minneapolis after my initial confusion. The emotion is comparable to the feeling of achievement after a rite of passage. The city, essentially a

large-scale interface for habitation becomes a persona, perhaps a friend that understands. And therefore, my fellow residents and I have a mutual friend. This is the catalyst for genuine communities. Farmington is the antithesis of this metaphor—a faceless city. It provides nothing more than an invisible network of pipelines that lead to my old friends and family.

Where Bolter and Gromala propose a recipe for audience-interface communion, Manovich's *The Language of New Media* warns us to be wary by contrast. He asserts that computers "can be expected to significantly influence the traditional cultural logic of media" (Manovich 46). More troubling, on the subject of "media creation, manipulation, and access" he concludes "human intentionality can be removed from the creative process, at least in part" (Manovich 32). In one of his examples he cites hyperlinks as manipulators of our natural pattern of thought. Drawing on many astute observations, he essentially claims that what is old is now new.

However, I am not convinced that the emergence of the personal computer will shape all things to come as well as reshape all things before it. Two hundred years ago, no one could have imagined the technologies we use today. Two hundred years from now, I find it difficult to think that we might be reliant on advanced versions of similar current technologies. Because Edison's nineteenth century image motion experiments mirror some aspect of modern video-editing software, does that mean all we can expect from the computer is a shiny new version? Will future generations not move beyond binary code? Manovich's principles are thought provoking but need to be considered in historical context. When analyzing how far technology has come in such a relatively short time, it is reasonable to expect another radical paradigm shift in the near future.

The aforementioned works represent a range of philosophy on the meaning and future of interfaces. Together the authors imply that humanity has reached the point where we need to look back and see where we have been in order to determine where to go next. "Eighty percent of the environmental impact of products, services, and infrastructure around us is determined at the design stage" (Thackara 1). If we are not careful, the consequences of our actions could take many years to mend.

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THE DOWNLOAD EPIDEMIC

Anthony Fugolo

The notion that we are quietly destroying the most valuable aspects of our way of life (intellectual freedom, free expression, creativity, among others) is the cornerstone of Peter Lunenfeld's forthcoming book, *The Secret War Between Downloading & Uploading*: "This book is a call for the third sibling, the computer, to save the family from itself in the 21st" (3). Lunenfeld's thought-provoking perspectives shed light on how this is actually happening and what we can do to change the course of history, or as he might say, win the war.

There are a number of historical factors that have gone into conditioning us for accepting "cultural diabetes." Lunenfeld's primary example is the television, which insulates people in their homes and spoon-feeds them information of varying degrees of quality. Television "downloads" information to people, but people cannot upload to the television. And so a behavior of passive observance has become entrenched in contemporary American culture. The capitalistic theory of supply/demand along with capitulationism exacerbates this by allowing and even rewarding the proliferation of meaningless "junk." And so Lunenfeld draws a strong parallelism between the "supersize" health epidemic (fast and cheap) and the broadcasting of mind-numbing trash. He argues, partly because of the historical pretense, we are not meeting this threat against our collective intelligence with an equally threatening resistance, thus establishing a balance between consumption and production, or downloading and uploading.

This is where Lunenfeld's idea gets dicey, as he cannot define the content of junk in quantitative terms; and he is not interested in doing so, "categorizing 'the best' is as much curatorial interventionism as it is a skirmish in the secret war" (26). Rather, he offers the terms "mindful downloading" and "meaningful uploading." Being mindful "requires rigor" and "actively choosing and committing to the situations and experiences we download." At first, it might seem like Lunenfeld is undermining our sacred freedom of speech, but I don't think so. He is not so much interested in defining the content of meaningless and proposing we abandon that content (junk) as he is in encouraging us to engage in content with a focused approach, which in turn will influence content toward the meaningful.

At this point the term "stickiness" comes in to play as a way of describing an "object or system...that allow other meaningful objects of systems to latch onto it, to expand it or bore within it" (35). I think this is how Lunenfeld gauges value, and cites a snowball effect to this kind of meaningful content. Lunenfeld values participatory culture, the catalyst of intellectual breakthroughs, and the only way it can be achieved is to build a sticky foundation on which communities can construct meaning.

Lunenfeld goes on to describe how a culture of "unfinished" is a suitable incubator for this construction. If a measure for the success of technology is the degree to which it is open to "unanticipated uses" (45), then there can be no finite ending, or finish, to achieve technological resonance. So infuse the internet with a capacity for things to be added, edited, revised and reedited and we can realize a balance of download and upload, thereby winning the secret war.

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UNIMODERNISM AND SOCIAL NETWORKS

Anthony Fugolo

In his forthcoming book, *The Secret War Between Downloading & Uploading*, Peter Lunenfeld argues that we have collectively have a responsibility to contribute, or "upload," to our culture in a meaningful way. In order to do this, we must be mindful about what information we choose to engage, or "download." He goes on to describe a cultural phenomenon that is impeding us from discerning what has meaning—"unimodernism." According to Lunenfeld, "...we produce and consume a 'unimodernism,' in the sense that it makes modernism in all its variants universal via networks and broadcasts, uniform in their effect if not affect, and unitary in terms of their existing as strings of code" (49). Is the culture machine really decontextualizing information to the where the true nature of things is obscured? In many ways this is probably true. But in the case of some of today's most culturally pervasive online information systems, such as social networks, contexts for information are not being muddled but rather reconfigured to utilize the affordances of current technologies.

Web-based social networking systems are suspiciously absent from Lunenfeld's commentary, even though at times he seems to be criticizing certain aspects of them. I think this is because they are difficult to classify. They do certain things very well while other things fail to carry any meaning in the Lunenfeld sense. But what is certain is that in order to participate in one of these communities there are rules one must accept. For instance, Twitter has a 140-character limit for each "tweet." On the other side of the coin, the content of that 140 characters is entirely up to the user. I'm sure Lunenfeld would consider certain aspects of these systems as major promoters of unimodernism. In a recent lecture with Lunenfeld, I posed a question to him regarding his analysis of Facebook. If I recall correctly, somewhere in that dialogue he identified Twitter as a distractor—possibly what he would consider a manufacturer of "strange attractors."

I want to focus on Twitter and its role in the unimodernism movement because I do not know of another social networking tool with such rigid constraints. With growing popularity, only 140 characters with which to communicate and a large number of organizations and news groups using tweets to deliver information, Twitter is the marquee offender of decontextualization—not even an image to illustrate what little text can be sent. Yes, there are probably those who always keep an eye on their Twitter feed and at the end of the day feel well-

informed about their friends' lives, their interests, current event, etc. The ironic part is that the creators of Twitter probably would have never thought their users would receive such a broad range of subject matter from their software. Twitter was built around and is still marketed as a social networking tool in the truest sense—friends telling friends what they are doing at that moment.

So how did all the news companies get in on the action? The answer is not surprising. The news does not happen at 6:00am everyday, it can happen anytime. The disadvantages of television and newspapers are that they report on news that is relatively old when you consider online sources. Well-established news websites and blogs are updated frequently with very current news coverage. This better reflects the nature of our world where things are happening all over the globe all the time. Twitter acts as the user's desktop town crier, letting people know the headlines as soon as they become available and giving them an option to further explore by linking to a website with a full story. By comparison, getting a stack of folded papers with a bunch of news that's a day old seems detached from the reality of things. Twitter may still be distracting, but in this aspect it is not decontextualizing the news. Rather, it more accurately mirrors the spontaneity of day-to-day events in real time.

But Twitter and news is old news. And why expose yourself to distraction for the sake of getting the all latest stories? Why the urgency? Not all news is urgent, but the notion of that kind of information delivery was the catalyst for other the integration of databases holding information that is innately urgent to a certain audience. Given the state of our current economy, information such as job opening might be of particular interest to many people. When pursuing a career, the stakes can be high and being out of the loop for a day can make a difference. Services like Tweetajob.com utilize Twitter to get the word out fast. Within the context of a job search, speed is key on both sides. The employer might urgently need to fill a position and job applicants typically cannot afford to stay job applicants for long. In this way technology is helping to redefine the context of a job search in a positive way, providing speedy connectivity and leveling the playing field for those seeking jobs online.

Critics might say this is simply faster database-driven information through the lens of yet another social networking application. But technology already exists that hints towards the promise of services that will not further detach us from our surroundings, but help us to better understand them. Such as the hardware offered by companies like Botanicalls, which is a sensory device can be placed in soil and sends messages through Twitter when irrigation is needed. The argument could be made that this decontextualizes our relationship with nature. But for those without a green thumb, an introduction is needed before the relationship. Here technology can familiarize people with the needs of their plants. Thus, the tiny lens of Twitter provides a mutually beneficial dialog between man and plant and lays a foundation for insight into a new way of viewing nature. Here again, a context is fostered rather than subverted.

I don't disagree with the notion of unimoderism. But I think technology as a means for universalization is a complex idea with exceptions that are worth exploring. Networks like Twitter, Facebook and Myspace offer so much freedom in how they can be used and what content can be shared that they inform new contexts rather than strip away meaning.

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THE HUMUMENT AND HYPERTEXT

Anthony Fugolo

In her book, *Writing Machines*, N. Katherine Hayles traces the delivery of literature from inscriptions on paper to contemporary, electronic documents. Along the way, she draws connections between the materiality of literature and how that impacts audience interaction and the work itself. She argues that the physical actualization of literature and its content is an important relationship that should be embraced by writers and audience rather than viewed as a transparent means for dispatching information.

In Chapter 6, she focuses on an “artist’s book”—*The Humument* by Tom Phillips. This book is actually an altered version of William Mallock’s *The Human Document*. Phillips reworks every page of the book with form and pattern, but most importantly selective obstruction of Mallock’s words. This makes for a high degree of ambiguity that completely changes the original nature of Mallock’s book and challenges the conventions of printed literature by allowing the reader the subjective interpretation of what all these channels of expression (visual and written) come to mean. This kind of poetic ambiguity and visual composition is nothing new, but within the context of an entire novel (368 individually “treated” pages) it demonstrative of how much materiality can mean to a literary work. “Complimenting these flexible movements between verbal construction and artificial physicality is the configuration of the page as an interface that implicitly constructs the reader through its materiality” (99).

Hayles concludes that *The Humument* is a marquee example of the book as a “random access device” (RAD) that allows the reader freedom to roam the pages as they wish, not necessarily from cover to cover. “Contrary to much hype about electronic hypertext, books like *The Humument* allow the reader considerably more freedom of movement and access than do many electronic fictions. In this respect the book is more RAD than most computer texts” (99). Having never actually handled a copy of *The Humument*, from what I gather from Hayles and other sources I do agree that it is a revolutionary work. However, I disagree with the notion that it allows the reader more freedom than hypertext for a number of reasons. First, I will define a working definition for “freedom” for this context: cognitive affordances that allow the individual to perform an expansive variety of actions. *The Humument* certainly does some of this through its poetic and artistic qualities, but the boundaries of those qualities have been predetermined by Tom Phillips and William Mallock. Phillips decided what to obscure and augment; Williams wrote the source material. And it is all contained within one volume. Phillips even literally draws pathways from textual chunk to textual chunk, which is suggestive of a certain way of reading. Yes, the book does allow, even encourage the reader to randomly flip from section to section. The non-linear navigational and interpretive affordances of *The Humument* are the crux of Hayles argument that this book is a physical actualization of super-hypertext.

Electronic documents can have these qualities too, but when the environment in which they are delivered is additionally considered, it is clear that hypertext is infinitely more expansive than a physical book. To illustrate, the actual boundaries of cyberspace are unknown because it is so vast and constantly growing and changing. *The Humument* changes when the publisher decides it is time to print a new edition. It does not grow, Mallock wrote 368 pages and he is now dead. Within cyberspace, the wayfinding completely depends on the user. Tangents, distractions and independent investigations are allowed. One might consider this outside the realm of any single document on the web (and I would agree), but the web itself—the vehicle of proliferation, cannot be ignored if the Hayles bases her claims on the physical proliferation. Hypertext can also allow discourse between readers through online forums. Further, in many ways it can facilitate the collective creation of new ideas that add meaning or discount aspects of a given body of literature.

I will conclude with an oxymoron on the grounds of Hayles logic: the web is the materiality of electronic documents, and in terms of contemporary technology it has no equal. No other network offers more affordance or has more potential to expand that affordance, and therefore electronic hypertext is zenith of freedom in readership.

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THE MYTH OF MATERIALITY

Anthony Fugolo

In her book, *Writing Machines*, N. Katherine Hayles makes a case for the significance of materiality in literary criticism. She argues that books as artifacts hold meaning critical to understanding the words inscribed on their pages. We must account for characteristics such as size, weight, texture, typography, imagery, among others, when

determining the true nature and broader meaning of a text. According to Hayles, these physical criteria are intrinsic to the author's literary intentions—part of a covert agenda tragically ignored by critics and scholars. But with the dawn of electronic literature and all of its technological affordances, Hayles had an epiphany: materiality matters. She uses three literary bombshells that reach from one end of the written spectrum to the other in order to substantiate her theory. However, her distinct selections do little to support her argument that materiality matters across the entirety of literature because they are so remarkable. *House of Leaves* by Mark Z. Danielewski, *A Humument* by Tom Phillips, and *Lexia to Perplexia* by Talan Memmott are unparalleled in their qualities and yet they are the cornerstones of Hayles' assertions with respect to all literature. Materiality offers insight into literature, but it is not necessarily implicit with authorship. For the vast majority of literature, materiality speaks to historical context—the social, cultural and technological environment in relationship to the written word.

In the spectrum of literature, *House of Leaves* represents Hayles' most mainstream case study. It is Danielewski's bestselling tour de force, complete with cult following. But unlike other bestsellers, *House of Leaves* is critically acclaimed for taking full advantage of every trick print can muster. A medley of type treatments, curious page layouts, and interwoven footnotes work together as a double narrative. It is true that the materiality of this book is vital to the reader's experience and the author's intended experience. There is no doubt that Danielewski is the architect in this complex but triumphant construction. So why is there a countless multitude of fictions before *House of Leaves* that dare not hint toward these print techniques? First, reproduction technology limited production conventions until the late twentieth century; and authors had to conform to a generic template. Modifying basic spatial relationships was not possible. Further, these unique features are the culmination of decades of typographical experiments that stretch beyond book design. Danielewski may have studied the techniques from a late twentieth century perspective and appropriated/adapted them for his story. In 2002, when *House of Leaves* was published, printing technology could handle the peculiar challenges he posed. Finally, his publisher willingly funded his bizarre vision—possibly because production costs in 2000 were far less than they were in 1950. Most novel writers have limited, if any control over the physical manifestation of their work. For being a bestselling, critically acclaimed, widely available novel, *House of Leaves* is a far cry from the prototypical novel. All literature considered, it is even further from the classics that publishers reissue and re-reissue in multiple forms divorced from their original material identity. Its narrative achievements through materiality, however, set a historical precedence that deserves the attention of literary scholars.

Hayles also tackles a completely different genre of printed text—the artists' book—which are true oddities in the landscape of literature. They can only be fairly compared to other artists' books, of which there are few. That said, *A Humument* relies as much on materiality as an art history book serves as a museum. Tom Phillips' "treatment" of William Mallock's *A Human Document* was meant to demonstrate the infinite layers of meanings and interpretations applied throughout a literary work. Through thoughtful obstruction, emphasis, patterns, colors, and spatial arrangements, Phillips produced a limitless array of reading experiences. Obviously Phillips' handiwork is evident on every page, or at least a facsimile—only one *A Humument* exists. Presumably it belongs to Tom Phillips who is the only person who knows the physicality of his masterpiece: the texture of the pages, the fragility of the treated pages, the true vibrance of the colors, the extra weight of the inks, or the size of the original source volume. These things, the essence of the materiality that is so crucial to the experience of Phillips' book, are all lost in the facsimiles available of the work. Yet Hayles made due with the copy available to her and still managed to articulate the essence of that which she could not experience first hand. How? Fortunately, Phillips' created this book at time when he could reproduce his single work of art in widely accessible ways—the late twentieth century—after the color printing press had been adopted and after Mallock, or anybody invested in Mallock's writing, could object to Phillips' meddling. This suggests that the historical backdrop of *A Humument* plays a larger role in our understanding of its literary qualities than how its paper feels.

Departing from the realm of print, *Lexia to Perplexia* is an extraordinary example of the affordances of electronic literature; and Memmott deliberately utilized the affordances in all aspects of its delivery. Unfortunately, we have to take Hayles' word for it because the website no longer functions correctly on current web browsers. Since 2000, *Lexia to Perplexia* has sat dormant, leading a completely static existence in what has become arguably the most dynamic environment that man has ever created—the internet. Presently, most of the

internet's popular literary outlets are database-driven, constantly growing and updating. Nine years ago, this technology was not as pervasive as it is today. When Memmott created it, the electronic culture was not defined by blogs that published new content every hour. *Lexia to Perplexia* was built as an island. At some point between its creation and the present, it has fallen into disrepair, overwhelmed by the advancing technologies in which it nests. The online context of the work obscures any literary intentions Memmott had. The timing is happenstance but the demise was inevitable. The fact that the author's aims are not administered but instead overshadowed by materiality speaks to something greater. Even when the author explicitly utilizes materiality for literary purposes, he must first consider the technology he employs and its historical endurance, lest his intent ultimately fails.

In each of the works that comprise Hayles' body of evidence, it is the hallmarks of historic social, cultural, and technological environments shine brightest—the residue of our collective past rather than that of the single author's. It is only when we examine work in a vacuum that issues surrounding authorship emerge from the fray. Calling upon *House of Leaves*, *A Humument* and *Lexia to Perplexia* to represent the spectrum of literature draws attention not to the authors intentions, but to the profound cultural meaning embedded in the form—a grounding in the past that helps us to know the direction of the future. That is not to say materiality is not a powerful tool for the author to employ, rather our interpretations of literature's physicality are subject to shifting contexts through time; and the intent of dead writers turn to myth.

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THE DEPENDENCIES OF PERSUASION

Anthony Fugolo

In *Persuasive Games: The Expressive Power of Videogames*, Ian Bogost identifies an emerging classification of rhetoric and offers the moniker “procedural rhetoric” for discourse. Bogost speaks of this new rhetorical model squarely in terms of videogames, which provide a variety of rich examples to back his claims. There is no doubt that videogames can convey information, ideas and beliefs to their audience through words and images, but how gaming procedure sparks cognitive activities that have persuasive powers is unclear. Further, if procedural rhetoric alone cannot be connected to human behavior in the material world, can it be labeled as rhetoric? To be fair to Bogost, I have only read a portion of *Persuasive Games* and that is what I will draw on for the purposes of this essay.

Bogost defines the essence of procedural rhetoric as, “the practice of using processes persuasively” (28). He puts forward and regularly returns to *The McDonald's Videogame* as a strong illustration of this idea. In the videogame, players have to manage many aspects of fast food enterprising, which includes dealing with political, health, business and moral issues. As they play, gamers discover complex interrelationships between production and marketing as well as compromises to environment, nutrition, and animal rights that have to be made in order to grow your business. Bogost believes this is quintessential procedural rhetoric. In this case, the game attempting to convince the audience that the evils of the fast food industry have detrimental implications on a global scale through the process of game play. Bogost contends that this is fundamentally different than textual or visual rhetoric. However, when the elements of the game are broken down into distillates that are apparent to the programming language-illiterate, text, image and a system of rules that control when the text and images are displayed is what remains. The broader system of rules that provides the affordances of play may be unique to videogames, but I question whether it is truly the driving force behind the persuasive properties of which Bogost speaks.

Bogost claims that, “in a procedural representation like a videogame, the possibility space refers to the myriad configurations the player might construct to see the ways the process inscribed in the system work” (42). However, in *The McDonald's Videogame*, for example, the processes of managing a fast food empire are abstracted to such a degree that deriving any true meaning from purely manipulating those controls is a far-fetched notion. Of course, these processes have a context within the game that help to communicate the

meanings; and this context is composed of text and image. Therefore, the procedural rhetoric is dependent on the textual and visual rhetoric to articulate its persuasive thrust. This is problematic to the proposition that procedural rhetoric merits its own rhetorical domain. Textual and visual rhetoric can independently persuade, but procedural rhetoric needs to employ at least one of the two other forms of rhetoric to be effective. I agree that a theory of procedural rhetoric would be instrumental in amplifying the persuasive qualities of text and image for the videogame platform, but I question whether it can be elucidated without framing it within other forms of rhetoric.

In legitimizing the educational potential of videogames, *Persuasive Games* is enlightening. Bogost presents a strong case for the advancement of critical research in videogames. But in planting a flag for the rhetoric of processes, he falls short. I am not suggesting that this book is not worth the consideration of rhetorical scholars, but in the absence of cognitive studies in persuasion, Bogost's argument for procedural rhetoric is unconvincing.

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THE PSYCHOLOGY OF GAMEPLAY

Anthony Fugolo

In *Persuasive Games: The Expressive Power of Videogames*, Ian Bogost identifies an emerging classification of rhetoric and offers the moniker “procedural rhetoric” for discourse. Bogost speaks of this new rhetorical model squarely in terms of videogames, which provide a variety of rich examples to back his claims. There is no doubt that videogames can convey information, ideas and beliefs to their audience through words and images, but how gaming procedure sparks cognitive activities that have persuasive powers is unclear. Further, if procedural rhetoric alone cannot be connected to human behavior in the material world, can it be labeled as rhetoric? Instead, the manner in which videogames present information to capture the human psyche is key to their persuasive capacity.

Bogost defines the essence of procedural rhetoric as, “the practice of using processes persuasively” (28). He puts forward and regularly returns to *The McDonald's Videogame* as a strong illustration of this idea. In the videogame, players have to manage many aspects of fast food enterprising, which includes dealing with political, health, business and moral issues. As they play, gamers discover complex interrelationships between production and marketing as well as compromises to environment, nutrition, and animal rights that have to be made in order to grow your business. Bogost believes this is quintessential procedural rhetoric. In this case, the game attempting to convince the audience that the evils of the fast food industry have detrimental implications on a global scale through the process of game play. Bogost contends that this is fundamentally different than textual or visual rhetoric. However, when the elements of the game are broken down into distillates that are apparent to the programming language-illiterate, text, image and a system of rules that control when the text and images are displayed is what remains. The broader system of rules that provides the affordances of play may be unique to videogames, but I question whether it is truly the driving force behind the persuasive properties of which Bogost speaks.

Bogost claims that, “in a procedural representation like a videogame, the possibility space refers to the myriad configurations the player might construct to see the ways the process inscribed in the system work” (42). However, in *The McDonald's Videogame* and *Howard Dean for Iowa*, for example, the processes of managing a fast food empire or running a grassroots campaign are abstracted to such a degree that deriving any true meaning from purely manipulating the controls seems far-fetched. Of course, these processes have a context within the game that help to communicate the meanings; and this context is composed of text and image. Therefore, the procedural rhetoric is dependent on the textual and visual rhetoric to articulate its persuasive thrust. This is problematic to the proposition that procedural rhetoric merits its own rhetorical domain. Textual and visual rhetoric can independently persuade, but procedural rhetoric needs to deploy at least one of the two other forms

of rhetoric to be effective. I agree that a theory of procedural rhetoric would be instrumental in amplifying the persuasive qualities of text and image for the videogame platform, but I question whether it can be elucidated without framing it within other forms of rhetoric.

More so than the procedural underpinning, the pacing and sequencing of information as it impacts user cognition speaks to a rhetoric exclusive to videogames. What is it about how a videogame engages a user that makes it effective in influencing ideas? Does it have to do with the movements of sprites or how they are represented? Is it more about how carefully the information is revealed and at what times? How difficult of how long the game takes to complete? For the purposes of this paper I'll briefly examine the competitive nature of videogames. In order to perform well, or at least better than an opponent, players must devote a certain degree of attention to the task at hand. When games pique a players' attention through heightened competitive experiences, the stage is set for effective persuasive devices to be deployed. The advergaming *Pickwick Afternoon Spirit* is demonstrative of a game-based experience that communicates the qualities of the product, which, according to Bogost, makes it more successful than other advergaming titles he profiles in his book. However, *Pickwick Afternoon Spirit* is not described as a game with much depth or originality: "The gameplay is essentially Whack-a-Mole played with boiling hot tea" (218). This suggests that the competitive quality of this game is limited. One might conclude that a simplistic procedural construct such as *Pickwick Afternoon Spirit* might not hold a player's attention for very long or even encourage repeat playing. While a game such as *Mountain Dew Snowboarding* may only advertise its product on an associative level, it does provide an intense combative experience that has a greater chance of impacting a player's cognition. Even if this is only accomplished through a superficial branding presence, I speculate that the advanced gameplay and heightened competitiveness are more conducive to catching the awareness of players, and consequently creating a more effective advertisement. However, these conclusions are not grounded in any scientific study of human psychology as it relates to videogames, and ultimately that is what is missing from this survey on the persuasive nature of games.

In legitimizing the educational potential of videogames, *Persuasive Games* is enlightening. Bogost presents a strong case for the advancement of critical research in videogames. But in planting a flag for the rhetoric of processes, the cognitive aspects of videogame interactivity and its relationship to persuasiveness is absent. Without this comprehensive psychological study, *Persuasive Games* feels incomplete. Rather than focusing on procedural constructs, the relationship between these constructs and how it evokes human emotions is more central the critique of rhetorical powers.

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LINCOLN HANCOCK

THOUGHTS ON INTERFACE

Lincoln Hancock

Lev Manovich, in *The Language of New Media*, charts the concurrent development of modern media and computers. In the 1890s, he notes, when the still image was put in motion, people all over the world "found it irresistible" (23). Manovich speculates that "the increasingly dense information environment outside the theater" overwhelmed the consciousnesses of people living in that era — the occasional retreat into a dark theater was a therapeutic respite for many.

In *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency*, Diane Gromala and Jay David Bolter describe the multiplicity of media forms that constitute experience for us in today's world (66). They propose that reflective, mediated interfaces provide the most sensible, responsible, and desirable

response to multiplicity. We do not need to “look through the experience to a world beyond, but rather...right at the surface.”

People crucially need help dealing with, processing, and thriving in the environment of information overload that is modern life. Contemporary design theorists and cultural critics offer insight not only into the modern condition but also into the possibilities design might offer for helping make sense of the world and finding ways to prosper in it. Increasingly, design thinkers are working to find ways to situate people in the center of design — thinking closely about context and the locus of meaning. Through a careful positioning of the individual participant/user in a designed situation, the anxiety-inducing conditions of modernity can be tempered into manageable, sensible, meaningful experience. This is the task of design in the present age.

John Thackara, in his book *In The Bubble: Designing in a Complex World*, recounts an article from Britain’s *The Guardian*: a patient with a personality disorder was having great difficulty understanding his diagnosis, even with the assistance of his family doctor and the local health team. Soon he discovered, to his relief, that the Internet provided him a vastly helpful source of personal advice and information. “It’s very difficult to explain the sense of relief...Yes, I had a serious mental health difficulty, but...I soon realised millions of people over the world were struggling...Suddenly I didn’t feel quite so alone” (120).

This anecdote captures the transformation of one individual from anguished and overwhelmed to calm, cool, and contextualized. The community this man located and to which he connected through his dealings on the Web helped him sort through an out-of-control emotional reality and find a situated way of being.

There is a profound tension between modernity’s complex, multi-layered experience and the most pervasive forms of mediation, which seem to imply that truth needs no mediation at all. This latter idea is what Bolter and Gromala refer to as the Myth of Transparency (49) — the idea that synthetic experience should steer as close to original experience as possible. Bolter and Gromala argue that purely transparent design experiences do little to help us make sense of multiplicity.

Stemming from longheld painterly traditions emphasizing realism (which have percolated through the history of design), the Myth of Transparency is employed too frequently by designers to buttress the common assumption that interfaces should remain essentially invisible to a user. The “desktop” metaphor employed by the standard Graphical User Interface is design’s “prime expression” of this desire for transparency, Bolter and Gromala say (41). “The task of the GUI is to convince the user that the computer *is* her desktop” (44). A user “thinks she is opening a folder by clicking on it, but her clicks are really launching a series of computer instructions to fetch binary data from memory or the disk, convert that data into a graphic form, and display it on the screen as the “contents” of the folder” (43).

Further, in the standard GUI, information is accessed through *windows*, which encourage a “looking-through” the interface into the realm of truth beyond. The problem with windows is that they do little to further a looker’s sense of where she stands in relation to the world she encounters. Rather than placing the individual at the center of experience, windows remove people from the heart of being by fixing their positions as onlookers, capable only of receiving fixed, established truths from afar.

Bolter and Gromala offer a counter paradigm of design as mirror. They contend that design can reflect a user’s needs and wants — indeed selves — in all their complexity (74). Bolter and Gromala show that total transparency is not only impossible to achieve (hence the *myth*), but undesirable and problematic as well. New mediums, in particular digital interfaces, reflect whether we want them to or not. We should embrace this condition and design interfaces that call us into active relationships with information, recognizing that meaning is created and the world becomes real in the moment of experience and engagement. “Digital interfaces...reflect the user in context...the most compelling interfaces will make the user aware of her contexts and, in the process, redefine (them)” (27). This is, in Thackara’s term, recognizing the *flow* — the stream of complexity in which we may either sink or swim. Design should aspire to provide us with rafts and paddles, showing us where we are and equipping us to survive the whitewater.

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THE SECRET WAR

Lincoln Hancock

Peter Lunenfeld's book-in-progress, *The Secret War Between Downloading and Uploading*, gets to the heart of an issue that has echoed through our seminar readings this semester: we have an information problem, and we must find a way to deal with it.

Lunenfeld's diagnosis is phrased evocatively: he argues we've developed a sort of cultural diabetes from decades of unhealthy and unsustainable consumption habits. It's not sugar that's brought this on. It's information. Too much, too often, in too many one-sided, consumption-oriented ways. "Television," as Lunenfeld describes it, "is a one-way spigot of privatized media gushing 24/7 into the home, commercial spaces like restaurants and supermarkets, even schools" (17). And now, the networked computer, the "21st century culture machine" (combining the means of production and distribution and the site of reception in one beige box) has geometrically amplified the problem. We've also been stricken with a "downloading syndrome" from the complex, intertwined, pervasive systems of delivery that have emerged in the networked age. There's been an astounding proliferation of content, but the vast majority of it is lite, if not meaningless.

It's critical for us — as individuals and as a culture — to confront this "explosion of information." We must realize there's a huge difference between processing data and designing its output. Grafting traditional static methods of transmission onto the computer is making us sick: "Constant consumption of media without a corresponding productive capacity has engendered a sick culture," Lunenfeld says.

Lunenfeld offers two powerful notions as potential solutions: "stickiness" and "unfinished." Combine them, he says, and we can create rich, perpetually expanding interconnections; meaning where there was none. We need to carve out space for mindful downloading and meaningful uploading (finding peace in the war that rages in the title of the book). Focus, context, and "info-triage," as Lunenfeld describes, can help us understand that the choice *not* to engage with information can be just as valid as the constant choice we have between options (which are literally endless). Info-triage helps us work around our problem. Deploying mindfulness of our information inundation and the limitations of time, we are enabled to make choices.

Disrupting information flow is another key tactic in the secret war. Lunenfeld argues we need to intervene in the perpetual data torrents to curate, marshal culture, and create new meaning through thoughtful juxtaposition (28). Through thoughtful disruptions and interventions, we create stickiness. Stickiness provides an anchor in a cultural environment full of Teflon objects. "A sticky object or system has affordances that allow other meaningful objects or systems to latch onto it, to expand or bore within it" (28). To be sticky is to be touched by a distinctly human hand, to reenter the culture of flesh.

Acknowledging the computer as the dominant culture machine compels us to consider how we can make it work to enrich human ends. Lunenfeld: "The key to making meaning with the culture machine is to harness the two defining modes of networked computing, simulation and participation, in order to add stickiness to the culture" (35). Stickiness can come from unfinished. In creating objects for the digital age, we need to acknowledge that "what an author produces is open to revision, and those who used to be readers or listeners or viewers can become users, through appropriations, remixes and creative reuse."

Lunenfeld suggests one metric for measuring the success of any new digital technology might be to consider how open it is to unanticipated uses. This notion of encouraging "unfinished" challenges our longheld notions of authorial intent and meaning. Though it may cause us some anxiety, we need to embrace unfinished. In so doing, we might shift "from a pure consumption-oriented model to one that mixes production and consumption." Instead of producing finished objects and systems geared only towards consumptive behavior, we can design things that require their users and consumers to engage.

We find new motivations in new cultural forms. Community-oriented products like flickr, de.licio.us, Linux, Wikipedia — these allow us to see ourselves as contributing to “the creation of things and systems vastly larger than ourselves” (68). Modders take mass-produced items and personalize them. The presence of active elements of “participatory unfinished” in software like iLife and sites like myspace and facebook “indicate that the desire to annotate one’s own life and the lives of one’s friends and community is resurfacing.” The success these products are finding is an indicator of the intense desire many people have for new tools for dealing with the data that threatens to overrun their lives.

Lunenfeld’s notions of stickiness and unfinished — and the tactics of info-triage and disrupting flow — offer promising alternatives to an uncritical embrace of information inundation. However, I’m not sure he accounts enough for the tremendous difficulty posed by a strategy reliant on countering uncontrolled downloading with more thoughtful uploading. Not everyone is an artist or critic. Probably a fairly small percentage of the web-using populace is actually equipped to contribute substantially to an already impenetrably dense discourse. Lunenfeld acknowledges that, indeed, much of what we currently upload simply shimmers “as nodes in the distraction machines” (44). The challenge, he says, is to imbue work we upload into the world with “enough of an affordance to connect with other elements of the network.” Easier said than done. But we should absolutely, as designers, attempt to facilitate the kinds of intervention that make it more likely that our audiences will be producers as well as consumers.

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A RESPONSIBILITY TO CREATE?

Lincoln Hancock

In his manuscript for *The Secret War Between Downloading and Uploading*, Peter Lunenfeld argues for a counter-surge of meaningful content creation to balance the torrential information flow threatening to drown us in the 21st century. I find his position compelling, but Lunenfeld must elaborate and shore up a few of his claims in order to drive home the urgent point he hopes to make.

The argument in *The Secret War* is situated historically. Lunenfeld recounts the emergence of three technologies that profoundly shaped the course of the last century — the atomic bomb, the television, and the computer. As we’ve crossed the threshold into the 21st century, reflectively orienting the trajectory of our relationship with the computer is vitally important to maintaining our cultural health.

Lunenfeld sees our early uses of the networked computer as particularly troublesome insofar as they seem to evince a wholesale adaptation of the modes of transmission and consumption of the television set. Soon after 9/11, blogs began to mimic and accelerate the 24-hour news cycle, pushing a “viral torrent of RSS feeds to mobile phones” and providing new news “at the click of the browser’s refresh button.” There is great danger in allowing ourselves to believe we can simply carry over our atomistic, essentially passive habits of TV viewing to the age of the computer, Lunenfeld believes — because the sheer volume of data now confronting us has grown exponentially and demands critical, creative response.

This proposition — that mindless downloading must be countered with meaningful uploading — is the centerpiece of Lunenfeld’s manuscript. He supports it in two primary ways. First, Lunenfeld posits a view of “what it is to be human” which characterizes the “superfluous” — the arts, religion, philosophy — as the *sine qua non* of personhood. Failing to regard one’s world critically and meaningfully — to “move beyond downloading,” Lunenfeld says — “is to strip oneself of a defining constituent of humanity.” Secondly, he attempts to establish that our patterns of “constant consumption” — in spite of our essential nature as creative beings — have “engendered a sick culture.” Our media has become entertainment, and we have gorged ourselves on it so intently and for so long that we’ve developed a sort of “cultural diabetes.”

I happen to believe Lunenfeld is headed in the right direction with regards to both of these claims. His account of what it means to be human is far too brief, however. He glosses the philosophical underpinnings that might cement his position. And while his characterization of our precarious cultural moment is more carefully fleshed out, I fear the solution he proposes might appear unduly burdensome unless he properly grounds it in a well-established picture of who we are as humans. A more adequate and accurate ontological account, I believe, might help lay the foundation for a sort of “ethics of uploading.” I think there may be a case for a real moral component to Lunenfeld’s proposal that we counter mindless downloading with meaningfully interpretive contributions to our increasingly saturated world.

A fuller picture of who we are — and what incumbencies derive from our being — could look closer at precisely what it is that accounts for our separation from the rest of the animal kingdom. Lunenfeld, in keeping with his theme, notes that “all animals download, but only a few upload anything besides excrement and their own bodies.” Humans are the most advanced of the few uploaders — we construct affordances and employ them to launch ourselves into realms well beyond the exigencies of basic survival. We are the only species with reflective notions of ourselves, with moral and religious systems, with purely creative intentions. But the connection Lunenfeld seeks to establish between our nature and our responsibility to create emerges not from the reflective activities in which we engage — it is a corollary of the shape of our prereflective human consciousness, I believe.

As conscious human beings, we are particularly situated in space and time. Our minds apprehend the world from a uniquely human perspective. Because of our situated perspective — a fact of consciousness — we can only apprehend certain views or impressions of the world at any moment. We pull these views from a stream of possible apprehensions of the plenitude of being into which we project ourselves. What we regard as reality is a world comprised of objects assembled from particular apprehensions, which we perceive in relief, set against one another. We precognitively separate the world as it presents itself into objects of consciousness, into categories of this and that. “This” is not “that,” else we would not apprehend its “this-ness” — its identity as a thing in itself, separate from other things. And, indeed, accompanying the impression of that which is other than ourselves is a prereflective awareness of ourselves as somehow apart, away, above, beyond the world we apprehend. For we are aware that we could not be it and still regard it as other than ourselves.

All this is to say that the very existence of our human consciousness implies an act of creation — a discerning, a mediation of a world too full to be apprehended directly. This, specifically, characterizes what it is to be human: to be aware of the world and oneself in it. We are the prereflective reflective. If our nature is thus, how could we not regard the impressions that meet us through new media as the same sorts of objects of consciousness, which must be apprehended as discriminately as any other thing? It is true that we have no choice about the sort of precognitive meaning-making that characterizes our most immediate consciousness of the world. But it is surely from this fact that the possibility of responsibility arises. For if we were not conscious of the world, we would not have the distance requisite to act upon it. (If we were not conscious of it, we would *be* it — we would coincide with it and therefore be unable to establish a place for the will.) It is in the space between that emerges volition, freedom, and responsibility. We make the world and we must continue making it. Though we have no choice but to make it, responsibility flows from our conscious relationship with the world.

Seen in this light, I believe, every apprehension is cast in the light of morality. All meaning comes from us — all meaning exists *for* us. To feign to passively “receive” information is an act of bad faith — a denial of one’s very nature as human. Everything we apprehend — whether stick, stone, or RSS feed — is colored by our consciousness of it. We play an active role in the construction of meaning, and to let this fact slip into obscurity is to relinquish the founding fact of one’s humanity. In other words, as humans, I believe, we are responsible for maintaining an active relationship with the world as we create it.

This kind of account might serve as the beginning of a grounded normative component to Lunenfeld’s argument in *The Secret War*. Seen in the light of a carefully constructed picture of our relationship to the world, we might better establish a *responsibility* to engage critically with new media (being just one facet of our experience). The categories of mindful downloading and meaningful uploading that Lunenfeld elucidates in his manuscript fold seamlessly into this ethical mix.

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BEYOND WRITING MACHINES

Lincoln Hancock

Writing Machines, per the title of Katherine Hayles' 2002 book, are the inscription technologies — the implements and tools — that produce literary texts. This nomenclature at first seems a bit off. These *machines* (Hayles refers to printing presses and computers, for instance) don't *write*. They represent and *inscribe* the writings of human beings, but they do not create *ex nihilo*.

This apparent misnomer, however, actually reveals the thesis of Hayles' book: the technologies by which and through which we apprehend writings are integral to, and perhaps constitutive of the meanings those writings manifest. In fact, we cannot speak of writing, Hayles argues, without referring to the machines that support its being and facilitate its appearance in the world.

This provocative thesis runs counter to prevailing opinion, on the street and in the academy. Hayles observes there has traditionally been "a sharp line between representations and the technologies producing them... literary studies has generally been content to treat fictional and narrative worlds as if they were entirely products of the imagination" (19). I believe she would agree that writing machines are effectively invisible to most readers — few might begin to recognize the profound ways in which their experience of meaning is shaped by the media through which they apprehend.

"There is no reality independent of mediation," Hayles remarks (110). She calls this the "crisis characteristic" of postmodernism. Generally, postmodernism might regard mediation as pure subjectivity — the mediation of consciousness through forms as space and time. In *Writing Machines*, however, Hayles goes some distance towards arguing that the notion of pure subjectivity is inadequate to account for the real ways in which our contemporary experience is mediated. New *technotexts*, she claims, actually suggest that "the appropriate model for subjectivity is a communication circuit rather than discrete individualism...narration remediation rather than representation, and...reading and writing inscription technology fused with consciousness rather than a mind conveying its thoughts directly to the reader" (130). In other words, apprehension of a representation of any sort of communication in a direct, one-to-one manner is not really possible. Meanings change, accrete, morph and refract as they pass through inscription technologies and become fodder for us. Regarding the locus of meaning, "Consciousness alone is no longer the relevant frame but rather consciousness fused with the technologies of inscription" (117).

The arguments Hayles builds through her analysis (or inhabitation) of such technotexts as Mark Danielewski's bestselling *House of Leaves* are developed within the confines of literary theory, but seem to burst forth into the realm of contemporary epistemology. For, aren't these remediated transactions characteristic of everyday experience in the western world? Indeed, Hayles says, "...the materiality of inscription thoroughly interpenetrates the represented world. Even when technology does not appear as a theme, it is woven into the fictional world through the processes that produce the literary work as material artifact" (130). A great deal of our existence is comprised of encounters with the represented world. To what extent does the ground Hayles traverses in *Writing Machines* offer insight into contemporary consciousness writ large?

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MATERIALITY MATTERS: ON KATHERINE HAYLES' WRITING MACHINES

Lincoln Hancock

Katherine Hayles has a bone to pick with traditional literary theorists, many of whom have long been content to regard literature, in essence, as a pure product of the imagination. Words and ideas, to them, are transferrable, unimpeachable forms that manifest only and exactly their author's intent. A tidy notion, no doubt — it meshes easily with our historical views regarding mind and body, reason and emotion — but Hayles believes it is insufficient to adequately capture the way literary works actually create meaning. Hayles argues forcefully that a consideration of *materiality* is indispensable in literary studies. This claim comprises the central argument of *Writing Machines*, and she elaborated on it in a recent seminar with our Masters of Graphic Design class at NC State. Print, Hayles believes, is transparent to most readers and critics — and this is not only illusory, but dangerous. For our perception of our relationships with literary works — the vehicles of narrative meaning that inhabit the modern world — is foundationally compromised by a naïve insistence that literary ideas are independent of their intentionally-constructed physical apparatus.

Materiality, for Hayles, is not coextensive with *physicality*. To speak of a work's materiality is to reference an admixture of physical attributes and human intention. Materiality is culturally anchored, and context-based. To get to the heart of the notion, Hayles introduces a kind of *media-specific analysis*: “a mode of critical inquiry attentive to the specificity of the medium in which a work is instantiated” (L. 3). *Writing Machines* features media-specific analyses of three very different literary works: Talen Memmott's electronic text *Lexia to Perplexia*, Tom Phillips' artist book *A Humument*, and Mark Danielewski's *House of Leaves*. The materiality of the *Writing Machines* pamphlet itself embodies Hayles' argument — mechanisms devised by designer Anne Burdick reflectively orient the reader with respect to the hybridity of verbal/visual meaning-making. A thread of loose autobiography runs through *Writing Machines* (and all the MIT Mediaworks series), further reinforcing the idea that ideas do not, cannot exist independent of a body.

Interestingly, accounts of materiality quickly lead Hayles to descriptions of the circular relationship between a reader and a text. Particularly in *technotexts* — works that foreground the technologies used to produce them — relationships between readers and literary works become the precondition for consideration of those works. Technotexts “mobilize reflective loops” between the imaginary worlds they create and the material apparatus that support their physical embodiment. In other words, to speak of this kind of text is immediately to call into consideration the particular culture and context of the subjectivity that regards it. The reader creates the text through her experience with it, as the text creates the reader through making possible her experience. This subjectivity is, then, supported in its being by the specificity of its encounter with the text. The text becomes the medium in which the processes of mind then run: “...we become part of a cybernetic circuit. Interpolated into the circuit, we metamorphose from individual interiorized subjectivities into actors exercising agency within the extended cognitive systems that include non-human actors” (51). Literature enables us to become new beings. Texts, when considered as material (in Hayles' sense), perform human subjects “who cannot be thought” — who would not exist in this manner — without the “intelligent machines” that dialogue with us in this cybernetic circuit (63).

To be clear, Hayles' assertion is that the very being of certain subjectivities is the product of a reciprocal relationship in which they encounter texts in the world. So, in order to talk about these subjects and their worlds (to talk about literature as ideas), we must acknowledge the *materiality* — remember, the mix of physical attributes and human intentions — of the text.

Materiality is foregrounded in the literary works Hayles considers in *Writing Machines*. Texts are “chunked” into “lexias,” linked to other texts through mechanisms along paths, graced with various affordances, intentionally obscured, made spatial, rhizomatic. Tom Phillips' *A Humument* is an evolving illustrative riff created on the substrate of a Victorian novel he chose at random: *A Human Document*, by William Mallock, the story of a man attempting to edit an assortment of scraps of writing and memorabilia left by two recently deceased lovers. In the original work, Mallock's narrator describes the task: “...as they stand they are not a story in any literary sense; though they enable us, or rather force us, to construct one out of them for ourselves” (quoted by Hayles on 78).

This quote serendipitously describes the epistemic strategy of the technotext, which prompts a reader (user) to investigate a text through affordances provided by its material embodiment. But is this kind of engagement with materiality limited to emergent, non-linear forms of writing? Though Hayles is primarily concerned with nascent literary constructions, it does not seem a stretch to acknowledge that any textual encounter in which a reader is imaginatively engaged can be more fully described by an account of materiality that interrogates the physicality and human intentions comprising the *writing machine*. (I appreciate the title of Hayles' book because it already goes some distance towards reminding us *prima facie* that these forms are *constructed*.) Materiality matters. Our imaginative impressions of even the mustiest tomes are enabled and supported by our apprehensions of their embodied forms, which relate to the contexts in which they were constructed, in which they have lived, and in which they presently reside. Books manifest emotional affordances through culturally-anchored physical aspects like type design and cover art, and through accrued evidence of their encounters with other readers. The same books, read on a Kindle or a desktop display, would evince still other relationships and provide different handles for the imaginative experience. The materiality of a text that is, in essence, a linear narrative may not appear to offer as many avenues for critical exploration as a technotext. But the significance of the work's materiality in relationship to a reader's particular experience of it should not be underestimated. Not only can a consideration of materiality anchor an account of a reader's emotional and imaginative response to a work; it also helps us to appreciate the connections between our minds and the world.

Literature is, in this sense, an extension of the body, enabling aspects of existence not possible before it. Hayles says:

books are more than encoded voices; they are also physical artifacts whose material properties offer potent resources for creating meaning. Indeed, it is impossible not to create meaning through a work's materiality. Even when the interface is rendered as transparently as possible, this very immediacy is itself an act of meaning-making that positions the reader in a specific material relationship with the imaginative world evoked by the text. (107)

The intentional construction of the literary artifact induces meaning-making; draws meaning into the world. Hayles seems to suggest here this holds for even the most traditional transparent linear narrative — if it is literature, it creates meaning through its materiality.

To find meaning in the world, as Hayles does — emerging from our embodied conscious encounters with its structures — follows recent trends in cognitive philosophy. Without venturing into that territory, I think it is fair to say that Hayles' work potentially holds implications for our conception of knowledge and meaning that reach beyond the literary realm. For modern reality is brimming with materiality. Intentionally constructed apparati pepper our landscapes and mediate our experience from the time we wake 'til our eyes close at night. Of course, few of these structures are on the same ontological plane as literature. But a consideration of the materiality of other media may shed considerable light on contemporary consciousness and its dealings with the world. If we can place the mind in a reciprocal relationship — a cybernetic circuit — with media, we shift humans from being mere receivers to active participants in a vivid circle. We grant humans the status to define and refine meanings and messages in dialogue with the world. This fuller picture of human agency and responsibility is a notion with which I think Hayles would gladly comport.

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VIDEOGAMES AND HUMANISM

Lincoln Hancock

Let's face it: videogames are a bit of a joke. Lots of people think they're played only by hopped-up adolescents and cave-dwelling geeks. Perhaps it's become acceptable to spend an evening at home Wii-bowling with friends, or to burn some time playing solitaire at work. But gaming isn't something many people do in broad daylight. Videogames generally aren't regarded as substantive or significant to "real world" discourse. People think they're just for fun; they're trivial; they're disposable entertainment; they're time-wasters. One might have difficulty finding corroboration in the culture at large for a view that anything besides the booming market for videogames should be taken seriously.

Yet, if we can get beyond that cultural bias, there exist compelling reasons for taking a longer look at videogames. It's happening in the academy — at MIT's program in Comparative Media Studies and the Georgia Institute of Technology's School of Literature, Communication, and Culture, for instance — and at independent nonprofit research centers like the Institute for the Future (ITFF) in Palo Alto, CA. It's happening at studios like Virtual Heroes, where serious games are being designed for federal agencies, first responders, and healthcare companies. It's of course happening in the marketplace, where sales of games and platforms are easily outpacing box office revenues. Fully 97% of teens and more than half — 53% — of adults play videogames on a computer, console, or mobile device, according to the Pew Center for the Internet and American Life. Past a kneejerk reaction, it is very difficult to argue with the proposition that videogames are an integral part of this moment and what's to come. I'd like to explore a bit of what I see as the brightest spot in the emerging critical landscape: videogames as producers of happiness. Some of the most compelling theoretical work surrounding games has a strong humanist bent, and I find this both intrinsically appealing and eminently smart.

Game designer and theorist Jane McGonigal (now with the ITFF) refers to videogames as *happiness engines*. "When we're playing games," she says, "we're not suffering." This is a succinct statement in affirmation of a basic humanism — a valuation of happiness as a priority worth considering in design. McGonigal delves deeply into literature in the psychology of happiness and finds four conditions generally acknowledged as necessary in order for humans to feel happy:

- Satisfying work
- The experience of being good at something
- Time spent with people we like
- The chance to be part of something bigger.

All four of these happiness-requisites can be satisfied by a successful multiplayer gaming experience, McGonigal notes (hence games as happiness engines). It's relatively easy to see how the first two conditions might be met by a game; connections to gaming in the latter are not necessarily so obvious. One common misconception about videogaming is that it is a solitary activity, often leading to social isolation. Esteemed author and MIT professor Henry Jenkins disputes this point in an article written for PBS, "Reality Bytes: Eight Myths About Video Games Debunked." Jenkins observes that:

"Much video game play is social. Almost 60 percent of frequent gamers play with friends. Thirty-three percent play with siblings and 25 percent play with spouses or parents. Even games designed for single players are often played socially, with one person giving advice to another holding a joystick. A growing number of games are designed for multiple players — for either cooperative play in the same space or online play with distributed players."

Massively Multiplayer Games are emerging that *blend realities* — as Jane McGonigal says — layering a game world on top of (and into) the real world to enhance and activate mundane spaces and activities. Many of these games can imbue a player’s experience with sense of personal connection even if a player doesn’t directly or immediately come into contact with another in course of play. For instance, a player might use GPS to track down an object hidden by another player at another time. The sense that one is not alone, that one is responding to or cooperating with others, is integral to the experience.

The fourth condition of happiness — the chance to be part of something bigger — is being enabled in radical ways by our postindustrial, networked world. Nowhere is this more apparent than in mass collaborative enterprises like Wikipedia. Designed products, situations, and systems are emerging that allow almost anyone to contribute to projects with unimaginably ambitious goals. Writer Clay Shirky believes we are experiencing the early stages of social transformation on scale with the industrial revolution thanks to what he calls a “cognitive surplus” — a storehouse of intellectual, perceptual, potentially collaborative energy that has been stewing since the 1950s. We have accumulated vast societal wealth, knowledge, and leisure time, he says, which we’ve not known how to channel. For fifty years, as a culture, we’ve been steadily wasting this surplus away with the assistance of disposable entertainment like the television sitcom. Slowly — finally — we are realizing we can engage with the world in more substantive ways. While Shirky acknowledges that people do enjoy *consumption*, he notes they also like to *produce*, and they like to *share*. We’ve discovered it’s better to do *something* than to do *nothing*, he says, even if that “something” is as seemingly reductive as typing a grammatically egregious phrase onto a photo of a cat. Even LOLCATS, Shirky observes, extend “an invitation to participation” that simply did not exist during the TV era. And this participation has been enabled by the web.

But mere participation — simply being a “live node on the network,” as Peter Lunenfeld says — does not amount in itself to being a part of something bigger. That’s where designers — videogame designers and interface designers — come into play. New structures and projects have shown it is possible to tap into the cognitive surplus in immensely powerful ways. And we have only just begun to sense the potential: Shirky estimates the sum total of work on Wikipedia represents somewhere around 100 million hours of human thought. By comparison, we spend about 200 *billion* hours a year watching TV. That’s roughly 2000 collaborative projects on the scale of Wikipedia lying in wait.

Clay Shirky’s insistence that people *want* to share has huge implications for the products, games, and systems we are producing and in which we are participating today. He relates an anecdote about his daughter searching frantically behind the TV for its (nonexistent) mouse in order to make his point: “A screen that ships without a mouse is *broken*.” Shirky here echoes Jane McGonigal, who says, “*reality* is broken.” We have tasted the fruit of reciprocal, productive engagement with our world, and we now demand more from our lives and the designed experiences that permeate them. Our happiness depends on a new dynamic with a better return; better affordances for constructive play; a system with both inputs and outputs.

Videogames provide these kinds of affordances. Well-designed games also help players satisfy their cravings for rewarding work, pride in a job well done, and time with people they like. If we value human happiness, then we have strong *prima facie* reasons for paying closer attention to videogames, game design and their uses, present and potential. But how, precisely, can we see videogames — which in essence involve *play* — as contributing in substantive ways to society? The “chance to be a part of something bigger” of which McGonigal speaks and on which Shirky elaborates does not necessarily make claims for an impact beyond the game world. Shirky, to be sure, is not specifically advocating for games as the mechanism by which we might best tap the cognitive surplus — though I think there is a case to be made for that position. The missing piece of the critical picture is a bridge between videogames as one possible way to make use of the cognitive surplus and videogames as a potential constructive force in the world. This bridge would allow us to see videogames as structures that somehow afford us the ability to make positive change in the world (while making positive changes in ourselves, as we have already established).

Videogame designer and Georgia Tech Professor Ian Bogost takes a step in this direction in his book, *Persuasive Games*. The book looks at the ways in which videogames “mount arguments and influence players” (viii). Bogost argues that the *procedural rhetoric* by which gameplay evolves in well-designed systems is of far

greater importance than the specific content of games. The “rule-based representations and interactions” (ix) of the gameplay itself are the mechanisms by which games persuade and teach players about the world. “In addition to becoming instrumental tools for institutional goals, videogames can also disrupt and change fundamental attitudes and beliefs about the world, leading to potentially significant long-term social change. ...all kinds of videogames, from mass-market commercial products to obscure art objects, possess the power to mount equally meaningful expression,” he says. As designed objects and systems, videogames express their points of view much in the same way is art, poetry, literature — through discourse that aims “to get to the bottom of human experience in specific situations” (340). In this sense, the procedural rhetoric of games is related to other humanistic practices. The design of a game makes claims about processes fundamental to human existence through its selective interrogation of them. The worldview expressed by a game is a unique mark that can become a source of inspiration or displeasure. Encountering a videogame is like encountering a work of art — when it works well, it reveals to a viewer, participant, or player a world to be learned, sorted through, reckoned with, evaluated, and embraced or denied. It reminds and affirms or calls into question our values.

Videogames, in light of emerging critical theory, are much more potent and relevant than the juvenile pastimes they’re often taken to be. The work of people like Jane McGonigal, Clay Shirkey, and Ian Bogost indicates that games can (and will) play a role of remarkable importance in years to come. And, optimistically, they present compelling arguments that this future of blended, augmented reality can be more satisfying, more convivial, more sustainable — more human than the alternative. If, that is, we do the work — design well, play conscientiously.

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SAMYUL KIM

ATTRIBUTES OF THE NEW MEDIA ENVIRONMENT

Samyul Kim

Through reading the insightful thoughts in *New Media*, I have learned three key concepts that work as a formation in a contemporary media environment. I believe that interface in the present media conditions requires variability, appropriation, and interactivity. Lev Manovich states, “Media and computer merge into one. In short, media become new media.” Knowing the origins of new media helps to identify the environment of interface. Manovich also classifies five principles of new media, which are numerical representation, modularity, automation, variability, and transcoding. Each principle has its own factors such as digitization, compartmentalization, computation, infiniteness, and reconceptualization.

I am particularly interested in variability, which holds endless possibilities in new media. According to Manovich, variability is one of the core characteristics of new media—it can exist in different, potentially infinite, versions. Variability works under modularity in digital computation.

Jay David Bolter and Diane Gromala discuss the shake between “transparency” and “reflectivity.” “Windows and mirrors” is a metaphor of transparency and reflectivity. An example of this is the way HTML was developed by computer scientists who prioritized transparency of information (the delivery of information clearly to the user) and the separation of form and content. They disconnected the code from its form. However, designers still consider both content and form simultaneously—code as structure and the visual representation as

its form. Most web building programs use, or are based on, text-based HTML. Dreamweaver has a useful function that allows the user to see both the coding and its visual presentation at the same time. Even though the activity of coding in the short term disconnects the programmer from intuition and the senses, the coding behavior can be simultaneously proofed in a visual form right in the next window. Designers usually have difficulties using programming software on screen without understanding the connections between visual representation and the programming language. This is a dilemma in the reality of the separation of form and content within screen-based software.

Secondly, I am intrigued by appropriation—one of the significant characteristics of new media—that reconceptualizes things in terms of relationships. An example is the way a typeface shifts its representation when used within different media in terms of relative viewpoint. The representation changes with the medium—paper is analog, screen is digital—each has its own appropriate conditions. Georgia is my favorite typeface among serif faces. I have wondered why serif fonts are not welcomed in contemporary environments, especially screen-based design. I have begun to think it is mostly a legibility issue.

Matthew Carter, the stellar typography designer of our time, might have had the same question a few decades ago, and I think Carter carried out his mission in the digital era. Having designed some of the most successful print fonts of the 1960s and 1970s, he pioneered the development of digital typefaces during the 1980s, and started work on Georgia in the early 1990s when Microsoft commissioned him to develop a new family of fonts that could be easily read on screen. Carter began by analyzing why existing typefaces looked fuzzy on computers. One reason was that i, j, l and 1 were difficult to distinguish. Another reason was that the characters needed to be spaced differently than in print. He designed a sans serif font to address those problems, and then started work on a serif. It was the trickier of the two. Designers can make the characters of a print typeface in whichever length or width they wish, but digital fonts are constructed from pixels of a fixed size. The fiddlier the letters—and the more details like serifs—the chunkier they will seem. Another hitch was that the numbers looked confusing, which is why Carter varied the sizes. It is a tribute to his skill that he created a collection of pixels that looks as fluid and elegant as the gorgeous 18th century serif fonts Baskerville and Bodoni.

I am lastly inspired by interactivity, which is one of the most important characteristics in new media. I am particularly interested in a notion of trust in participation within invisible communities. Civilization is significant in new media but it requires responsibility and ethics among its members. John Thackara argues, “connections between people can be enabled by technology, but trust is dependent on the passage of time and the neighboring of bodies.” I think engagement and responsibility is required in community interaction.

Learning from site-specific art, Miwon Kwon impresses that communities are not simply used in terms of environmental or architectural design. More importantly, the emphasis on the social stems from the belief that the meaning or value of the artwork does not reside in the object itself, but is ensured over time through the interaction between the artist and the community. In order to interact with each other and understand others, we need generosity. “Generosity became the medium or methodology and the subject or product in contemporary society.” says Mary Jane Jacob in her essay *Reciprocal Generosity*.

Three core ideas help to identify a contemporary notion of individual customizations, conviviality, and flow beyond a screen (a flat, rectangular surface). These concepts naturally lead me to questions: such as, what aspects in other disciplines can I adapt in my current investigation about interface? Manovich suggests modern media and art pushed each of these techniques further, placing new cognitive and physical demands on the viewer. Contemporary media blurs conventional boundaries beyond the physical and mental structures of humans, content and interface in digital media, and actual and virtual realms of new media.

We work and service designers need to comprehend the constant change in new media and master the way we look through lenses of complexity in this new environment. We need open-minds, flexibility, and exchanges with other disciplines and cultures. Through our own efforts in design exploration, we can reframe design and interface systems, as we focus on the design tasks in our everyday life.

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PETER LUNENFELD

Samyul Kim

The Secret War between Downloading and Uploading Among Other Tales of the Computer As Our Culture Machine by Peter Lunenfeld resonates rising contemporary new media issues and brings further questions regarding relationships between the new media environment and the designer's role. I am intrigued by his key concepts such as our engagement in the computer as culture machine era, new conditions in the secret war, unbalance activities between consumption and production, characteristic in Unimodernism, Web version and its property value.

Lunenfeld argues "War between downloading and uploading, and its outcome will shape our collective future in ways we can only begin to imagine." Although we are in swirl of culture machine surrounding, we need to aware where we are and think about what is appropriate way to survive and how can we situate ourselves in this constantly changing contemporary environment. What is role of Interface in this condition?

As Lunenfeld mentioned "toggling" behavior, we compromise ourselves to be anonymous in cultural flow and let something control ourselves effortlessly. "*In the unfinish: continuous partial production*," Lunenfeld encourages our effort in meaningful uploading in order to balance between downloading and uploading. What can designer learn in this downloading-oriented culture machine? How can designer facilitate in participatory/meaningful uploading through interface?

In exceeding web versions, Lunenfeld states issues such as "who is owner/resident in this undeveloped landscape? what is the principles in new property?" In this context, Lunenfeld suggest designers reframe our roles and responsibilities such as embrace pro-sumers, conserve function of input device, and culture machine infrastructure system service under our control.

Respond and Questions:

I have been frustrated in between unstable and complex nature of new media environments and stable and onlooking observers of the nature. Although many of new media related thoughts in readings I have read help me to reveal things/events/phenomenons in the current media, the opinions in readings are loosened and outdated. I think the nature of new media is still shifting and changing at this moment, the nature beyond exceeding digits run always-ahead human observation and even away from our vision. In this context, I have learned Lunenfeld's insights through selected examples in contemporary contexts.

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AUTHENTICITY IN NEW MEDIA

Samyul Kim

From Peter Lunenfeld's unpublished manuscript and his virtual lecture and class discussion, *The Secret War Between Downloading and Uploading*, Lunenfeld argues contemporary issues in the computer, which he refers to as a "culture machine," and raises questions about the role of designers in this silent combat. Lunenfeld argues that uncritical downloading (consuming) information causes meaningless uploading (producing) of knowledge in

the explosion of new media culture. In a case from Twitter, Lunenfeld coins the term “*continuous partial production*” from Linda Stone’s phrase “*continuous partial attention*” in order to explain inverting conditions in new/multiple media culture.

Lunenfeld resonates a notion of “*unfinished: continuous partial production*” in the emerging network society. Lunenfeld piques my curiosity to ask questions; where does authenticity come from, what is authenticity, and how can I see authenticity correctly in these uncompleted conditions?

In a perspective of mindless consumerism, Lunenfeld labels the unbalanced portions between uploading and downloading behavior as “*cultural diabetes*.” Lunenfeld concerns himself with the fact that “sticky culture is more sticky than a fan-based Teflon production, no matter how participatory.” Although we are in a swirl of “*open sources*”, we need to be aware of where the root of sources is, in order to appreciate a being of origin and situate ourselves in “disrupting the flow of media that surrounds us.”

Where does authenticity come from?

Humans reproduce things effortlessly. Lunenfeld mentions “*togging*” behavior—we compromise ourselves to be anonymous in the cultural flow and let something else control ourselves. Technology has made precision in multiplication the domain of the machine, forcing the essence of human creativity to retreat slowly from the hand to the head. The benefits of this retreat are fruitful sources, but they release functionality from human control. The most important issue of freedom of control is letting technology overrule the human mind and creativity. This smug, unexamined assumption is blinding us to a more fundamental shift. In a contemporary environment, the transforming agents are nano-technology, the global-network, and the virtual-information explosion.

In *Design Culture*, Paul Saffo, a future forecaster, claims “human culture has been shaped by a dance of two opposing forces: memory and forgetfulness. Memory gives us context, while forgetfulness provides an opening for invention and originality. Successful creativity occurs when the two are balanced and originality is set within the larger context of tradition.” In the *Phaedrus*, Plato expressed the fear that writing would make human memory lazy. In fact, “memory” became the central tool after the invention of the printing press and “*movable type*,” the interactivity between human and memory through printed material. The appearance of printing as a medium provoked a shift from use of the mind as storage to the mind as processor. Every information innovation enhances human creativity through communication, processing and memory.

What is authenticity?

Authenticity requires human-oriented endeavors. Now we are on the border of an information revolution that is a very different kind—movable information along with an emergence of audience. “*Infinite*” audience interaction triggers a hyper-dynamic universe of connections, relationships, and abstracting tools. Already, we are in “infinite” remembrance of information. All can be stored and nothing can be forgotten. With digital technology, duplication comes from effortless clicks and a boost electronic junk mail through the global network. Digital reproduction and replication extends rather than extinguishes the root. The emergence of incomplete recall and interaction may be more likely to extend and redefine authenticity.

The history of the “*culture machine*” became a pattern of multiple points of authenticity with patterns of copying and pasting spreading out from them. Saffo persists “I think we will rediscover a preindustrial fact: origin is not a point but a continuum, and the process of originality is much more linked than we imagine.” This phrase makes us consider that an agent of unlimited memory is an agent of unlimited unity of deeply interconnected relationships. For the greater notion of authenticity, we would be better to examine open-boundary for multi-individual to multi-unity. A designer can be intertwined with an enthusiast group, an unexpected event, or a meta-thoughts visual archive.

How can I see authenticity correctly?

Lunenfeld states “What an author produces is open to revision and those who used to be readers or listeners or viewers can become users, through appropriations remixes and creative reuse. The idea that everything is essentially an iteration can be terrifying because it encourages an endless tweaking rather than a commitment to the discrete project with a beginning and an ending.” Reconsidering a notion of authenticity in

the new media culture supports Lunenfeld's perspective and raises questions about how designers can facilitate a notion of authenticity in this new culture with technological aids.

Oded Ezer, a graphic designer, declares his position "I do not see myself as a scientist or an artist, just as a typographer who wants to break barriers." For future practice, Ezer will experiment with the concept Biotypography, through which he aims to produce new "transgenic creatures" by fusing typographic elements with, say, ants or human sperm. With another concept, Typoplastic surgery, he envisions letters being grafted onto the human body, like decorative limbs.

Saffo's phrase, "*Origin is a continuum*" needs to be shifted to "*Authenticity is a multiplying multiple continuum*" in 2009. Nothing is new. The new agency of wasteful reproduction alters the notion of authenticity. We need to be aware of this new tendency and situate ourselves in the new flow as active providers rather than passive onlookers. The quality control of authenticity is a critical concept that designers diligently review in order to promote a new notion of reliability. The designer's quest for attribute control in these shifting conditions has already started the understanding of an exploding continuum of new cultures. New roles of designers may facilitate the human context of sense and control in infinite reproduction with the assistance of new agency. That, I think, would be the most authentic role of the designer in this contemporary digital era.

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KATHERINE HAYLES

Samyul Kim

In the book *Writing Machines* (and its web supplement), N. Katherine Hayles mixes her own narrative with media-specific literature. Hayles speculates how literary texts can be represented and reproduced through multi-media. In particular, Hayles claims that the materiality of literary text should be inhabited within the materiality of artifact. Hayles emphasizes a notion of inter-dynamic play that is woven into fictional worlds through the remediation process.

Inscription through layered-metaphors

In *Embodiments of Material Metaphors*, Hayles claims new ways to read texts with theory. Hayles suggests a new possibility of texts that delivers both "the generalities of theory and the particularities of personal experience" in conflicting voices. Gradually, two different voices merge into each other finally becoming a unified entity. The two voices of personal experience and theoretical argument alternate through the reading experience and guide readers through the theoretical ideas at the state of the *Writing Machine*. Even if the transparency of text and its meaning is clear; readers progressively build their own meaning through the imaginative world of the text. Materiality deeply affects subjective meaning creation. Literary texts require bodies where materiality and meaning are represented. Hayles emphasizes a critical practice of materiality and engagement, unfolding the possibilities of uncertain things that interact with the physical inhabitant.

As Mark Johnson states in "*Metaphors we live by*," we cannot continuously recognize metaphors in our world. Because we cannot identify inside and outside, container and contained being of meaning. What we assume is the inside must be smaller than the outside, the contained must be smaller than the container. Once we disregard our assumption, the house, for instance, it distorts our presumption and remains unrepresentable. Hayles recalls the visualization of M. C. Escher's ascending/descending staircases. The staircases do not make sense in the physical world, but they make sense in the imaginary world through visualization. No one can perceive/apprehend ascending and descending simultaneously in the cognitive perspective. However, one who trusts/explores the realm of ambiguity/unconsciousness can imagine/walk ascending and descending staircases.

In this context, the existence of a new borderland beyond objectivity compels the speculation of hyper-remediation through subjectivity.

Signifier through multi-representations

Hayles discusses Mark Z. Danielewski's contemporary novel "*House of leaves*" in order to theorize two key structures in the novel. These key concepts are the materiality of inscription, intricate and multi-layered narratives; and a materiality of the signifier, typographical variation and inconsistent page layouts. *House of leaves* introduces an appropriate model for subjectivity that can communicate through its own material metaphors. Aiming materiality approves us to see the dynamic interactives through complicated growing narratives. In *House of leaves*, a literary text prompts its physical embodiment in connection with its verbal signifiers to build meanings and hint at the meaning of meanings.

Hayles points out that two distinguishing factors in *House of leaves* are "the claim of the print book by showing what print can be in a digital age" and "the vitality of the novel as a genre by recovering, through the processes of remediation themselves, subjectivities coherent enough to become the foci of the sustained narration that remains the hallmark of the print novel."

Hayles' *Writing Machines* reestablishes what it implies to read/see/interact text by connecting readers through "interactions with materiality." Through the lesson of contemporary literature, graphic designers should understand new ways of altering inscriptions and deliver twisted messages through the appropriate signifier with the advantage of technology. Contemporary literature stimulates designers' explorations in methods of communications. Image-centered culture stimulates designers' speculations in methods of communications.

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HYPER-REMIATION

Samyul Kim

In *Writing Machines*, (as well as the web supplement and lecture at NCSU), N. Katherine Hayles explores the ways mutating her narrative with media-specific literature. Hayles speculates about how literary texts can be represented and reproduced by multi-media methods and voices. In particular, Hayles claims that the materiality of literary text should be inhabited within the materiality of artifact. In a vehicle of Anne Burdick's design, media-specific analysis of literary works (*Lexia to Perplexia*, *Humument*, and *House of Leaves*) drive Hayles' argument — the materiality promotes inter-dynamic play that is woven into a fictional world through remediation processes guide readers to new territory and realms of personalization. Even if the transparency of the text and its meaning is clear, readers progressively build their own meaning through the room of an imaginative world underneath the text.

Embedded metaphors remediate the inscription of the *Writing Machines* itself and generate multi-channel dialogues within the messages and with readers. Hayles theorizes a new possibility of texts that delivers both "the generalities of theory and the particularities of personal experience" in conflicting voices through embodiments of material metaphors. Hayles' narrative and argument, two very different voices, gradually merge into each other, and then become a unified entity. The two voices of personal experience and theoretical argument alter another reading experience and remediated metaphors deeply affect subjective meaning creation. Contemporary literary texts require their bodies, where meanings are represented by materialities. Hayles accentuates a critical practice of meaning creation that unfolds the possibility of discovery through interactions with the physical world.

Embodiment examining Mark Johnson's "*Metaphors we live by*," we hardly recognize the metaphors in our world because the meaning of inside and outside, or what the container and contained nature of being stands for is taken for granted. What we assume is the inside should be smaller than the outside, the contained should

be smaller than the container. Once we disregard our assumptions and what we take for granted, we can represent our imaginative realm as overcoming our presumption and regulation in reality. Hayles recalls the visualization of M. C. Escher's ascending/descending staircases. The staircases do not make sense in the physical world, but do make a sense in Escher's imaginary world. No one can perceive/apprehend ascending and descending simultaneously in their cognitive perception. Despite limited physical structures, in this context, the existence of a new boundary beyond secure territory compels the reader's exploration into new land through *hyper-remediation*.

Multiple representations remediate signifiers. Hayles discusses Mark Z. Danielewski's contemporary novel *House of Leaves* in order to theorize about key structures in the novel. A reader who trusts/explores the realm of ambiguity/unconsciousness can imagine/encounter ascending and descending staircases. These key concepts are the materiality of inscription; intricate and multi-layered narratives, and a materiality of the signifier; typographical variation and inconsistent page layouts. *House of Leaves* introduces an appropriate model of representing subjectivities, which can communicate through its own material signifiers. Exploring the materiality of embedded dialogues allow us to see the dynamic interaction of growing multiple narratives. In *House of Leaves*, a literary text prompts its physical embodiment in connection with its verbal/visual signifiers to build meanings and hint at the meaning under the meanings.

Hayles points out two distinguishing factors in *House of Leaves*, "the claim of the print book by showing what print can be in a digital age" and "the vitality of the novel as a genre by recovering, through the processes of remediation themselves, subjectivities coherent enough to become the foci of the sustained narration that remains the hallmark of the print novel."

The novel alters the medium of inscription and incorporates processes of remediations along with layered stories. Through four-folded layers, in the following example: "moving from Navison and Karen at the time of filming, through Navison as he edits the film, to Zampano's initial viewing of the film, to his re-creation of the scene for us," the layering adds a fifth layer of mediation of "the putative viewers." The layering is further complicated according to "Samuel T. Glade," a critic in the text who points out the ambiguity of Navidson's reply of "no" to his wife. It could refer to "either "watch," "bald," or "sorry" or all three." Hayles supports the layers in the novel by stating "these complexities all come from the multiple remediations of the supposedly original moment ... Thus subjects ... are evacuated as originary objects of representation but reconstituted through multiple layers of remediation" (114). Subjects alter objects of representation, but reconstruct the manifold layers of remediation. The house in the *House of Leaves* represents a district near a boarder between "the metaphoric and the literal, the imaginary and the real" through the remediation of recorded film in the novel.

Amazon introduces a second version of electronic book, *Kindle*, in February. In the review of the device, *Kindle* carries a million of books in its slim body with its eye-comfortable display technology. Through overbearing its portability and text friendly technology, *Kindle* disregards readers' experience through volume of papers disregarding possibilities of linking multiple visual/verbal channels. Mobile technologies, including *Kindle* abstracting interaction in electronic virtual spaces. What valuable interactions are lost by this shifting trend? How can designers correctly consider electronic reading, writing and sharing experiences in abstracted/abstracting messages and facilitate the potential of remediated/remediating interactions? Ray Tomlinson, the developer of electronic mail, did not expect the infection of virus in junk mails. We can hardly predict the altered impact of abstracted physicality in the future.

Hayles' *Writing Machines* reestablishes what is implied by reading/seeing/interacting with text, connecting readers through "interactions with materialities." From the lesson of contemporary literatures, designers should apprehend new ways of altering inscription, and deliver twisted messages through appropriate signifiers in conjunction with technology. Contemporary literature stimulates designers' explorations in the methods of communication. Image-centered culture stimulates designers' speculations in seeking new tools for communication. The demands of authors and readers assign new tasks to designers, and these new tasks lead designers on an exploration for new spaces through hyper-remediation.

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IAN BOGOST

Samyul Kim

In South Korea, government supports the game industry “*Electronic sports*.” Young professional gamers “*Electronic sports stars*” prosper in the media commercials. Primary pupils want to be pro-gamers. Since the game culture has thrived in 1998, exploding the game culture grows the body of culture, whereas the immaturity of the culture cause dissoluteness. Adults neglect the game culture, youngs learn games before awaring themselves as a part of society. Adults’ ignorance about the influence of game culture potentially causes fatal problem to game players through individual and mutual experience. In this circumstance, I inevitably involved in game culture and knew an online game—*Blizzard’s StarCraft*—in late 90’s. While I have learned the game algorithms, I was numerously frustrated and challenged by game regulations, team players, and myself. The complexity of multi-role playing and story digging in learning the simulation demand a player’s ultimate tension in rules and players—virtual society in virtual empire—in game.

A key concept of game is mastering skills in sequences of stimulation in general and going though the infinite loop of birth and death in particular. Owing predefined rules and skills are fundamentals to support team playing in virtual space. *StarCraft*, the contemporary strategic online game, evokes empathetic engagement before/during/after the game playing. While the player engages in the virtual game, the player personifies in the alternative reality. The entertainment at play is altered attitude seriously in game thanks to empathetic involvement. Survived/surviving gamers have to plan focused strategies, maintain versatile performances, and review the team play options. Life and death in virtual world stimulates addiction in the game. Emotional devastation is a byproduct.

Game is not neutral to players. Contemporary online games expose utmost mental simulation—“*let-alone*” principle beyond “*controlled*” principle. How can this happen? Game developers fundamentally construct structures of online games as an extreme emotional stimulus. A short-term death and revival in virtual self impacts a long-term mental destruction in real life.

My skepticism around a ruptured gap between game theory and practice, developer and player—detached ethical code—can be employed in contemporary design. User-centric design requires users’ simulation and interaction. Persuasive and expressive principles in process influence users. How can we foresee the influence? Ian Bogost claims “As creators and players of videogames, we must be conscious of the procedural claims we make, why we make them, and what kind of social fabric we hope to cultivate through the processes we unleash on the world.” Lesson from online network game is the consideration of human being and the question of the consideration. Human consciousness and behavior study is not suffice to prove emotional human consequences.

I currently read game reviews about an execution in virtual plaza, weapon trading in online and offline, and mental disruption cases. Nothing is impossible in the realm of virtual world. Growing blind spots leashes a license from freedom. Answer would be considering Bogost’s question, “who we are, how our world functions, and what we want it to become.”

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LEARNING FROM ONLINE GAME EXPERIENCE

Samyul Kim

Videogames lack the social standing because they are recognized to be trivial and meaningless in youth culture. As a game researcher, critic, and designer, Ian Bogost claims the power of videogames that they are capable of

informing, persuading, and entertaining—the power of rhetoric—in Persuasive Games. Analyzing the power of videogames to set arguments and influence players, Bogost widely studies numerous examples from the fields of politics, advertising, and education while he builds a formation of new discourse—procedural rhetoric. From the *Plato* to *Atari Video Computer System* to, 2 dimensional videogames joined youth life in 80's. From the Multimedia Personal Computer to Mobile videogame console, multi-dimensional videogames connected youth culture in 90's. In particular, contemporary on-line multimedia games manifest themselves with texts, images, and time-based motions and influence players with interactions, networks, and beyonds. Expanding boundary of games, on-line games induce players through impact of multi-channel dynamics. Influences are great and critical to young players in reality. How the impacts proceed and who control the impacts? Questioning how procedural rhetoric transform young players envision practical impacts and potential sakes from gaming.

Experiencing the online game

Knowing the game is different from experiencing the game. Experiencing the advanced game encounters infinite feedbacks between input and output, self and replica, and mind and game. Fascinating the feedback loops create own metaverse (greater universe beyond our perception) and motivate further ventures to the player.

In South Korea, online game activates friendships and builds social relationships. Requirements are personal computer, reliable network, and game software. Government supports the game industry “*Electronic sports.*” Young professional gamers “*Electronic sports stars*” prosper in the media commercials. Primary pupils want to be pro-gamers in their future. Since 1998, the culture of online game has thrived in the country. Exploding the game culture grows the body of culture, whereas the immaturity of the culture causes dissoluteness. While grown-ups neglect the game culture, youngs learn games before awaring themselves as a part of society. With generational and technological gaps, ignorance of the influence of game culture potentially causes various problems to young players through personal and mutual experiences.

In this circumstance, I naturally involved in game culture and knew an online game—*Blizzard's StarCraft*—in late 90's. While I have learned the game algorithms, I was numerously frustrated and challenged by game regulations, team players, and myself. I can barely ran the game by myself for a year practice. In crafted programming language, online-game demands a player to master skills and craft own strategies. For years of self-taught and team-taught, I can start to engage in unfamiliar virtual environment. The complexity of multi-role playing and story digging in learning the simulation expects a player's ultimate tension in rules and players—experiencing virtual society in virtual empire—in game.

Unleashing the license (from freedom)

Game is not neutral to players. The concept of online game is shifting conditions of sequence and tenseness in general and undertaking the extreme repetition of birth and death in particular. Owing predefined rules and skills is fundamentals to run the game. It supports team playing in game. *StarCraft*, the contemporary strategic online game, evokes empathetic engagement prior, during, and post the game playing. While the player engages in the game, the player personifies oneself in the alternative reality. The entertainment in game play alters player's attitude seriously under empathetic stimulations. How can the game alter the player? Game developers fundamentally construct structures of online games as an extreme emotional stimulus. A short-term death and revival in virtual self impacts a long-term mental destruction in real life. Each moment in serious play stresses and exhilarates the player. Survived players have to plan different strategies, maintain versatile performances, and review the possible team plays. Simulation of life and death in virtual world stimulates addiction in reality. Addiction is procedural rhetoric in learning the online game. Dependency in the game trains the player, it numbs one's emotion. Addiction is emotional devastation. It penetrates mind deeply, because nature of online game interacts with extreme emotion. Power of game can deconstructs players' mind. Online-game is no more predefined rule game. Online-game unleashes the license.

Controlling the player

How can we control the game before the game controls us? Contemporary online games expose utmost mental simulation—“*let-alone*” principle beyond “*controlled*” principle. Game obtain authority over players is

unfortunate consequence in online game. Influences from game are greater than programmed software. Influences bear living organisms.

My skepticism about a ruptured thread between game theory and practice, developer and player—detached ethical code—can be another niche to construct new platform. Human influence is less predictable than machine influence. How can we facilitate constructive human simulation and interaction? How can we foresee the influence? Although we may not foresee the influence, developers and designers can influence persuasive and expressive rhetoric. Ian Bogost claims “As creators and players of videogames, we must be conscious of the procedural claims we make, why we make them, and what kind of social fabric we hope to cultivate through the processes we unleash on the world.”

Lesson from online game experience is the consideration of human influences and the consequence of unexpectedness. The lesson implies how can we perceive current phenomenon of emergence, networking, and interaction. Human influence game, as game influences human. Studying cognitive and anthropology are not sufficed to prove emotional consequences. “*Platform studies*” may construct ethical code as questioning how can we control players, human beings. Bonded ethical code beneath platform is a formation for developers, programmers, and designers.

I currently read game reviews about an execution in virtual plaza, weapon trading in online and offline, and mental disruption cases. Nothing is impossible in the realm of virtual world. Growing blind spots in online space unleashes a license from freedom from youths. Game manipulates new meaning to technological simulation in radical manner. Considering Bogost’s question, “who we are, how our world functions, and what we want it to become” is a departure point.

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DANIEL MCCAFFERTY

OPPORTUNITIES IN EMERGING PRACTICES

Daniel McCafferty

What has emerged to me in reading these pieces is that a reliable, tried and tested definition for interface is not really out there. Its resistance to be properly pinned down reminds me of another word that shares this delinquent nature: design. For me, this works out well, because leaving it open and somewhat nebulous means that it is free to be played with, twisted around, questioned. However these readings, when taken together, form a triptych narrative that provides contrasting contexts for some issues, potential uses and scenarios that surround interface, as well as design’s current and possible future role therein.

Bolter and Gromala paint a rosy picture for design and interaction technology. Their unbridled enthusiasm is at times saccharine, distracting from some of their interesting observations. That said, they do describe a context that seems unique and that is one where art and artists have a central, integral and relevant role to the development of these emerging digital technologies. This notion is new and exciting for me. We know art is one domain that, through its marginalization, is able to challenge our status quo and social norms. Most often it does this alone, in isolation, quietly working away at ideas. Eventually the social mainstream does catch up and adopts their ideas. However we know this never happens overnight – we fear the “new.” In the case of technology, technologists seem to have recognized the artist’s central role in brining about change through imagining new worlds and possibilities. One concern with this use of art is a fear of exploitation and appropriation of the artist in

the search for commercial success. Who decides when and where and how artists participate? Hopefully these relationships are mutually beneficial.

The inclusion of art into the development of interaction design has a direct impact on design, according to the authors. “Digital art is an expression of this new design philosophy.” This new philosophy is the combination of graphic / visual design and information design in the digital realm, towards the goal of creating experiences that are compelling. The authors continually refer to the role of the artist-designer, as the choreographer of experience. Undoubtedly this has a pleasingly poetic ring to it, but perhaps it is really the best or most productive way for designers to think about their potential contribution to this, or any emerging genre / practice. As was mentioned, with a definition of interface so uncharted, it may make perfect sense for designers to shed their tendencies towards problem / solution approaches for one that is more about choreographing or set the stage / create conditions.

These emerging practices feature designers, artists, technologists contributing to the shape of worlds to come. In *The Language of New Media*, Manovich concludes that the study of new media is essentially a combination of traditional media studies together with computer sciences. Adding scientists and media theorists to this mix, we begin to understand the complex nature of this work, as well as how it may be an environment where a truer form of collaboration really has to exist out of pure necessity.

Thackara claims that design today has to move towards facilitating and away from making. While he comes off sounding bombastic, these readings are evidence of the collaborative nature of this field, and therefore the need for facilitating. That said I do not believe that designers are necessarily better poised to be the facilitators. In these collaborative environments, all contributors need to exhibit degrees of this skill, because a truly collaborative environment, in my opinion, are free(r) of the types of traditional hierarchies that Thackara espouses by making claims like this. Reading Thackara and dogmatists like him often make me wish design were more humble.

Transparency

I believe that Bolter and Gromala echo and elaborate my concern about transparency, written about on our blog—that transparency is more about getting out of the way than being invisible. “Technology as transparent and technology as invisible are two different things... The idea of transparency is a misnomer, if it becomes invisible, more of us lose the ability to control, affect, and critique it.” If technology is transparent, it cannot reflect us. If it doesn't reflect us, if we cannot see ourselves “in” it, which means we cannot shape it, critique it, determine it. When we incorporate these abilities into our technology, the experience can ultimately be more compelling.

This seems also to relate to Thackara's plea, in the introduction of his text, to try and help people feel in control (generally). He says “Things may seem out of control, but they are not out of our hands.” I wonder in some ways our ability to “really” understand the technology that surrounds us diminishes at an ever-expanding rate. For example, a typical designer working in the pre 1995 had a close relationship with most if not all the aspects of production, pre-press, type-setting, colour, printing processes, paper qualities even differences in press types. These are the technologies that affected their work. If you take a typical designer today and ask them to design for the web, most will give you an Illustrator drawing. Few have knowledge of the technologies that control even basic interactions/interfaces, like HTML, let alone Action Scripting, Java, Ruby. How could knowledge of these change our relationship to interfaces, to its ability to reflect us back to ourselves? What if designers could design these programming languages? Are programming languages that control the bones of our interfaces actually a new genre of design? How could we control these experiences if we had control over these interfaces? Or, could interfaces one day rely less on abstract esoteric languages, thereby be more accessible to us so that we could understand and control them the way we want? I think about this in relation to transparency: 20 years ago it would probably have been easier for me to fix the engine in my car, than it is today to repair a broken key on my keyboard.

Manovich hints at the implication of computer logic over human in his section on Transcoding section, saying : “its structure now follows the established conventions of computer's organization of data.” What implications does this have on how humans think today, or organize, rationalize? Its a very interesting thought.

One which I considered on the blog, when questioning whether these new systems perhaps were building in us, new senses that past generations did not have.

All three authors in varying ways espouse one of the most poignant ideas. Thackara repeatedly acknowledges the need for reflectivity as a part of the process. He refers to this as means and ends. He claims that we are clear on means, but short on ends, which ultimately only produces a glut of gadgets that do little more than invade our privacy. Thackara states, “Understanding why things change and reflecting on how they should – are not separate issues.” This introduces the notion and the purpose of the need for reflectivity, into all levels of design production.

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TECHNOLOGY’S DILEMMA

Daniel McCafferty

The Secret War Between Downloading and Uploading describes author Peter Lunenfeld's view of society's dilemma with our most contemporary machine – computers. Lunenfeld defines the computer as the 21 century's machine of culture and he differentiates it from past media machines by stating that it “is the first...that serves as the mode of production...the means of distribution...and the site of reception.”

The author provides description of his terms for the upload / download dichotomy, framing these otherwise benign actions with a philosophical perspective. He differentiates the act of uploading as having the effect of “flattening out hierach[ies]....” Lunenfeld speaks against our tendency to only download (consume). He recognizes that television was central informing these habits as it is a medium that only allowed for a one-way transmission (consumption). He also notes the development of capitalism, a system that demands continued faith in the an ethos of wants over needs, as an important parallel. He ends by observing that we now have at our disposal “a vast new infrastructure for uploading,” and that we need to learn / figure out how to best use it.

Divisions exist between mindlessness and mindful uses of computers/media/technology (he provides Ellen J. Langer's definition of mindful for context). *Info-Triage* suggests that we need new technologies and more importantly new habits for sorting through the glut of information, including temporal awareness, vigilance, sorting by quality, new metrics to balance the opportunities afforded by choice; he differentiates between efficiency and the culling of the distraction in the search for meaning. *Disrupting Flow* acknowledges the shift from centrality to pervasive channels and urges citizens to exist autonomously within the culture that ubiquitous computing creates. Carving out periods of mindful engagement, or reflexivity and engagement media through its new exponentially increased opportunities creates new hierarchies of cultural production and resistance to capitulation to market/network immersion. *Sticky vs Teflon* describes media's ability to be built onto, creating broad and more ambitious media systems. Objects that are “sticky” provide affordances for others to latch onto, and provide participatory opportunities to create sophisticated content. Embracing the notion of an economy of unfinished, shifting us from consumption to a mix of consumption/production.

Unimodernism is the computer as a cultural machine that becomes the central node for culture itself. Informationalism, the aesthetics of networked digital information culture, results in the uniform effect of production of culture, manifest in unitary strings of code and universally accessible through networks. The result is continually transformative, not simply additive (collage). This idea is also expressed, as meaning is cumulative: through stickiness meaning accretes as opposed to existing in isolation. Figure / ground is about “the collective recognition of things that were already present but not central to the culture's perception of itself,” suggesting a reassessment of categories of old media (words, sounds, images, story, games, narrative) for our new context.

The dichotomy between up/download is exemplified in taxonomists and folksonomists. He discusses the invisibility of the whole system, from artifact to infrastructure and our lessening ability to question its

affordances when we are not aware we are engaging with its interfaces. Issues that begin as technological quickly become social (eg. domain names). Harnessing the power of networks proliferates ideas, changes technologies and eventually, through acculturation, new standards, tropes, conventions emerge. Participatory open source culture becomes integral in the change to a pro-social society; one that is conscious of choices made during down/upload and remains free from a commodified prosumer version of itself. Open source cultural production is populist and empowers citizens and provide autonomy by counteracting scenarios of capital and power with scenarios of networking, peer to peer (language), file-sharing, massive distribution.

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IMPERIALISM OF INFORMATION

Daniel McCafferty

In his forthcoming book, entitled *“The Secret War Between Downloading and Uploading,”* Peter Lunenfeld's primary claim is that networked computers, which he labels as the new culture machine, and contemporary technologies should be used for meaningful uploading, or production, and mindful downloading, or consumption. Lunenfeld describes his book as “hopeful without resorting to capitulationism,” and while this much may be true, it does not avoid resorting to what one might call assimilationism. Lunenfeld expresses much hope in his “culture machine,” however his position on the matter is unflinchingly Westernized, perhaps more specifically Americentric.

Assumptions

Lunenfeld describes what psychologists call “selective perception,” as the “moment when...perception pops,” – the epiphany when something becomes obvious and it's prior meaning is displaced, never again able to be seen but this new light. He then states “While industrial machines popped a hundred years ago, information has emerged as the key figure for this new century.” His framing of these historically significant transitional moments as simply parallel events that share a few developmental similarities suggests that the author feels like we “got it right” with industrialization. Perhaps more specifically, it becomes clear that he is choosing to gloss over, if not ignore, much of the critical thinking that responds to the march of progress that has brought us to the stage we are now at. There is evidence that we (“developed” nations) got many things *wrong* with industrialization. Most, if not all of the major challenges that face us, locally to globally, are a direct result of our quest for (Western notions of) progress: the environmental/ecosystem crises; the current impending economic collapse; extinction of cultures and languages due to globalization – these are but a few of the hallmarks of industrialization. Lunenfeld describes the computer as a “dream come true.” In doing so, and by failing to acknowledge the relationship between technological “progress” and it's limitations (as in it's implementation, not usage), his theory begins to embody some of the “infectious optimism” that defines the Californian Ideology:

Above all, [West Coast ideologues] are passionate advocates of what appears to be an impeccably libertarian form of politics...where all individuals will be able to express themselves freely within cyberspace. However, by championing this seemingly admirable ideal, these techno-boosters are at the same time reproducing some of the most atavistic features of American society...a wilful blindness towards the other - much less positive - features of life on the West Coast: racism, poverty and environmental degradation.

Efforts to apply some humility in developmental undertakings are beginning to emerge. A case in point is The Aspen Design Challenge's *Designing Water's Future*. This conference calls on designers to consider what “developing” nations are already doing well locally and consider ways that *our culture* could learn from *their culture* as the starting point to attack the looming global water crises. This approach stands in contrast to typical models that would suggest designers impose their own designed “solutions” onto the worlds of developing nations.

Applying this strategy to the development of information technologies and new media means we should be looking to other cultures and asking how and what could we learn or inherit from their customs, behaviors, notions, traditions with regard to communication, narrative and information. Additionally, we should be considering what is lost, replaced or made obsolete by the relentless unfurling of our technology across all spaces.

In Canada, the vast majority of Aboriginal communities experience significant struggles attempting to preserve their native languages. Language represents a fundamental component of a culture. When it disappears what happens the stories, to the identity, to an ability to represent oneself? This struggle is intensified by the dominance of English, not only in Canada, but around the world, in schools, business and the ubiquitous mediascape that all Aboriginal cultures exist in today. The oppressive assumption that we've got it right, coupled with the unilateral methods with which we deploy these assumptions, stipulates that it is the developed world / dominating culture who sets the precedent that others must adapt to, or be assimilated into.

The Positive Signs

Lunenfeld does pay some scattered attention to these issues of power and technology. For example, he references the interview with Brian Eno in *Wired*, where Eno states “The problem with computers is that there is not enough Africa in them,” and then goes on to ask “how does one Africanize, or Brazilianize, or otherwise liberate a computer?” Lunenfeld also identifies the simple act of registering a domain name as a political issue related to the invisible infrastructure of the web, and while he does not go into any detail about the implications, it is assumed that his reference is to its inherent relation to power, privilege and cultural domination. Unfortunately, neither explore the subjects in any detail.

The author does dedicate two sections to possible models which look towards breaking down older, more entrenched systems of power. First he discusses the flattening of hierarchies through the distribution of power to people and communities, and proposes that movements such as Open Source software could help to accomplish this. Next, his sections on Creative Commons shows how an alternative model for both legal and economic practice could (co-) exist within the more established systems that surrounds it (capitalism) and that there are indeed groups of committed cultures forging.

Conclusion

A position that espouses more humility would serve Lunenfeld's cause well. Questioning not only the uses of, but more importantly the consequences of a continuing increase in pace of technological adoption's relationship to power structures would be helpful.

The imperialism of information is a real threat we must consider in regards to the spread of new media technologies. Assumptions that our technologies should extend unabashedly across all time and space endorses an ideology that developing worlds should adapt/assimilate to the direction unilaterally selected by the dominating group's own self interest and cultural imperatives. It condones the sometime permanent disruption of cultural memes that we do not know, understand or appreciate.

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NOISY CHANNELS

Daniel McCafferty

There is a connection between what Katherine Hayles discusses in *Writing Machines*, and some of the other work we have been exposed to this semester.

In Chapter Eight, which she dedicates to Daneilewski's *House of Leaves*, she describes how the paradoxical notion that a lack of real world referent can actually increase meaning or build the narrative, as opposed to creating an abyss of meaninglessness. This is achieved, she claims, through footnotes, citations and other various ancillary texts, attaching themselves parasitically to the otherwise primary narrative.

Beyond that, additional narratives provided through materials presented in the Exhibits, Appendix and Index, are hyper parasitically fastened to the narrative, extending the affordances of the typical tropes of the book object, well beyond their typical application. The result is a cyclical weaving of a story that defies conventions, rather than falling victim to its own experimentations. This example is a self-invented and fulfilled example of what Peter Lunenfeld described as “sticky media.” The notion that objects or works be built with opportunities for addition and expansion. While in the case of HOL it is not an additional user who is added directly in the way that Lunenfeld had explicitly stated, it is an example of that ideology of building in the affordances, or bending the conventions, so that new opportunities for unexpected results might occur.

In fact, this perspective is quite similar to a notion of design promoted in our first semester, where design becomes about the creation of realms or environments where experiences unfold, and the designing of the opportunities for those experiences to happen, rather than explicitly trying to design for a particular experience.

The other reading that is mimicked in this idea of exploring unconventional, yet existing mediums for the expanding of ideas is the Proust reading, and the idea that a single experience, like awakening, can unfold over 15 pages, rather than over what might otherwise be typical, one or two sentences, a paragraph at most. There is a similarity to a lack of real-world referent here, is simply that such a dedicated amount of space to an otherwise everyday activity is just so uncommon, and yet, when carefully considered, and executed with proficiency, it can reveal the beauty of the event in a never-before imagined way.

This entire idea of unraveling something in ways that are new again is echoed again in the work that we saw of Golan Levin as well. His idea of asking typical questions to yield untypical results is seen manifest in Hayles' description of the use of marginalia in Danielewski's text. Just as Levin asked the simple question “what does the Earth look like at night,” you can almost hear the author asking himself the question, “what kind of a story could be told through marginalia?”

Although the connection to other concepts we have been exposed to this semester only represent a small fraction of the important ideas in even just a single chapter of Hayles' text, there is an important proposition for design in it nonetheless. For example, if Danielewski's book acts as an artifact that exists as a noisy channel, mixing encoding and decoding, mediated and remediated messages, can design exist as a medium whose purpose is to provide continuing unfolding questions rather than solid proven solutions?

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DESIGN AND THE APPARATUS

Daniel McCafferty

Like all things, the practice of design exists as its own ideological system within a larger system of ideology. The designer's relationship within these systems is constructed purposefully or socially. Kathryn Hayles' ideological construction is made purposefully, and *Writing Machines* makes explicit her relationship to that constructed reality. Her book offers more than strategies for designers to employ in the creation of artifacts; it offers an ideological approach in which design's voice becomes purposeful and considered, proactive and integral, front and centre; or as Hayles might say, design is an affordance of any inscription technique that allows for an interrogation to occur; or, more simply, an ideological design is one where design acts as a critical voice, an interrogator of form and material, a participant in the creation of meaning rather than a passive provider of beautiful or unusual formal characteristics.

Ideology

Kathryn Hayles seems to be influenced by Louis Althusser's thinking on ideology (note: although undocumented, in both of our meetings with Hayles she referenced him in passing). In his attempt to rethink Marx's position on ideology as being an imaginary force, Althusser claimed that “ideology has a material existence,” in that it “always exists in an apparatus (institutions), and its practice or practices.”¹

With regard to design, this suggests that the very act of design itself is not free from an ideological position or an ideological reality. Designers who believe that they do or can design outside of such a structure, that their design is or can be ideologically free, are essentially in fact choosing to engage with the world of represented systems, myths and symbols that have been pre-determined as those that naturally represent the social group of which he or she is a member. By recognizing a position within her existence as ideological, Hayles is better suited to construct the conditions of a reality with which she wants to engage.

Hayles discusses the publishing industry's role in the promotion of a Cartesian understanding of mind over body paradigm with in regards to the production of texts. In this sense, the mind is the concept and ideas of the author; the body is the form they take, the book, the medium.

In the process of publishing a minimum of four stages of production occur, each an isolated event. These are the writer writing the manuscript; the designer designing a document; the printer printing; the publisher publishing/distributing. This process reinforces the transparency of writing and the invisibility of design; it reinforces the hierarchy of mind over body—concept over form. Unfortunately for design, this also has the effect of pressing design into a covert role; the typical design process encourages this role by openly assuming that the function of the design is to be invisible, to give priority to the word, to the idea of the author.

An ideology that alters or disrupts this process is one that might aim to take control of the material outcome of a text, or, at minimum, establish a more fluid and open collaboration* among participants. Aside from the collaborations between designer and author that we have seen in the Mediawork pamphlet series by Peter Lunenfeld, another example where design and writing and production and distribution co-exist and create something utterly unique and timely is in the design journal *Émigré*. Here, designers assumed both the role of both writer and designer of texts that ranged from cultural critique to superfluous experimentation, where most often the design interrogated the meaning. Beyond that, designers such as Denise Gonzales Crisp engage in research and produce, as an integrated counterpart, a material expression of that research. Other examples could include Spin, a British studio who produce an in house journal *Spin#*; John Sueda, who designs and publishes *Task*; Stuart Bailey who writes edits and publishes *Dot Dot Dot*; Winterhouse who produces *Above the Fold*. Many of these efforts are small in scale, but do express the notion behind Althusser's and Hayles concept of a material ideology being expressed through an apparatus.

Media Specific Analysis

In light of Hayles' primary argument that materiality needs to be a more considered aspect of any text in the interest of augmenting meaning, she suggests a complimentary necessity for literary criticism, that it adopt a media specific analysis (MSA). This would allow literary criticism to address what is happening to both contemporary texts that exist on screen, as well as to historical texts that are migrating to digital representations of their original selves. Currently, criticism is weighed down by years of baggage, and so naturally after a period of few technical innovations related to the production of a text, in a new context where technological innovation allows for new forms of "the literary" to be produced, criticism needs to adapt.

Hayles acknowledges the contemporary context as a moment where literature and the literary need to be distinguished as separate but equal. In an image saturated world—the physical and the digital/virtual—images tell stories like texts: we read images – increasingly we favor images over text. The new context treats literary as textual, visual, or visual textual. The explosion in popularity of the graphic novel is testament to this, however image as text can also be seen as disrupting former understandings of how the news is disseminated, where video feeds have in many cases usurped a more standard text story.

Design seems well suited to play a leading role in the development of a new type of material criticism/MSA: it is a central figure in the visual world to which the literary criticism now finds itself in need of responding. Design specializes in knowledge on materiality, form, experience, interaction—all seemingly central issues, for a new material-centric criticism.

However design is also a perpetrator of parasitically drawing from the theories or methods of other disciplines. How does this continual looking outward affect the design discipline? In Issues 65 and 66 of *Émigré*, Canadian designer, researcher and academic David Cabianna, raises the issue of the lack of "disciplinary

specificity” in regards to the writing and discourse informing contemporary design. He describes how the spread of technology and the saturation of mass culture have led to an elimination of “disciplinary specificity” within the realm of design that is not witnessed in fields like medicine, law or painting. This term refers to how “each discipline has specific ways to see the world. Each uses representative tactics that are specific to a body of knowledge that “initiates” comprehend and employ.”ⁱⁱ

What he meant by this is that design should begin to look towards building for itself a language that is specific to the discipline, one that distinguishes its epistemological and ontological framework. This might serve to unite the “initiates”, i.e.: the designers, in both academia and professional practice.

What does this have to do with Hayles’ argument for a MSA? Perhaps little more than a common bond–recognition of the necessity to bring more to the table in this modern context.

It might also however, allow designers engaging in either practice or theory/research to push beyond boundaries and conventions (**what boundaries/conventions*) of what has been possible under the guise of design as a service, or for that matter, design as a problems-solutions oriented field. The combination of a MSA enhanced by disciplinary specificity suggests a scaffolded support structure for a range of design works that would allow for continuing progress to be made toward new ideas, by allowing, for example, design to be critically engaged from varied positions, rather than from a problem / solution standpoint. To illustrate, Hayles describes that a media specific analysis would not consider texts in isolation from one another. On the contrary, it would allow for the “*recursive dynamic of imitating each other, incorporating aspects of competing media into themselves while simultaneously flaunting the advantages their own form of mediation offer.*”ⁱⁱⁱ Coupled with a disciplinary specific language, this could form the basis of a design ideology concerned with the dialectic between materiality and meaning, not solely with so-called innovation and bottom lines (see next point). Often patrons of design prefer a visual language that could be considered safe, because it is what is known and understood by their public and an unfamiliar visual language may alienating a customer base. This kind of thinking is what accounts for such similarity among the visual communication in most corporate sectors. Alternatively, design could be considered in terms of its contribution to criticality, meaning and understanding.

This would allow for new works that do push boundaries and conventions, to have the weight of the discipline behind them, in the sense that they become recognized as a valuable element of the field, not aberrations or works that once again ignite the tired art versus design debates. MSA and disciplinary specificity would make clear the connections between design, society, politics, etc. so that practicing designers could broach these subjects with their clients and so that schools could have as part of a curriculum the need for graduating designers to be well versed and aware of the issues that affect, and influence the realm of visual communication.

Finally, disciplinary specificity and critique informed by media specific analysis is necessary and relevant to design in the present moment, because if design does not take up this challenge for itself, other disciplines will do it for us. An example of this is happening currently in business, where design and design thinking has been linked to innovation, and thus is essentially being used in business as a competitive advantage. A classic case here is Toronto’s Rotman School of Business, lead by Roger Martin, who is a leading proponent of “design thinking” in business and has pioneered a business school that teaches courses in design thinking. Here is a case where a successful appropriation of design issues has occurred and where non-designers are now discussing design issues in very specific terms, to captive and influential audiences. Vulnerable in this sense, the practice of design, what it can and should provide, what it should be worth, and what it encompasses becomes codified by individuals outside of the field.

Conclusion

Design always has an ideology, whether that is being expressed in terms of a support of the apparatus of conventions or if that is actually producing work that disrupts it, questions it, refutes it, propels it forward, and so on. Further, designers who engage in one or another of these types of practice are also reflecting in themselves and their own ideology in that work. There is no design without a point of view or its own argument.

We might assume that Hayles' answer would be yes, to the concluding question posed in the previous essay, as to whether design could function primarily as "a medium whose purpose is to provide continuously unfolding questions rather than solid proven solutions."^{iv}

*Collaboration is a tricky word here. Designers claim to be natural collaborators. Many designers claim to collaborate on a daily basis. Although the former statement is most often true, the later is not the case. Unfortunately, a definition of what collaboration actually means is often a pallid and clichéd notion of what real the word actually means. Professional co-operation is not a sufficient condition for a collaborative relationship.

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DESIGN AND RHETORIC

Daniel McCafferty

Despite an aversion to taking video games seriously or any skepticism as to how useful it might or might not be to consider them as an expressive medium, Bogost's theory of procedural rhetoric also applies to any medium that accomplishes its inscription via processes, is an exciting proposition for design. In trying to develop this new domain, Bogost embarks on a journey to define it, which reveals vital information that also could inform the establishment and development of a critical* design practice, which—like video games—is also an emerging field.

Procedural rhetoric is a new domain of rhetoric, devised and defined by Bogost as "the art of persuasion through rule-based representations and interactions."(p.ix) Although the practice of graphic design and the artifacts of this practice are not within his discussion of procedural rhetoric, Bogost suggests "a broader media ecology" that could include graphic design... than exclusively the "Athenian Assembly."(p.37) design employs a more classic Aristotelian notion of rhetoric. For example, design employs a rhetorical mode to present an argument and applies rhetorical devices to give form and meaning to its subject.

Dialectics of design

Bogost states that procedural rhetoric "afford(s) new ways to make claims about how things work." (p.29) Classical rhetoric also supports this claim, and by extension, so too does design. Bogost uses procedural rhetoric as a critical platform from which to... Design that engages rhetoric in this way argues for what things do, rather than how things work. The former approach to design is therefore ignoring the critical rhetorical element of the dialectics in its practice. (Which dialectic design practices?) Dialectics is crucial to design practice, because it allows for a questioning of the experiential procedures otherwise presumed. The loss of dialectic in design practice means that design is not serving a critical (?) function. How dialectic is established is another question.

Design and Rhetoric

In a very relevant manner, Bogost describes an important and vital difference between altering behavior through technological ends and deployment of rhetorical means (which would be aimed at persuading users to question that behavior). The former approach, though it could theoretically have an outcome of leading to a user to questioning an assumed belief, does not set out to accomplish that task, and as a result it would be fair to think that without some form of discourse or reflection, a presumed behavior would go unquestioned and therefore unchanged. He refers to surveillance technologies that monitor the washing of hands for employees in the service industry. His insight is that this type of technology changes employee behavior without persuading the employee as to why this might be a proper approach.

A parallel could be drawn between this behavioral affectation and the kind that is triggered by so-called "social design." For example, the classic Save the Whales poster is similar to the technology in that a particular

behavior or emotion may be targeted, but no connection is made to a larger system, or to actually changing a belief as to why certain actions that a typical individual engages in might or might not affect the lives of whales.

A hopeful analysis would conclude that an assumption is made on the part of the designer that the relationship is understood, and so no further persuasion is necessary. However, an alternative view might be that the designer is equally unaware of the connections, him or herself. The critical point is that about the assumptions which are made or not, of a user's understanding of relationships.

Conclusion

Bogost's insights into the role of dialectic and rhetoric in the formation of arguments about the world around us is very relevant to how design could be approached and practiced in a critical way.

* Of course the word critical is an increasingly pervasive and curious one—employed freely and often without regard or specificity—a worthwhile subject for a future essay. However, Ian Bogost text offers relevant entry points into characteristics and methods that might help to define a critical practice. Some discussed above.

Critical practice here is for the moment, taken from the notion advanced by Zak Keys at *Forms of Inquiry-The Architecture of Critical Graphic Design*. The idea that it would “explore the multivalent, complex and inherently subjective world around” the critic; that it would “involve work that is motivated by by an impulse to reframe the circumstances surrounding contemporary graphic practice by using intuitive modes of investigation to probe the boundaries of the discipline.”

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RECLAIMING RHETORIC: CRITICAL DESIGN AND PROCEDURAL RHETORIC

Daniel McCafferty

The goal of this essay is to identify and define how certain key ideas in the theory of procedural rhetoric might be grafted onto a design practice. In developing this new area of rhetoric, Ian Bogost frames procedural rhetoric in terms of how it might occasionally apply to the practice of video game design and suggests the possibility that it could also apply to disciplines outside of his particular area of interest. Because his theory is in a state of development it would be premature for others, especially designers, to see his working premise as flawed. There are in fact many useful arguments made in his work, even in its early stages that might apply to a design practice. Just as Bogost attempts to reposition the practice of video game design towards a critical approach, this essay will be directed towards the emergence of a critical design practice, one that is less typical in the industry. This approach is useful, as it allow, as Bogost stated in his lecture, for one to take an “extremist” position, thereby more quickly identifying the boundaries of the discipline.

Classical and Critical Rhetoric in Design.

Graphic design does apply a classical version of rhetoric in its typical day-to-day practice. For example, graphic designers employ a rhetorical mode or appeal (logos, ethos, pathos) to present an argument; and apply rhetorical device(s) (metaphor, metonymy, hyperbole, etc.) within a given piece or artifact, to give form and meaning to its subject.

The use of rhetoric happens without deliberate intent. in that a designer will not sit down with Corbett's dictionary of classical rhetoric and choose from it a mode to deploy through a designed artifact or message. Rather, a designer will make choices based on a “strategic” direction. This direction is often governed by their client's business interests and usually established prior to an isolated design project. They may be explicitly articulated through a “creative brief,” or intrinsically expressed through a history of items that have come before. Often this factor influences the mode of appeal of a design project. For example, the popular notion today of messages being “on-brand” suggests that messaging be sensitive to prior standards established, so as not to

confuse the general public with messages that portray a company in a light that is not known or expected. Formally, rhetorical devices are applied based upon a combination of complicated factors, some related to the visual codes of a particular genre of business, including current aesthetics and styles that define a “competitive landscape” (ie: what makes a bank a bank and not a fast food establishment); as well as some related to the content of a project, such as those dictated by hierarchies of messaging expressed through imagery and text.*

In this sense, rhetorical devices could be considered “tools of the trade,” and rhetoric is applied whether a designer likes it or not and importantly* whether a designer knows it or not. Or, to be more precise, every message makes an argument for something because as a message, it inherently has something to say, whether that something is as banal as the warmth of the day, or as suggestive as the sex appeal of a particular pair of jeans. No message is benign, all attempt to persuade towards one direction.

Ian Bogost’s procedural rhetoric is not only a “new domain” of rhetoric (p.29), but also offers a new vision of a critical approach to rhetoric.** His approach is in concerned with how rhetoric is used and deployed toward critical*** ends through a medium that is itself often not given to such a task (video games). This is where we begin to see overlaps in his inquiry that could help to inform a graphic design practice. As described above, graphic design often uses rhetoric for expressive ends rather than critical, much like video games. Bogost is attempting to rescue rhetoric from being merely considered a stylistic and formal strategy, and position it as an inherently critical practice. Terry Eagleton states, *“Rhetoric... examined the way discourses are constructed in order to achieve certain effects... It saw speaking and writing not merely as textual object to be contemplated or endlessly deconstructed but as forms of **activity** inseparable from the wider social relations... and as largely unintelligible outside the social purposes and conditions in which they were embedded.”* (Eagleton p.179).

It is worthwhile to think about this statement in terms of visual rhetoric and substitute the speaking/writing for its visual counterparts. Acknowledging design (both the act and its artifacts) as a form of activity inseparable from social relations is an acknowledgment of how it is a force that frequently reinforces presumptions, facilitates conventions and conditions experiences in the world. Adding to this is the fact that practitioners embedded in a social context carry with them their own beliefs about the world and make decisions based on this experience and knowledge.***** This has the effect of again reinforcing beliefs of their own. We therefore require a critical method to question and understand this relationship, and one method might be through rhetoric as a critical component of design practice.

As Bogost demonstrates through his efforts in defining procedural rhetoric, a critical practice differentiates between rhetoric that serves existing formal structures, and that which seeks to question them; or the difference between altering behavior versus engaging users (or viewers) in a discourse about the behavior itself. (Bogost p.60). It affords the practitioner a method to question and critique their own work, indeed both commercial and non-commercial, as well as the work disseminated in their field in order to challenge what is expected or assumed and to question and resolve conflicts that will ultimately lead to a more worthwhile and holistic social practice.

“...we ... wish to find the new world through criticism of the old; ... relentless criticism of all existing conditions, relentless in the sense that the criticism is not afraid of its findings and just as little afraid of conflict with the powers that be.”(Marx p.212)

Critique in this sense, as described by Karl Marx, echos what Bogost describes in his explanations of how and where rhetoric can be used to persuade video game players of some of the more important social or political realities in the world around them.

Conclusion

Design, as a field that is responsible for dissemination of communication, needs a much stronger critical voice, and should engage with rhetoric from the point of view put forward by Bogost, which is, as we have seen (in the Eagleton quote) a look backward to its original intent and purpose. One question always at the forefront of any message, however, is whose voice is it that is coming through, and of course, what makes one voice more inherently worthy than any other. This is partially the realm of dialectics, and while essential to the definition of a

critical practice and rhetoric unfortunately, it is beyond the scope of this essay. Not discussed in this paper, but essential to the definition of a critical practice and rhetoric, is the role of dialectic.

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CAROLINE PRIETZ

NOTES ON INTERFACE:

THE ROLE OF DESIGN IN THE SPACE BETWEEN

Caroline Prietz

It is a natural tendency, I fear, to immediately associate interface with technology and more specifically a computer. While the computer plays a valuable role in our ideas involving modern interfaces, limiting ourselves to the confines of the computer limits our views of interface. I'm not condemning. When I first encountered the phrase I thought the same and, in fact, I held onto that notion for quite a long time. It wasn't until I was pushed beyond my notions that I began to see interface everywhere... I take that back. Interface does have defined regions, although the thought of interface as everywhere, whether in physical or abstract form, is liberating. I don't believe I will receive many "amens" from the congregation on that one.

Classification of an object as an interface requires the existence of two forces and a condition of contact between them. Interface is what lies in the space between, whatever size or shape that space may be. What occurs in that space is the intriguing part — the interaction, the experience, the tension between the two forces — and we, as designers, have the ability to harness that tension and facilitate relevant, meaningful interactions.

So, where are some of those spaces for interaction outside of the technical realm? Doorways, stairs, your refrigerator, a map — interfaces really do surround us everywhere. Could we then not say that an eye is an interface? It lies between the brain and the world, and the condition of contact, that tension, is visual perception. Or is this going too far?

While it is much more enjoyable to romanticize interface by thinking about it abstractly, it seems to be serving and increasingly relevant purpose in it's technological forms. Interfaces can serve as doorways or grant access to information. Technology, specifically the Internet, provides the individual with an overabundance of information of all kinds. (Manovich 35) How do we prioritize? How do we filter? How do we as designers create the "magic glasses" that allow the viewer to see just the right information at just the right time? It is here where the designer has the ability to choreograph the experience that the user will have. (Bolter and Gromala 22) Let's dig into this further. I happen to have done a bit of choreography myself and I learned that as a choreographer one must know — I mean really know — the music, the space and the participants. A choreographer must anticipate the participants' abilities and limits. They must take into consideration capacities and boundaries of the setting or stage and must get to know the musical selection as if immersed in an intimate relationship. Now, as an interface choreographer, what does this, then, require of a designer?

Interface should serve as a natural interaction, or if appropriate, a natural metaphor, between the two entities. However, the idea of the natural — relevant to context — is not constant, because what is efficient or easy in an interface depends on what the interface is for. (Bolter and Gromala 23) The way you would desire to interact with a game may be much different then the way you would for a work area. In one case it may be appropriate to allow the user to physically throw things or beat a drum, in another to neatly organize things in tiny files. Even as a graphic designer, I cannot completely comprehend all the inner-workings of a computer operation system. I have come to believe the metaphors created for our comprehension, like the desktop, are the real thing. And who is to say it is not?

In *Windows and Mirrors* by Jay David Bolter and Diane Gromala they propose a duality of interface by stating, "Interface should oscillate in a controlled way between states of transparency and reflectivity." (Bolter and Gromala 68) Interface plays many roles as the space between, the point of tension, and the condition of contact, but what Bolter and Gromala are saying is that while transparency is valuable it needs to reflect the user as well. This idea extends further to propose that it is also important to see the interface by explaining that if we only look through the interface, we cannot appreciate the ways in which it shapes our experience. (Bolter and Gromala 27). I am not sure that I agree with this last notion. I do not think an average individual — aside from a graduate student studying interface — needs to appreciate the fact that someone came up with the metaphor of the desktop many moons ago and has created a parallel world on the rectangular screen of my computer to make my navigation through information more intuitive. I greatly appreciate that this took place, but believe this interface's success is derived from the beauty of its transparency.

In John Thackara's *In the Bubble* he views designing as steering more than designing as shaping. (Thackara 214) I am interested in the notion of design shifting behavior for good or for bad — more so for good — and the design of interface as a crucial part of this shift. I want to consider how to take the voice we are given as designers and develop it as a tool that positively influences a broader audience — the individual, our society and ultimately this planet. Thackara also observes that, "Our dilemma is that small design actions can have big effects — often unexpectedly — and designers have only recently been told, with the rest of us, how incredibly sensitive we need to be to the possible consequences of any design steps we take." (Thackara 7) Accountability steps in here, whether we like it or not. As designers we have the ability — and oftentimes the responsibility — to persuade an audience to embrace positive values and behaviors. So, where do I stand with interface? Still observing the interfaces that surround me. Still contemplating the possibility of my eye as an interface. Still asking questions.

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ALL TAKE AND NO GIVE:

HARNESSING THE AFFORDANCES OF THE MACHINE

Caroline Prietz

In a give and take world of downloading and uploading Peter Lunenfeld has a call to action, a call to mindfulness. In his unpublished manuscript, *The Secret War Between Downloading and Uploading*, Lunenfeld reveals the surprising statistic that only one percent of the web community uploads and 10% of the users comment or modify that existing content, while a whopping 90% of the members of a web community are satisfied with only downloading and never uploading. (Lunenfeld 11) Why the hesitation? The computer, as a "dream device", affords us a great many opportunities as a culture machine. However, our computer behaviors seem to be modeled after a machine that is defined by downloading, the television. We are programmed to simply absorb the information that is presented to us through the avenue of that rectangular screen. We are captured in a state of constant take without the give.

The affordances of the computer are great yet consequences are becoming more and more evident as Lunenfeld points out. Where those consequence pose the most threat to culture as a whole are in the areas of distraction, memory loss, and patterns of consumption.

Haven't we all experienced, oftentimes even welcomed, those distractions on the web? We begin with a focused, time-managed, charted path, purpose and plan, then find ourselves lead astray by some bright, shiny and awfully useful thing. The computer, and Internet, in general is full of great purposes and even greater intentions. We must learn to harness those intentions and extract its usefulness. Lunenfeld defines this as "info-triage" which is "the culling of the distraction in the search for meaning." (29) He states that, "info-triage is about

weighing options in real time, understanding that our capacities for downloading are in fact limited, and that the choice not to engage at all is as valid as a choice between options.” (29) What a beautiful thought. That we could choose “not to engage at all,” and that is okay.

In addition the computer is causing an even more interesting dilemma, the loss of memory. As computer memory capabilities increase our human capacity for memory becomes more and more obsolete. The ability to archive text, audio, images and video is in essence the ability to shelf our own memory. We no longer have to exercise and rely on our own memory capabilities because the computer does it all for us. We don't even have to remember how to spell (I just allowed the computer auto fix at least three words in this paragraph for me). How is this paradigm affecting human cognition on a fundamental level?

In a shift of patterns of consumption that concentrate on wants rather than needs, downloading parallels consumption. Lunenfeld desires to establish balance between consumption and production, which means we must focus more on the uploading and less on the downloading.

Lunenfeld's call to meaningfulness is heavy on the problems and light on the solutions. In an attempt to steer clear of any philosophical debates he challenges us to not only upload, but to upload with meaning, to upload only things worth of edification, only things that connect to larger network and that contribute to and build upon questions and meaning. (54) He sees the design challenge as being curatorial — “the marshalling of culture, the mindful juxtaposition of ideas, images sounds and interactions to create more than the sum of their parts.” (33) I suppose he poses the question to us: How can we, as mindful designers, initiate our own change?

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THE GREAT BLURRING: A CALL FOR DISTINCTION

Caroline Prietz

In a lecture with Peter Lunenfeld on his unpublished manuscript, *The Secret War Between Downloading and Uploading*, Lunenfeld challenges us as designers to take on the future as our pro-bono client. These terms all seem familiar but the juxtaposition brings reason for pause. The notion, though stated quite simply, is pregnant with complexity. As I look towards the future from my viewpoint in the now, I can only assess its needs based on the trajectory of our actions of today. Today with the affordances of the ultimate cultural machine, the computer, society has the world at its fingertips but oftentimes finds itself either paralyzed from information overload or lost in the mess. The mess, under the guise of productiveness, is taking over our lives. Our lives, as they begin to spiral out of control call for balance which can only be achieved through distinction.

Before the computer there was a distinct line between work and play. You were either doing one or another. Yet now that the computer serves as the ultimate culture machine—encompassing forms of production, distribution, consumption and entertainment within the confines of a single rectangular screen—the line begins to blur. We find ourselves no longer able to distinguish between the two. Employees who work on the computer all day, even doing work related Internet research, may find it quite simple to slip into personal endeavors on the web. According to a 2007 survey conducted by Salary.com, employees spend roughly 20% of their workday on non-work-related Web activities (“InternetSafety.com Lists Top 10”). By today, almost two years later, I can imagine that line has blurred even more.

In the online article “InternetSafety.com Lists Top 10 Online Time Wasters Plaguing Workplace Productivity” some of those sites topping the list are in the categories of social networking, online videos, shopping, games, gambling and blogs. Our computers encompass everything for us. Our modes of production are found in this one solitary source. One can switch from writing a paper to checking email without even lifting their fingers from the keys (command, tab). Fantastic, right? But I can't help but wonder if our lives are truly enriched by the compounding of modes of production? Or rather are we finding it more and more difficult to get anything at all actually accomplished? When we are surfing the web it is quite simply non-work, yet we pretend that it

is pseudo-work because it is in the same environment. When work and play are compounded we are in a continuous state of disappointment from not feeling like we have enough free time to not feeling like we get enough done. The lines between the two begin to blur more and more each day as new modes of production are added and it is the designer that has the ability to distinguish between the two. Ultimately we need spaces that iterate the distinction between work and play as well as curate this flood of information.

This blurring is not deliberate or intentional. It is just the trajectory of the machine. If we can do it, why shouldn't we? Yet this has led us down a path of "cultural diabetes" and Lunenfeld states that the individual has to take responsibility for their cure. The computer, and Internet, in general is full of great purposes and even greater intentions. We must learn to harness those intentions and extract its usefulness. Lunenfeld defines this as "info-triage" which is "the culling of the distraction in the search for meaning." (Lunenfeld 29) He states that, "info-triage is about weighing options in real time, understanding that our capacities for downloading are in fact limited, and that the choice not to engage at all is as valid as a choice between options." (Lunenfeld 29)

As an individual we must gain control of our own patterns of engaging and downloading, yet as designers we are called to create a balance not just between downloading and uploading but also between conducting these actions with meaningfulness and mindfulness. Society is in a constant state of "info-triage" while on the web, sorting between nodes with meaning and those without. Designers have the ability to get access to modes of distribution and audiences. Thus the designer and uploader must think before she speaks. This act, in its essence, requires more downloading and less uploading. It calls for a consideration of thoughts and a curation of words and actions. It demands that the uploading is carefully crafted, well thought out and meaningful. In this way we can begin to shape a clearer future with the hope of achieving at least a bit of balance.

As the future continues forging forward with a constant flow of new information and modes of distribution the designer finds their role as curator becoming increasingly more important. Lunenfeld states, "The Web offers a marvelous explosion of access, but the law of unintended consequences could usher in a world in which anything can be obtained, but nothing is special." (Lunenfeld 79) He, in essence, sees the design challenge as being curatorial — "the marshalling of culture, the mindful juxtaposition of ideas, images sounds and interactions to create more than the sum of their parts." (Lunenfeld 33) The need for balance is grounded in this need for distinction through curation. Curation is creating something special, something more than the sum of its parts. It is the shaping of spaces for the development of the individual and the inter-relationship of human beings. It is creating affordances for others to experience, enjoy, create and communicate.

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THE TRAP OF MATERIALITY: BREAKING FREE OF LITERARY CONVENTIONS

Caroline Prietz

In *Writing Machines* author Katherine Hayles begs the writer and designer to explore new perspectives on literary production. Hayles specifically asks one to consider the materiality of the artifact and it's physical connections to the intellectual content. As simulation and the metaphor become increasingly more prevalent in our lives through technology, materiality plays a crucial role. All simulation must have its grounding in reality (or in this case, materiality). Hayles suggests that, "to change the material artifact is to transform the context and circumstances for interacting with the words, which inevitably changes the meaning of the words as well." (23) Meaning is derived not from the words alone but also from the context in which the words are presented and how they are produced in the first place. Hayles continues by stating that, "this transformation of meaning is

especially potent when the words reflexively interact with the inscription technologies that produce them.” (23) She refers to "inscription technologies" as devices that "initiate material changes that can be read as marks." (24)

Hayles argues that the "materiality of the artifact can no longer be positioned as a subspecialty within literary studies; it must be central, for without it we have little hope of forging a robust and nuanced account of how literature is changing under the impact of information technologies." (19) This call to action asks us as designers to question the "ways in which the medium constructs the work and the work constructs the medium." (Hayles 6) We cannot ignore the materiality. In *Writing Machines*, Hayles offers three examples of literature that do just that; Talan Memmott's *Lexia to Perplexia*, Tom Phillip's *A Humument* and Mark Danielewski's best selling novel *House of Leaves*.

House of Leaves offers an unconventional reading experience with varying degrees of mediation and "multiple paths into its complexity." (Hayles 125) Hayles states that "in these post human days, *House of Leaves* demonstrates that technologies do not simply inscribe preexisting thoughts. Rather, artifacts such as this book serve as noisy channels of communication in which messages are transformed and enfolded together as they are encoded and decoded, mediated and remediated." (130) Perhaps the most interesting aspect of this piece is when the book attempts to make the reader aware of reading conventions that our so ingrained in our sub-consciousness they are dizzying to dislodge. The book calls to our attention the notion of pages being opaque as opposed to transparent by perpetuating the later through printing a block of text reversed out on the reverse side of the page as if you are looking at the back side of the words. At the same time this visual representation is distilling the essence of the story through which "treating the page as a window can be seen as a way to compensate for the House's viewless interior." (Hayles 123) Designers are challenged to examine how and where they can push the challenging of conventions even further. As readers we are asked to consider in what ways and how deeply this enriches our reading experience.

These explorations on literary production can begin by examining typographic and literary conventions. One can explore, illuminate and call attention to these conventions by bending and breaking them. These experiments can provide the audience with an avenue for an intellectual engagement with the typography, words, story and ultimately their own cognition.

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SEAMLESS MATERIALITY:

DESIGN'S ROLE IN EXPLORING LITERARY MATERIALITY

Caroline Prietz

In *Writing Machines* Katherine Hayles argues that the "materiality of the artifact can no longer be positioned as a subspecialty within literary studies; it must be central, for without it we have little hope of forging a robust and nuanced account of how literature is changing under the impact of information technologies." (19) Design plays a fundamental role in exploring the materiality of the artifact and Hayles poses a unique challenge to literary writers and designers to develop relationships in which this materiality can be most richly explored. In *Writing Machines* Hayles pairs with designer Anne Burdick to develop a piece that expresses this notion. Hayles describes the design of *Writing Machines* as an exploration of the central metaphor. The book is a series of planes that make up a three dimensional volume. While the cover is meant to suggest that the pages are transparent, black vertical lines serve as navigation devices, each representing a section of the book. Pages are shadowed toward the spine of the book and the cover is ridged as a tactile correspondent. When Hayles refers to the design of the book as a voice of the dialog, that may be a voice projecting a bit too loud. In the appropriate situations, a physical form that intimately connects with the intellectual content may indeed provide a deeper level of connection and understanding. In less appropriate situations, however, it may distract from, rather than

add to, the true essence of the literature. Is there ever an appropriate time for the literature's physical form to remain "transparent" as opposed to calling attention to the materiality?

There is something truly intimate and absorbing in the hypnotic rocking pattern of one's eyes back and forth across a page. The activity of reading allows the reader to suspend all distracting thoughts and create a deep, uninterrupted connection between the author's voice and the reader's imagination. This unadulterated state is central to reading, and the design invites and influences this experience through typographic decisions (typeface, line length, leading, margins, etc.). Let us not destroy this intimate relationship created between the reader and the words on a page.

While the benefits of experiments in the materiality of written literature may remain unclear, the concept of materiality holds the most promise when it shifts from engagement with literature on the page to literature on the screen. Oftentimes written literature is translated to the screen as if it is merely a reflection of the physical version as opposed to an extension. Hayles argues that "this print-centric view fails to account for all the other signifying components of electronic texts, including sound, animation, motion, video, kinesthetic involvement, and software functionality, among others." (Hayles 20) As an extension of the printed version a piece of literature on the screen can embody the characteristics of its medium, thus adding a deeper level of connection and understanding for the reader.

Because many individuals today are spending vast amounts of time reading from screens as opposed to reading from books designers must adjust our approach to designing for reading in ways that utilize interface and digital materiality. This new form of materiality caters to a specific cognitive mode common in younger generations, which Hayles refers to as hyper attention in her article, "Hyper and Deep Attention: The Generational Divide in Cognitive Modes." In Hayles article, she observes that "there is little doubt that hyper attention is on the rise and that it correlates with an increasing exposure to and desire for stimulation in general and stimulation by media in particular." (191) Individuals accustomed to hyper attention seek high levels of stimulation, which often results in an inefficient use of time through multitasking. (Hayles 189) As opposed to deep attention which is "characterized by concentrating on a single object for long periods (say, a novel by Dickens), ignoring outside stimuli while so engaged, preferring a single information stream, and having a high tolerance for long focus times," hyper attention involves "switching focus rapidly among different tasks, preferring multiple information streams, seeking a high level of stimulation, and having a low tolerance for boredom." (Hayles 187)

Designing for the reading experience on screen can, rather than appropriate print strategies, develop to support the hyper-attention tendencies of generation m. We most clearly see this happening in blogs. Readers consider and navigate multiple channels at once, which can be done most easily in hyper attention mode. Though this structure is synonymous with blogs, it closely resembles the reading experience of printed magazines. The page of a magazine can encompass several narratives at one time. The articles are short, spanning no longer than one to three pages at the most. Additionally, articles are peppered with side notes, lists of experts, diagrams, corresponding images and advertisements. The articles that read as short stories are free of distracting side conversations, which nod to reading spaces that typically invite more time, such as novels. While the magazine articles at times invite deeper intellectual stimulation, I do not typically turn to them to achieve that experience.

Literature is broad enough to encompass a host of reading experiences. The best service design can do for the reader is to work with literature seamlessly by allowing its message to remain unhindered while distilling the original message and intent. We must take the intent of the piece into consideration and design conditions for the reader to experience the character and essence the author intended.

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THE MAGIC OF PERSUASION: EXPLORING PROCEDURAL RHETORIC IN DESIGN

Caroline Prietz

Design is persuasion. It is fundamentally about finding the way in which to best communicate an idea or message and ultimately persuade our audience to — at the very least — consider our point of view. As designers we directly or indirectly ask ourselves how we can persuade the audience to direct their eyes this way, buy this product, support our cause or actually read and possibly comprehend this remarkably boring annual report. Rhetoric is employed on a daily basis. The question is not should we persuade today but rather how can we persuade today and in what forms? Rhetoric manifests itself in writing, speech, images and moving pictures and we simply evaluate the message and establish the best avenue for persuasion. That just might be the pure magic of design.

Yet having that magic of persuasion tucked in our pocket each day brings up a simple quandary. Do I even believe what I am preaching? As a designer we are invited to mirror our cultural and social surrounds or to institute behavioral change and shape the values of society as a whole. Ethnographic researcher Rick Robinson illustrates the purpose of design to re-shape frameworks for particular experiences within the mind of the beholder by "spanning the gap between conditions — what there is now and what might be, between our way of seeing the world and someone else's way, between the conditions of the alternatives." (Robinson 6) In order to do this we must be clear on our own set of values. If you are going to design to persuade and to bring about change you have to ask why? How you decide what is right or good? And how do you re-shape the frameworks within the mind of the individual to accept this?

In *Persuasive Games* Ian Bogost suggests that the form of rhetoric that just might have the most potential at achieving this re-shaping is that of procedural, employed in videogames. He analyzes the way in which videogames mount arguments and influence players and proposes that videogames possess the ability to persuade through *procedural rhetoric*; the art of persuasion through rule-based representations and interactions, or rather the practice of using processes persuasively. (ix) Bogost suggests that procedural rhetoric entails persuasion — to change opinion or action — and also expression — to convey ideas effectively. (29)

In an ideal world design has the ability to address fundamental problems in the life of an individual and create change. Instead of listing problems and fixing them one by one we are challenged to change the frameworks within the mind of the individual for a particular experience. Bogost believes that videogames can do just that by disrupting and changing "fundamental attitudes and beliefs about the world, leading to potentially significant long-term social change." (ix)

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DESIGN AND PERSUASION: USING PROCESS PERSUASIVELY

Caroline Prietz

Design is persuasion. It is fundamentally about finding the way in which to best communicate an idea or message and ultimately persuade our audience to — at the very least — consider our point of view. As designers we directly or indirectly ask ourselves how we can persuade the audience to direct their eyes this way, buy this product, support our cause or actually read and possibly comprehend this remarkably boring annual report. Rhetoric is employed on a daily basis. The question is not should we persuade today but rather how can we persuade today and in what forms? Rhetoric manifests itself in writing, speech, images and moving pictures and we simply evaluate the message and establish the best avenue for persuasion.

In an ideal world, design through persuasion has the ability to address fundamental problems in the life of an individual and create change. Instead of listing problems and fixing them one by one we are challenged to change the frameworks within the mind of the individual for a particular experience. Ethnographic researcher Rick Robinson illustrates the purpose of design to re-shape frameworks for particular experiences within the mind of the beholder by "spanning the gap between conditions — what there is now and what might be, between

our way of seeing the world and someone else's way, between the conditions of the alternatives." (Robinson 6) In *Persuasive Games* Ian Bogost suggests that the *procedural rhetoric*, employed in videogames, just may have the most potential at persuasion and ultimately re-shaping these frameworks. Bogost believes that videogames can restructure frameworks by disrupting and changing "fundamental attitudes and beliefs about the world, leading to potentially significant long-term social change." (ix) There may be no other medium that can accomplish this form of investigation to this extent. In this world where we, as designers, may be attempting to institute cultural change why would we not turn towards such proclaimed devices?

In shifting our gaze towards videogames, Bogost advocates that they are "uniquely, consciously, and principally crafted as expressions" and as such, "they represent excellent candidates for rhetorical speech—persuasion and expression are inexorably linked." (45) He analyzes the way in which videogames mount arguments and influence players and proposes that they possess the ability to persuade through *procedural rhetoric*; the art of persuasion through rule-based representations and interactions, or quite simply the practice of using processes persuasively. (ix) This *procedural rhetoric* can play an integral role in inspiring thought and investigation in developing an individual's own framework and opinions. With the onslaught of media outlets an individual is bombarded on a moment-by-moment basis with thoughts and opinions of others and may find it difficult to decipher their own voice among the crowd. Bogost would like to "advance persuasive games as an alternative whose promise lies in the possibility of using *procedural rhetoric* to support or challenge our understanding of the way things in the world do or should work." (59) I believe that the most promise lies in the notion of videogames recreating and reconstructing real world environments in which one is forced to make choices. This allows a safe place for inquiry, exploration, discovery and ultimately learning. It is about questioning how *procedural rhetoric* can be utilized to quite simply promote and inspire discourse, to persuade thoughts and investigation and to institute change. By creating environments where the individual may investigate and explore, design works as a catalyst for reshaping frameworks within the mind of the individual.

Persuasion, Young Adults and A Decision

When considering videogames as a persuasive tool our audience, gaming enthusiasts, are typically thought of as falling within the category of young adults. While this assumption may not be wholly accurate — considering that new and old videogame technologies alike attract a wide age range of enthusiasts — young adults *are* in a rather impressionable time in their lives where they are asked to make many decisions that will ultimately affect the course of their future. In an attempt to institute social change and re-shape the frameworks within the minds of these young adults *procedural rhetoric* has the potential to play a vital role. One such area where many organizations are making an attempt to structure a certain framework within their minds is that of the choice of whether or not to try drugs.

At Above The Influence (www.abovetheinfluence.com) teens are invited to participate in a series of interactive environments and games, such as "Stoners in the Mist", that attempt to educate individuals on the negative effects of drug uses. While the campaign provides useful resources for teens the games remain quite lacking. They merely utilize conventional tropes of typical games for entertainment and miss a valuable opportunity to employ *procedural rhetoric* in an area in which it could be rather beneficial. Alternatively www.trydrugs.net does quite the contrary. Developed to prepare young people for the question of whether or not to try drugs, this rather simple interactive environment simulates what it may actually feel like to be under the influence of varying drugs. While not constructed as a videogame per se, [trydrugs.net](http://www.trydrugs.net) allows visitors to virtually experience the uncontrollable effects of drugs and ultimately allows them to decide for themselves how they may respond when asked if they would like to try them. Through the process of an inhibited procedure the visitor is invited and persuaded to consider the outcomes and weigh the options. By utilizing *procedural rhetoric* [trydrugs.net](http://www.trydrugs.net) is making an attempt to institute social changes amongst young adults faced with the question of whether or not to try drugs.

Values in Persuasive Design

While persuasion just might be the pure magic of design, having that magic of persuasion tucked in our back pocket each day brings up another simple quandary. Do I even believe what I am preaching? As a designer we are invited to mirror our cultural and social surrounds or to institute behavioral change and shape the values

of society as a whole. Along with our investigations into how design itself can actually persuade we have to ask how our own values play into design as persuasion.

Rick Robinson as an ethnographic researcher calls for designers to re-shape frameworks for particular experiences within the mind of the beholder, yet in order to do this we must ultimately be clear on our own set of values. If you are going to design to persuade and to bring about change you have to ask why? How you decide what is right or good? And how do you re-shape the frameworks within the mind of the individual to accept this? This is where our own process as designers comes into play.

By using process persuasively the designer has the potential to address fundamental cultural issues, inviting the participant to engage, explore and ponder. It is our design decisions that will ultimately initiate this investigation. The decisions made by young adults could very well be quite different after visiting trydrugs.net if the designer had privileged different controllable processes in the navigation to facilitate a much more pleasant experience. But the design interface in this situation is ultimately leaving the decision up to the individual. In all actuality it is inviting the user to in fact “try drugs” and through the expressive process they are persuaded to consider the possibilities, start a dialog, decide for themselves.

Design is indeed persuasion yet the extent of this persuasive potential lies in the choices we make as a designer. Persuasion through *procedural rhetoric* has the capability to institute social and cultural change by re-shaping the framework for a particular experience in the mind of the individual. We as designers have the potential to create the platforms for this exploration and must consider our own set of values and beliefs in the process.

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SHELLY UPTON

INTERFACE, POWER AND PARTICIPANTS

Shelly Upton

The role that interface plays in the dynamics of power and control in new media is influenced by a set of complex factors. For example, does the interactive nature of new media give users increased autonomy over these systems, or simply a false sense of power and control?

“More and more people are convinced that, if they do not feel right, it is because there is something disordered inside them, and not because they are manifesting a healthy refusal to adapt...” — Ivan Illich, quoted in *In the Bubble: Designing in a Complex World*.

Illich exposes an ongoing and common divide between people and their technology. Even the performing of simple routine tasks like saving, naming and locating files and folders, can often cause users often feel “disordered” when they experience difficulty. The frustrated user feels they do not have control of the machine, or the means of attaining it. The resulting sense of a lack of power is related to interface, for at any moment they have the ability to shut down, but instead they are trapped in an environment where he/she is expected to adapt to the interface.

Thackara also discusses the integration of new media and health care. The example he uses is Accenture, which positions new media as adaptable to the user in its development of an interactive, online medicine cabinet whose primary function is to help patients with managing their daily medical routines. Although there are limits

to its capabilities, the medicine cabinet customizes to the user individualized needs and even features a human element with its audio greetings. Some of its functions include monitoring the use of medications, ordering drug refills, and communicating blood pressure data to doctors. It also uses face-recognition cameras and software to identify the user interacting with it at any given time and adjusts its settings accordingly. This human-centered technology allows its users to feel more control over their often confusing and unpredictable daily activities, thereby extending the reach of its influence beyond the realm of the user interface. By reducing errors and time spent dealing with medical issues, this technology gives the user power in the form of time. In addition, it also empowers its users by providing fast, accessible, medical information. “60 million Americans troll the Net in search of health-related information...” Anonymous interaction with useful health information has also proven to “break through the isolation” that mental illness can impose on a patient, and provide them with information and support that contributes to their well-being.

Windows and Mirrors shifts focus from practical applications of new media interfaces to new media as works of art. Bolter and Gromola state that “Digital art can provide such a clear test of the possibilities and constraints of digital design. It fails or succeeds unequivocally on the strength of its interface.” Identifying the distinct components of art and interface as separate, unique but contributing facets of a “digital artifact” heightens the potential effect of each on the user, which then allows each to be examined and understood in isolation, which again is an empowering experience, returning a sense of control to the user. Interfaces that allow for active relationships or exchanges between the art and the viewer change the viewer's role or typical position from passive observer to that of an active “participant.” As a participant one can assert, or insert, a degree of control, voice, determination, or personal vision into their relationship with the art – and perhaps then experience what Bolter and Gromola describe as a “consensual hallucination.”

The digital installation Text Rain provides a critical example of this in practice: within all of the pre-determined constraints, such as a given range of allowable text, simulated physics and spacial/environmental limitations allotted to the piece, a participant is given full control over their experience with the digital art, resulting in the dissolving of the numerous real constraints that do exist. Text Rain is as much an expression on its viewers as of its creators. The power is shared by both the creator and participant. The creator/designer/artist determines the limits that affect the possible experiences but the participant ultimately directs the final piece.

This position is further described in *The Language of New Media*. In the first chapter, “What Is New Media?” author Lev Manovich discusses new media's interactive qualities, and how, in the process of interacting, a user generates unique work, thus becoming a co-author. In discussing the notion of “variables” Manovich, asks the question: “Do we want or need such freedom?” Variables, he describes, allow the user to customize a media object. Avatars, a MySpace color scheme and desktop folders are just a few possible variables. His answer appears to be yes—the act of customizing a media object is perceived by a user as an exertion of power over the computer/system. It is important to remember, however, that there are “behind the scenes” constraints, imposed by a creator, similar to those discussed above with Text Rain. For example, while control over a page color is extended to users, through simple web programming, it is the creators/programmers at MySpace who still have primary authority to determine the range of layout options available through the site. Beyond the realm of programs, the software plays an integral role in determining a users control. As an example, the browser has its own range of exclusive powers, derived from its unique rendering of the HTML. At a more macro level, hardware plays an important role as well. The computer itself has power over the speed or seamlessness of an experience, the resolution of display and the monitor has power over the size of the viewable space. All of these variables would suggest that individuals need some freedom allowed by variables to help overlook the lack of control they have with regards to other components of a new media experience.

New media experiences are constructed upon a participant's expectations of power over media and interface. Both the medium and the interface are sources for questioning or shifting the balance of control. Thackara's examples of new media in health care illustrate the immense potential benefit of new media and interfaces, when designed specifically to act as tools in the service of improving human life. Text Rain describes the possibilities becoming participants and the opportunities for engagement with new media art; the duality which new media affords, between the creator, who choreographs, or sets the stage for an experience to occur,

and the viewer/participant who ultimately sculpts, realizes and fulfills the experience. Manovich provides historical context and detailed descriptions that elaborate on what constitutes a new medium, allowing the notion of user freedoms to be explored. The interactive nature of new media does seem to give users an artificial, or perhaps shallow sense of power. There are always constraints to overcome with new technologies, but the goal of providing a more engaging and pleasant interaction with technology by creating an environment where the user ultimately creates their own experience and senses their autonomy separate from that of the machine would be an appropriate direction to move towards.

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A BRIEF LOOK AT A SECRET WAR

Shelly Upton

Lunenfeld's forthcoming book *The Secret War between Uploading and Downloading* really brought me back to some time I spent in a class called "Mass Media and Society." I am sure most universities offer similar classes now with the influx in attention being paid to our technology-centered culture. My professor at the time had decided to avoid television completely. I remember thinking "How can someone teaching a class on Mass Media and Society not engage themselves in our culture's biggest source of mass media?" I realized shortly after that the internet and computer had already surpassed television and cable/broadcast as the main source of information and entertainment in my life, and probably others' lives as well. My professor was working on research regarding interactions between people and their work spaces, so I thought about my workspace and how the only machine in my dorm room was my computer. I had a TV tuner card, DVD player, over 200GB of movies/music/pictures, and VOIP phone setup on the machine I also used to write my papers and chat with friends via instant messenger. This machine and all the intangible files, programs, and memories stored on it was undoubtedly an extension of myself.

"McLuhan was half-right: The medium is the message, but the messages also define the medium (Lunenfeld, p.11)" This is an accurate statement from my point of view, but only the beginning. Lunenfeld discusses his thoughts on the differing roles downloading and uploading play in the interaction of users with technology. It's obvious to me that the messages, uploaded or downloaded, via the internet have defined the internet as a medium. What is not so obvious to me is how this wealth of information will be continue to be created and digested by the public, and if it really is as bad as "diabetes" according to Lunenfeld.

If, collectively as a culture, we do start uploading more, then who will be downloading all this content? For every one downloader, there are millions of uploaders, and millions of other downloaders who are possibly downloading the exact same material. Now, I am all for everyone contributing if they have something to add to our collective knowledge, or even if they just want to be seen/heard by an audience of one. I do not think there is any sort of obligation to upload just because we can.

My thoughts on this remind me of a history textbook. As time passes, there will certainly be more content included in a history text. Does the book get bigger as information is added? Does the book hover around the same length as chunks of time are displaced by others? This does somewhat justify Lunenfeld's call for more uploading, in the sense that the internet, as a medium, allows for neverending documentation of everything. I think, though, that quality is more important than quantity at this point in time. When the internet was new, there was certainly a benefit to adding more information and expanding the sources of that information. Now, though, most people in our culture are aware that they can upload information just as easily as they can download it. They make the choice to take in more information than they put out simply because an individual's ability to contribute to the collective knowledge may require active knowledge collection.

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BACK TO PRESCHOOL? MAKING AND SHARING NEW MEDIA

Shelly Upton

Peter Lunenfeld argues in *The Secret War Between Downloading & Uploading* that uploading and downloading should be meaningful and balanced, and that we need new ways to deal with the influx of mindlessly consumed information. His reasoning is that human nature is to make and share, and we are suffering from a sickness of receiving too much. While he may not be wrong when he continues to describe our culture's mindless downloading, let us not overlook the newer affordances available to the mass media consumer and take a closer look at the barriers that impede making and sharing using new media.

The theory that humans possess an inherent need to create and share with others is an underlying criterion for accepting the existence of a "silent war." The superfluous experiences we engage in are what differentiate our species from others, and the affordances of new media have exponentially increased our culture's capacity to create and share. "McLuhan was half right: the medium is the message, but the messages also define the medium." (Lunenfeld, p.11) This is true and, unfortunately, the reputations of technologies like the television have clouded the way many of us view the computer, the culture machine.

Consider one of the most powerful culture machines available now: Microsoft's Xbox 360. Xbox Live, an online service, allows users to (literally) download games, movies, and avatars. Users can also upload and sell their own games in the Xbox Community games section, and interact with their friends while playing. Creating and developing games on your own was not an affordance of previous game consoles, so a game creator was limited to the internet or pitching their idea to a game company. Flash-based internet memes and traditional games are now being brought back to life on the Xbox 360 platform by independent game developers. It is an encouraging thought that the Xbox 360 can make possible for games what the podcast and webisode have done for independent audio and video distribution.

"Live your moment. Make every one count. Xbox 360 delivers the moments you love to live." (Xbox 360 web site, 2009) Although the Xbox 360 is undoubtedly a perfect example of a culture machine, the focus on downloading eclipses its uploading capabilities which is evidenced in the use of the word "delivers." Delivery is a one-way street. The Xbox 360 is being positioned as a device with the power to deliver happiness, backed up by the expression on the assumed user's face. All the user has to do is sit back, relax, and download an experience. This is an unfortunate closed-interactivity (Manovich, 2002) situation because the Xbox 360 is far more multi-faceted than that. Sure, users can browse existing "moments" within the menu structure, but they should be able to intuitively create the moments they love to live, casting them in the role of participant instead of user. A metamorphosis from user to participant requires further investigation into the role of interface and interactivity in new media.

Lev Manovich calls for open-interactivity in new media - breaking away from rigid systems of menus and navigation hierarchies. A good interface should entice someone to upload. It should tap into the human need to create and participate. "Text Rain is as much an expression of its viewers as of its creators (Bolter & Gromala, p.12)." The Text Rain artists, Camille Utterback & Romy Achituv, created an interface that urges the viewer to take an active role in creating a piece of art. The users cannot help but exercise their curiosity, and they ultimately create the experience themselves. At this point the users and viewers of this piece become participants in the experience - an active relationship between the art and viewer, mediated by the interface. Text Rain proves that the design of an interface is a powerful force, and that designers need to harness this power to persuade its users to actively participate and upload.

Observations of the pragmatic uses of new media also lead us to believe that we are on the right track to increasing our collective uploading. Jeffrey Han's research on multi-touch interface technology focuses on the implications of collaboration in interface design. He argues that breaking the rules inherent to a point and click system is the next step in interface design. "I kind of cringe at the idea that we're gonna introduce a whole new

generation of people to computing with kind of this standard mouse-and-windows pointer interface. This is something that I think is really the way we should be interacting with the machines from this point on.” (Han, 3:24) Collaboration is ubiquitous in our culture's creative efforts. Efficient collaboration will be directly responsible for an increase in uploading, and good interface design will promote the required efficient collaboration. Han's multi-touch system also creates an intuitive, scalable interface that has many possibilities for increasing the accessibility of new media. The steep learning curve and ease of control will grant access to uploading capabilities that a point-and-click interface does not. We cannot advocate increased uploading if there are barriers keeping users from doing so.

Lunenfeld's argument is weakened by the emerging conditions of participation and collaboration evident in current technological trends. The "call to action" is being answered by devices such as the Xbox 360, multi-touch interfaces, and other technology such as the iPhone and web 2.0 in general. Still, though, as a culture we need to revisit the lessons from preschool and re-learn making and sharing, but with new media instead of blocks and crayons. Our culture has become a perpetual show-and-tell, and too many potential contributors are sitting quietly in the back of the classroom. No one is obligated to participate, but good interface design will entice people to make and share, and be human.

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A BRIEF LOOK AT MEDIUM AND MATERIALITY

Shelly Upton

Writing Machines by Katherine Hayles is an exploration of text and the role that the medium plays in how the text is experienced or consumed. She argues that there is a need for media-specific analysis when examining modern texts since a critic should be “alert to the ways in which the medium constructs the work and the work constructs the the medium.” (Hayles, Lexicon Linkmap) With this obviously in mind, she and Anne Burdick presented the *Writing Machines* text in a thoughtfully designed book and web supplement. The book consists of a narrative about a character who is embellished with bits of Hayle's life, and analysis of three texts in which Hayles uses a media-specific approach. The pieces she chose were Talan Memmott's “Lexia to Perplexia,” Tom Phillips' *A Humument*, and Mark Danielewski's *House of Leaves*. The web supplement is an expansion on the book and provides updates to the text, sample images from all three analysis, key definitions, and other additional content.

Although I was not present for the first discussion with Katherine, I was intrigued by one of the posted works she referenced by Wendy Chun. I visited the digital companion site for her book *Control and Freedom: Power and Paranoia in the Age of Fiber Optics* and found myself interested for a couple of reasons. First, I explored the power dynamic between new media interfaces and the user in an earlier written response which is a main point in Chun's book. Second, much of my career and academic interests (web development, document design, technical documentation) relate to her overview of the “Why Cyberspace?” chapter. While browsing the page, I noticed her inclusion of the following information (spacial writing) and thought it was a fantastic way to utilize the internet medium in a way that a book cannot be used.

“We know more about you than you think.

Your display currently has a resolution of 1280x800 pixels with 32-bit color

Your platform is: Win32

You've visited 2 page(s) in this browser window.”

(<http://www.controlandfreedom.net/chapter1.php>)

Hayles' web supplement also prompted me to analyze it briefly and consider the differences between the experience of reading the book and using the web supplement, and if they work well together. Navigation through the Lexicon Linkmap or the Notes is intuitive, but the user must first engage in a trial and error approach to sort through the information since there are fewer affordances for the user. Pages like the Bibliography and the Index have familiar visual cues and information hierarchies which, for me, led to a natural interaction with that material. My overall opinion of the supplement is still in a formative stage, but I plan on developing it further if it becomes relevant to my final investigation into Hayles' work. I did find the extra information available on the web supplement helpful in digesting and organizing the content I read from the book, and I imagine that I would feel the same way about the relationship between Wendy Chun's book and web supplement.

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HUMAN, LITERARY AND ELECTRONIC BODIES

Shelly Upton

Human Bodies

Interface users are bodies in the most traditional sense. They are flesh and bone. They possess a brain with which they make decisions, form opinions, communicate, generate emotions, and so on. A reader of Katherine Hayles' works will surely notice the use of the body as a metaphor in several of her pieces regarding new media. With this metaphor in mind, can we, as interface creators, design better experiences for users in a time when the materiality of words are increasingly diversified?

Literary Bodies

Hayles alludes to literature as bodies several times throughout *Writing Machines*, and even goes so far as to write, "Literature was never only words, never merely immaterial verbal constructions. Literary texts, like us, have bodies, an actuality necessitating that their materialities and meanings are deeply interwoven into each other." (Hayles, p.107)

Digging deeper into the broadly defined metaphor of literature as a body, Hayles also pulls in "such inert metaphors as footnotes, spine, and appendix." (Hayles, p.39) "Hollowbound Book," the animated WebTake developed in response to *Writing Machines*, is a superb illustration of the body metaphor as a piece of literature, specifically a bound book. It is an enjoyable pseudo-interactive piece which offers the user a small sense of interactivity, while maintaining a relatively rigid narrative.

In an examination of the artist's book *A Humument*, Hayles notes the process by which Tom Phillips replaced one narrative with another (more visual) narrative and cited the new "story" as a technotext. *A Humument* is very much a body – its departure from traditional printed literature gives a spontaneous, life-like quality to the book. Hayles points out that "Significantly, this writing is illegible as words, transformed into the image or representation of writing rather than writing itself." (Hayles, p.86) The title of the original narrative is "A Human Document." This old title is not completely hidden by Phillips' alterations, and is even prominently displayed on an excerpt in *Writing Machines*. This title alludes to recognition of literature as a human rather than an object, questioning a book's nature as an inanimate object.

Electronic Bodies

Much like the human body as parts (arms, legs, heart and lungs) electronic bodies have parts that comprise a whole. Computers are comprised of hard drives, processors, monitors, and keyboards among many other pieces. A dynamic database driven web site separates code, content, and style into separate pieces, which then fragment once again by separating the code into tags, styles into attributes, and content into tables and cells. The collection of parts amasses into a completed electronic entity that appears to users as a whole.

Since the human body is natural, healthy, and ideal when it is whole, there may be similar implications with other bodies as well. Hayles describes “Patchwork Girl” as being a depiction of a fragmented body. The disassembled nature of the human figure in this piece seems to set a grim tone, however, it does bring out connections between the displayed body and the body of electronic text itself and its use of navigation through images, words, text, and the machine.

“Lexia to Perplexia” also employs the fragmented body to set a tone for the literature. Using images of the human eye, Talan Memmott gives a direct invitation to the use of the body as a metaphor, and with the disjointed, and sometimes chaotic use of creole discourse, he successfully fragments “Lexia to Perplexia's” body of words into a mash-up of text, code that should be invisible, and code that means nothing. In addition, portions of the text are not legible, and the navigation is “nervous” (Hayles, 2002) all of which steal human control from the user and place it with the electronic interface instead. A user's sense of power and control while navigating any new media piece are important considerations for the tone and purpose. Interactive web-based media, for example, can easily displace user control by embedding video or auto-run flash programs. Even something as simple as an outdated site with dead links and poor information architecture can create unpleasant user experiences due to the fragmented structure of the piece. Newer technologies that offer more affordances to a user such as AJAX (Asynchronous Javascript and XHTML) and database-driven web sites are highly regarded for their user-friendly implementations, and allow the user to assemble or arrange their experience with the electronic body. The fragmented nature of these electronic bodies can be used to enhance the tone of a piece, but without attention it may become merely a detriment to user experience.

The Body and Interface Design

Hayles argues throughout her scholarly work and in lectures that there is no separation between the mind and the human body. Considering a video game console as a body, a player uses a headset and controller to interact with the console as they play a game. The player's human body engages verbal, auditory, and tactile interactions with an electronic body. Both the mind and body are working to create the experience of video game play, and this fast-paced interaction is only part of the hyper-attentive qualities (Hayles, 2007) many new media users possess. So, as interface creators, we must take the user's body and mind into consideration when we design, and be aware of how the fragmented nature of electronic bodies can affect power dynamics and evoke emotions in the user, and harness it for a desired impact on user experience.

Creative endeavors like “The Hollowbound Book,” *A Humument*, “Patchwork Girl” and “Lexia to Perplexia” have proven to be fantastic ways to see what can be done with a new media interface. Additionally it highlights the effects design choices have on user experience with literature. These pieces offer inspiration in that they are magnificent works of art, and also as a point of reference for what is and isn't usable in an increasingly media-specific creative environment.

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INTERFACES AND EDUCATION: AN INTRODUCTION

Shelly Upton

Persuasive Games is an investigation of video games as a subset of procedural media. Specifically, Bogost focuses on the affordances of the medium when used for persuasion. He argues that procedural rhetoric is the driving force in persuasive video games, and that it has just as much relevance in the study of persuasion as visual rhetoric or traditional verbal and textual rhetoric. Bogost cites and thoroughly describes an exhaustive list of example games and their capacity for persuasion, including arguably labeled “serious” games for political candidates (Howard Dean for Iowa Game,) environmental causes (Balance of the Planet,) and business ethics (The McDonald's Videogame.)

The expressive and persuasive power of procedurality in the video games mentioned in *Persuasive Games* should also be applied to educational, instructional games. The serious games Bogost mentions certainly have an underlying instructional intent; the user is supposed to finish the game with more knowledge about the subject than when they started. They have a purpose beyond mere education, though. Howard Dean for Iowa Game gathers voters by exposing them to simulated campaigning. The McDonald's Videogame informs users of ethical issues surrounding the fast food industry so the user can make an informed decision about their attitude on current fast food business practices. An educational, instructional video game is meant to teach. The user is only supposed to gain knowledge from their interaction with the technology.

Just as Bogost asserts that "As players of video games and other computational artifacts we should recognize procedural rhetoric as a new way to interrogate our world, to comment on it, to disrupt and challenge it (Bogost, p. 340)," instructional designers should embrace the power of procedural rhetoric to craft effective educational experiences in the form of serious video games. Old uses of visual, textual and verbal rhetoric in education should be interrogated and challenged. As Katherine Hayles explains further in "Hyper and Deep Attention: The Generational Divide in Cognitive Models," hyper-attention is becoming more prevalent than deep-attention in younger generations (Hayles, 2007.) Old methods of teaching will become ineffective in classrooms where students have so much technological stimulation. While hyper-attentive students have adapted to juggling texting, gaming, and listening to lectures at the same time, there is potential in the procedurality of educational video games to persuade students to use their hyper-attentive cognitive state as more than a means of juggling unrelated tasks.

Procedural rhetoric's inherent affordances in a video game would create an educational environment where the process of learning is molded by the user's actions in an interactive "world." Their experience, though, remains bounded by rules and technical constraints established by the designer. "Interactivity guarantees neither meaningful expression nor meaningful persuasion, but it sets the stage for both (Bogost, p. 45.) With the stage set, it is up to the designer to create a substantive educational experience using persuasive and expressive procedural rhetoric.

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INTERFACES AND EDUCATION

Shelly Upton

My first experience with educational video games was playing Oregon Trail in a grade school social studies class. We felt like we were cheating the system by spending 40 minutes of our time in school playing a video game. Looking back, I am not sure I really learned anything about the real Oregon Trail from playing the game, but I definitely remember the game experience vividly and even joke with friends about our time spent pretending to ford rivers or hunt bison and guessing who in the wagon party would die from typhoid before we hit the mountain pass. The novelty of playing a video game in an academic setting completely overshadowed its ability to educate. There were more giggles than discussions during Oregon Trail day, and there was more pushing of the game's limits than engagement in serious survival strategies during an expedition to the west. Blame for this response by students should not be placed on the platform or genre, though, but the bright colors, pixelated animations, and comedic situations instead - all of which are generated by poor game design. Now, game design has evolved and become a completely different endeavor over the last fifteen to twenty years.

About ten years after my Oregon Trail days, during the summer of 2006, I worked on a project that delivered a web site to local math teachers for use in the classroom. It was a repository for original lesson plans, where teachers could submit their own lessons and locate new lessons created by others. All district conferences and seminars were announced on the site as well, making it a central information hub for all math teachers in

approximately a 50 mile radius. My job was to re-design their existing web site so the teachers would be more comfortable using it. The existing site included a PHP-driven calendar and file uploading system. It was, from a web developer's standpoint, a very slick interface, but it was beyond the technical expertise of the majority of users. Quickly, I found out that my job was not to simply build a more usable site, but to actually persuade teachers to use it. My team and I took the direct approach to persuasion. We held information sessions, ran usability tests with the teachers, and attended school district seminars to gather user opinion and present tutorials on the new site. Although the new interface generated plenty of excitement upon launch and was considered a vast improvement, all site activity stopped within the year. Teachers were still reluctant to use it regularly even though my usability studies proved that they were capable. Now I realize how important it was to the success of the site that the interactive experience persuade the users. This site was not a video game, but the ability to harness procedural rhetoric was certainly there. I, too, created a poorly designed interface, visually, rhetorically, and ultimately procedurally. Later that same year, I attended the IEEE Professional Communication conference to present my work in an informal poster presentation. Toward the end of the session I was chatting with a professor from the area and when I explained the teachers' reluctance to adopt this interactive tool even in its revised state, he very simply asked me "Why didn't you make them?" At that point I thought to myself "I don't want to make anyone do anything, I want them to want to."

When designing interactive learning tools we must consider the persuasive potential of the interactive design as a point of interface as well as the physical platform as another instance of interface. There are no platforms that afford a designer a means of creating an invisible interface, and that is a good thing. The materiality of interfaces provides a sort of tactile and mental stimulation in the user. With an invisible interface, a student using educational interactive media would be simply experiencing the norm. The platform serves to remind the users what they are actually doing (playing a game) in increasingly realistic fabricated environments. The platform, or the physical point of interface, is the exciting part - the part that lures a user to the experience. After that, interactive design and procedural rhetoric engage and persuade the user within the boundaries of the platform.

Oregon Trail was an awesome game. I wouldn't change a thing even though I know that is just my nostalgic side speaking and not my voice as a more educated interface developer and interrogator. As it was, it still makes for a great case study in exploring the use of interactivity and video games in an educational setting. Oregon Trail's designers were confined to the affordances of the platforms and interfaces of the time. Moving forward during this boom of innovative interface and platform creation, designers can recall the limitations of past games and use their shortcomings to mold new, engaging, and effective interactive experiences. The web site I created for the math teachers could have been far more successful had I understood and worked with the procedurality of the interface. I would love to get a second shot at designing the now defunct web site because I want the users to overcome their reluctance to and even fear of changing the process of educating students and themselves. I had the resources of interface and procedural rhetoric at my disposal but neglected to use them effectively, which is not a mistake I plan on making again.



LAUREN WAUGH

INTERFACE: THOUGHTS UPON INITIAL CONTEMPLATION

Lauren Waugh

My initial view of interface was extremely narrow and limited to the look and function of objects on a computer screen. But per discussions with my peers, I've come to see interface as more of a concept instead of a definable thing. After casting a net over an extremely broad range of possibilities stemming from the idea that anything can

be an interface, I began to feel overwhelmed. Through this, I learned that defining a few parameters upon the concept is important if it is to be used to interpret existing tools and be built upon in a meaningful way.

Lev Manovich's *The Language of New Media*, Jay David Bolter and Diane Gromala's *Windows and Mirrors*, and John Thackara's *In the Bubble* made up a trilogy of readings that challenged my interpretation of interface by both expanding and honing my previous perceptions. Discussions of the social implications of interface drew me into the readings, from technological origins to changing perceptions surrounding the concept. These discussions sparked my interest in human interaction with different forms of technology and media, not only historically and presently, but also in the future. I found the different analyses on how those interactions can be altered to create unique experiences intriguing.

In the chapter "What is New Media," Manovich cites a shift in the interactive makeup of society by associating social change with historical shifts in economic and production standards. He says that "historically, changes in media technologies are correlated to social change. If the logic of old media corresponded to the logic of industrial mass society, the logic of new media fits the logic of the postindustrial society, which values individuality over conformity" (41). The implications of this assertion shed light on how new media products have begun to shape a world in which the user has more control than ever before.

Manovich goes on to discuss the customization that has come to define the new media generation valuing "individuality over conformity." He begins by characterizing the new media capabilities of digitizing information on the computer screen and of the user's abilities to search for or alter such information. He goes on to describe how these different pieces co-exist and can come together to create unique experiences based on how users choose to interact with and form them, thus the basis of customization. Manovich says that "in a postindustrial society, every citizen can construct her own custom lifestyle and "select" her ideology from a large (but not infinite) number of choices" (42).

In thinking about an interface as a digital construct, one that is well-crafted can, through its design, further the concept of customization, thereby making it easier for users to build these unique lifestyles based around specific tastes, wants, and needs. Manovich says that "it is difficult to deal theoretically with users' experiences of these [interactive] structures" (56). Yet, allowing users more control creates the opportunity for tailoring satisfactory and engaging experiences. An interface can act as a bridge between the user and the experience by creating conditions of interaction.

In *Windows and Mirrors*, Bolter and Gromala also focus on the user, talking about interaction with computers in particular. They discuss a different form of customization, that of using an interface to create a digital arena that can be both transparent but also reflective of the user's contextual reality. They say "in the past decade, some digital designers have come to speak of their task as 'interaction design,' understanding an interface or application not as a series of static screens, but rather as a process of give and take between computer and user" (24). In thinking about interface in this manner, it seems natural that the success or failure of a computer-based experience can depend heavily on the way that the interface is constructed. Bolter and Gromala say that "today, we do not operate computers; rather, we interact with them, and successful digital artifacts are designed to be experienced, not simply used" (22).

By comparing the interfaces of Apple and Microsoft Windows, Bolter and Gromala show how a well-planned interface, in the example of Apple, can create an experience in which the user is able to freely roam and reflect, yet maintain a sense of control. Whereas, in the case of Microsoft Windows, the amount of control that is taken away is a source for confusion and frustration. They say that "the most compelling interfaces will make the user aware of her contexts and, in the process, redefine the contexts in which she and the interface together operate" (27). These conditions for the formation of a relationship between a user and an interface further enforce the importance of "if-then scenarios" that designers must keep in mind when creating an interface (24).

In *In the Bubble*, John Thackara emphasizes the importance of keeping a human-centered approach when designing in a technologically overrun world. He says "we need to change the innovation agenda in such a way that people come before tech" (4). Thackara argues against technology for the sake of technology and cites that there is inherent value to the formation and maintenance of social relationships that define the human race. This approach can be manifested in the creation of interfaces that provide the social interaction that can forge

meaningful relationships. Thackara says that “social networks generally start out small and develop gradually. The modest design actions we might take to improve the efficiency of information transfer within a network are to create hubs, or add new links, to act as artificial shortcuts between otherwise distant regions” (132).

Thackara says that a “shift in emphasis from what things look like to how they behave—from designing on the world to designing in the world—is a big one for design” (214). This statement has implications as to the endless possibilities of the meaning of interface moving forward. If designers view the creation of an interface as something that is a customizable reflection of the user, the opportunity for innovation is opened up to a vast amount of possibilities.

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PETER LUNENFELD’S CALL TO ACTION

Lauren Waugh

In his writing, Peter Lunenfeld focuses on emerging cultures relevant to computer-based media and how, as a group, these specifically relate to the state of production and consumption within our society. Using the example of uploading and downloading to unify his argument, Lunenfeld describes the television-led progression into a culture of absorption with a tendency to take in information instead of provide meaningful feedback. He says “the entire development of capitalism over the past half-century was predicated on shifting patterns of consumption to concentrate on wants rather than needs,” which is one reason that downloading is so much more prevalent than uploading (15).

Lunenfeld asserts that people should be uploading content more often instead of always being content to download and consume. He argues that this uploaded content should have meaning through the introduction of new concepts or through the addition of value to the existing landscape. Through this comes the creation of sticky ideas, which are those that should be able to be built upon and expanded. Sticky ideas enable the utilization of participatory culture for the collective good instead of for purely niche subjects, thereby setting up the emergence of a more productive-minded population. He sees the inherent value of the computer as a “cultural machine” and cites its unicity as an all-encompassing tool for production, distribution, and reception (5).

Because he believes that the computer offers an overwhelming opportunity to aid in the creation of a more livable world, Lunenfeld finds it disheartening that the machines are only being used to their full potential by a very narrow group of people. He feels that, since the scope of the computer’s abilities is very vast, a multiplicity of networked users could harness great power and ultimately build and define new cultural shifts that would directly affect social norms. Instead, the majority of users have carried over television consumption behaviors into their interactions with computers. He fears that the advent of handheld devices may negate the ease of uploading, thereby creating a culture in which the possibilities of computing are reduced to shopping behaviors.

Lunenfeld calls for the computer culture to shape audiences that possess the characteristics of critics instead of onlookers. The model of the television is one-dimensional, only including the ability to consume and not opening up an avenue for meaning-making, collaboration, or problem solving, yet the computer provides many means for cultural contribution. He believes that this shaping can begin with more mindful consumption habits, meaning that if users are more conscious of the things that they choose to direct their attention toward, such as what they download, then they can, in turn, create the time to make meaningful connections. This can then translate into contributing behaviors such as uploading, not only individually, but also within the networks to which they belong. It is the notion of the unfinished, the idea that an artifact or idea can be in a state of constant evolution as controlled by the users contributing to it, that has emerged as a defining characteristic of the rich interaction and meaning-making that the computer as a cultural machine affords.

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MEANINGFUL PRODUCTION THROUGH ONLINE COMMUNITY

Lauren Waugh

In *The Secret War Between Downloading and Uploading*, Peter Lunenfeld discusses the advent of a computer-based culture and how its arrival has created vast opportunities for intellectual production instead of passive consumption. Lunenfeld argues that the computer has come into its own as a “cultural machine” by being born on the heels of the bomb and, at least from an entertainment perspective, evolving out of the television. He has high hopes for the potential that this tag implies (5). He says that “should we push the computer to its limitless limits, we may well be able to address some of the key problems we face and make the first half of the 21st century more livable than the second half of the last one” (6).

Lunenfeld believes that the computer exists as a unique tool, being “the first media machine that serves as the mode of production, the means of distribution, and the site of reception” (8). However, he does not believe that it is being utilized to its full potential. He chooses to focus on the potentials for downloading and uploading that are inherent to the networked computer, saying that Americans are constantly downloading (consuming) but rarely uploading (producing) content that has cultural merit and value. He likens downloading-heavy behaviors with a sickness, a “cultural diabetes,” and blames the tendency in part on the television-taught behavior of infinite consumption (13). He believes that the cure to this cultural sickness lies within an emergence of more meaningful uploading behaviors.

At face value, a culture of production certainly seems more valuable than one of consumption—it’s intuitive and creates a sound argument—if more is produced, then there’s more from which to choose. This type of culture sets the foundation for great achievement and innovation, while also opening up the opportunity for rich dialogue. Two examples in which this model works particularly well are in the areas of industrial production and intellectual production. Part of the importance of industrial production lies in the ability to improve upon the qualities of physical items through continued making and alteration. Intellectual production has a high yield of innovation within academic and research environments in particular. However, within this traditional view of a production-heavy culture, the roles of the players that produce the goods, whether physical or intellectual, are more clearly defined.

The realm of production that Lunenfeld suggests is one that is very non-traditional in the sense that everyone with access to a networked computer has the ability to create, alter and produce whatever kind of content they see fit. It would seem that, with this type of freedom, motives for production or uploading might stem from much more deeply rooted psychological reasons than traditional production because of the kind of universal power or control that can only be inherent to such an affordance. There is the potential for a lot of culturally meaningful, valuable production through the leveling of the hierarchy of who is allowed to produce—of who is allowed to guide, alter, and define cultural shifts. But there is also the potential for the abuse of this power, for an amassment of useless production that could clog an already information-saturated culture. Could a run on uploading cause a sickness much in the same vein as cultural diabetes—perhaps a cultural coronary due to information clogging? Or is this cultural coronary already going on? Is it a side effect of the unhealthy lifestyle of consumption, consumption, consumption with no meaningful feedback?

There must be a happy medium, one in which meaningful uploading is monitored or controlled—not in a traditional way, not by some higher power or dictatorial curator—but maybe through loyalty to a group, cause or belief. It’s important to remember that the computer also possesses that unique quality of bringing people together in ways that were never before possible. The networked computer provides a forum in which people with similar interests or beliefs can gather and connect, thus encouraging and allowing for the formation of uniquely tight-knit online communities. Maybe the answer to maintaining a balance between the production and consumption of information lies within the meaning of these communities to individual members. Portions of

this phenomenon can be seen in Lunenfeld's example of Stardust@home, in which people are much more willing to participate if they feel that their belonging and subsequent contribution have meaning in the larger scheme of things (106). When people form a personal attachment or feel like they have a stake in the development of something, they are more likely to nurture and protect that relationship.

The production of sticky, unfinished, constantly evolving artifacts and ideas seems to have the greatest potential within online community or group contexts, in which members are accountable to each other for the content they produce and alterations or additions that they make to existing content. It is possible that this loyalty or this sense of belonging may be one of the keys to encouraging people to produce and upload content that is meaningful both within their personal sphere but also within the larger sphere of the community to which they belong.

Lunenfeld discusses and touches on these ideas of community and collaboration being important aspects of the computer culture that could jolt people's behaviors into those of meaningful contribution instead of idle consumption. He says that "the addition of greater levels of information to an object or system is not simply an additive process, it is a transformative one. It transforms objects by augmenting them and situating them in vastly larger hypercontexts, and when done in the proper spirit makes them more sticky" (50). When thinking about meaningful production and uploading, it's important to remember factors such as group mentality and group behavior and how powerful these might be in shaping a cultural shift from mindless downloading to meaningful uploading. Things only have meaning if they are of value to someone or to some group, so production through the filter of the community is one way to ensure that the balance between downloading and uploading is maintained and that, moving forward, each has its own value within the cultural sphere.

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DUAL SUBJECTIVITY BETWEEN USER AND MACHINE

Lauren Waugh

Within her text *Writing Machines*, Katherine Hayles discusses the importance of the growing relationship of simulation and materiality, one that becomes more interwoven as more complex simulations require "bases in the real world" (6). She explores associations between the two through the examples of three different texts, one of which is *Lexia to Perplexia* by Talan Memmott.

In Chapter 4, "Electronic Literature as Technotext: *Lexia to Perplexia*," Hayles describes the digital computer as "the most powerful simulation machine ever built," which, by that definition, lends itself to the creation of a multiplicity of interactive environments (48). She discusses how the construction of specific environments deals directly with the anticipation of user behavior and "in this sense, [the construction] of the user as well as the interface" (48). When expressed in a literary format, Hayles says that these simulation environments provide connections between imagination and sensory interaction, thereby compelling engagement of the "mindbody" as a single entity instead of separate spheres (48). For example, in Memmott's *Lexia to Perplexia*, "the artificiality of the environment is foregrounded to suggest that subjects are themselves simulations operating according to the dynamics and protocols of the medium through which they are constituted" (49).

Within his technotext, Memmott discusses the future of human-computer interaction and works to further the concept of the machine as an extension of the human and the human as an extension of the machine by showing joint subjectivity between the two. One way he does this is through the development of a unique language, one part of which involves the use of what Hayles terms "neologisms—coinages made from existing words that express new syntheses," while the other part introduces an amalgamation of English words and computer code. Memmott also uses the technique of the rewriting mythology by "enacting narratives about how human subjects misunderstand themselves as autonomous agents when in fact they cannot be separated from the information technologies that, more than expressing, co-create them" (50). The third dimension that Memmott

incorporates within his work is that of a “symbolic visual language that images the cyborgization of human subjects” (50).

Lexia to Perplexia reinforces the idea of the human sharing or handing over a portion of control to the computer within an interactive experience through strategically placed moments of action and reaction. Through this, Memmott creates a linking structure that is much more sophisticated than “first-generation literary hypertexts”—the control of choosing where to go is divided between the user and the computer. He says that “the future of human life lies in ‘communification,’ a coinage combining commodification with communication” (49). Hayles argues that “whatever future communification holds for us, it will not do away with materiality or the constraints and enablings that materiality entails” (62).

The discussion based around *Lexia to Perplexia* has connotations of Mark Johnson’s *The Body in the Mind*, in which he talks about the body as an extension of the mind. Similarly, *Lexia to Perplexia* entails connections between the computer and the human body; “the shift in materiality that *Lexia to Perplexia* instantiates creates new connections between screen and eye, cursor and hand, computer coding and natural language, space in front of the screen and behind it” (63). Hayles argues that, even as simulations become more and more realistic, materiality will remain because simulation is rooted in materiality, but to what end? If communification or something similar does prove to be the future of human life, why must materiality remain a constant?

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THE RELATIONSHIP OF ATTENTION SPAN TO SOCIAL INTERACTION

Lauren Waugh

A few weeks ago, while a guest at my teenage cousin’s thirteenth birthday party, I witnessed first hand a phenomenon of which I’d only previously heard but never actually experienced. The scene: a group of teenage girls, sitting around a table, partaking in birthday cake and ice cream while talking and laughing with each other. I watched, happily reminiscent about the parties of my youth, until I realized that something wasn’t quite right; something was a little off. Amidst their chatter, the girls typed away on the keypads of twelve shiny cell phones. Was it possible, I thought to myself, that they were talking to each other in two different ways at the same time?

It was like watching a scene through a snow globe—a microcosm of an evolving generational shift; a shift paced by the introduction of each new nugget of communication technology to each new crop of tech-savvy teenyboppers. Consideration of this spurred me into what I can only term a personal epiphanic moment—I was no longer of that younger generation. I’d never interacted with my friends in quite the same way and wasn’t sure I fully understood what I was seeing. As it turns out, the girls were in fact simultaneously communicating with each other in two types of real time, a fact later confirmed by the birthday girl herself. “Oh yeah,” she said “we do that all the time—have one conversation out loud and another one in secret, through texting.”

Later, I thought about why they would interact in a way that, to me, seemed a little absurd. Perhaps it was simply the availability of the personal devices, or maybe it was the sheer ability to do so that caused them to engage in multiple conversations at once. Thinking about this led me to contemplate what this might mean for the future of social interaction and human emotional relationships.

Events from this birthday scene relate to what N. Katherine Hayles terms as hyper attention in *Hyper and Deep Attention: The Generational Divide in Cognitive Modes*. Within her article, Hayles describes two types of attention, hyper and deep, discussing the implications of each within the realm of education and pedagogy. At their most basic, hyper attention involves “switching focus rapidly among different tasks,” while deep attention “is characterized by concentrating on a single object for long periods” (187). Hayles says that a broadening of

media access and availability, along with a constant need for stimulation directly relates to the way in which today's youth, or "Generation M" divide their attention between choices (191). In fact, the younger the child, the more likely they are to engage in activities that lend themselves to hyper attention (191).

Although Hayles speaks about this in terms of educational methods, it's interesting to think about how a system of learning could translate into the social realm. While some in the educational world embrace the movement toward hyper attention, others believe that deep attention is the only way to really learn a subject and retain meaning (195). Ideally, students would be exposed to assignments promoting both modes of attention instead of one or the other, but with children engaging in a society lending itself more and more to hyper attention, a heavier emphasis on hyper attentive methods may be necessary.

This could create a cycle in which media flow and availability could influence attention spans, which could influence educational methods, which could then influence a path of social interaction. Therefore, a common shift in attention span behaviors has relevant implications within the larger cultural context of social interaction. At the birthday party, the girls were taking the need for constant stimulation that hyper attention affords and, albeit unknowingly, applying it within a social setting. It changed the social dynamic of the group by intertwining the physical with the technological to the point where the two modes of communication became detached from their independent qualities, thus working in conjunction instead of as separate entities.

Hyper attention lends itself to the ability to focus on multiple things at once, which is a crucial characteristic for future generations to possess so that they may effectively sort, categorize, and rank the constant flow of media all around them. But other types of behavior associated with hyper attention, such as jumping sporadically between subjects, may spur a change in the way that humans form and maintain relationships, possibly to the detriment of a unique quality of humanity—the ability to form emotional connections based on the amount of time one spends in contact with another person. I believe that the formation of a meaningful relationship requires attention that is focused rather than fleeting. That is not to say that technology should have no part in the future of human social interaction, but rather that a deeper mode of attention toward another person should be present for the formation and maintenance of a meaningful relationship.

If future cultural environments provide Generation M with the mental tools they need to switch back and forth between hyper and deep attention, then it is quite possible that both could be used in conjunction toward meaningful social interaction. A hyper attentive structure may work in some cases of human interaction in which emotional development is not necessary, such as in a working relationship. In fact, the application of the skills learned through hyper attention of quick sorting and categorization could help to shorten the amount of time spent in "surface" relationship engagement, thereby affording more time to focus on emotional relationships of meaning within personal realms.

Modes of human social interaction will most definitely change with the introduction of technological advances designed by future generations, yet the way in which emotional connections will be formed is in no way predictable. Even so, I believe that, moving forward, the way that people choose to interact with and absorb the constant barrage of media and information thrown into their everyday lives will have both direct and indirect parallels to the way that they will then form and maintain personal relationships. Although these parallels may not manifest themselves as inherently apparent, I think their cultural implications will hold much importance for future human interaction.

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CAN VIDEOGAMES INSTITUTE SOCIAL CHANGE?

Lauren Waugh

In *Persuasive Games: The Expressive Power of Videogames*, Ian Bogost introduces the idea of procedural rhetoric and its use in furthering videogame experiences that translate into the physical world. He defines

procedural rhetoric as “the art of persuasion through rule-based representations and interactions rather than the spoken word, writing, images, or moving pictures” (ix). Bogost claims that videogames have a broad range of capabilities past the mere mimicry of already present social and cultural norms. He says that videogames can be utilized to change belief systems and thereby possess the potential to institute real social change if they are developed using procedural rhetoric.

Bogost cites several existing videogames as examples and, through these examples, procedural rhetoric seems to work best when the user is put in the role of decision-maker and given an array of coexisting but conflicting choices, such as in *The McDonald's Videogame*. Repetition also seems to be the key in the effort to create an awareness within the user about how a system works, such as in *The Howard Dean for Iowa Game* or even *The Toilet Training Game*. It seems to me that these videogames plant thoughts that can later be applied in appropriate situations both consciously and subconsciously.

Therefore, I agree with Bogost in that videogames are an effective medium for teaching how systems, like political campaigns or corporations actually work. I feel that they should be further utilized as such, so that the player can later make informed decisions. However, I think that Bogost's suggestion that videogames could bring about measurable social change is far-reaching and idealistic. I say this because his argument that videogames can shift a player's social values relies on shifts within or of entire belief systems. From my point of view, belief systems are informed by a combination of experiences and concepts. These systems can therefore be full of schematic and stereotypical baggage, which can be difficult to dislodge. Of course knowledge of a specific subject plays into the belief system surrounding that subject, but I don't believe that it always constitutes the whole.

One reason I feel that videogames, even those effectively using procedural rhetoric, don't necessarily have the power to shift behaviors is that some players feel a mental divide between the physical and the game world. Bogost says himself that the effectiveness of an advertisement within a videogame drops significantly because “the player is fully aware that the environment is simulated, and thus advertisement can never escape simulation” (168). In the same way that a simulated environment has the power to negate the effectiveness of an advertisement, could it not also work against the translation of messages that the game is trying to relay, no matter how sophisticated the procedural rhetoric? Since the user knows he's playing a videogame, that user may choose to play against the system, or act in a way that he may not normally act in the physical world. An example of this comes from a video within David Perry's TED Talk *Will Videogames Become Better Than Life?*, in which a teenager discusses his emotional connection to the games that he plays. “Play enough videogames and eventually you will really believe you can snowboard, fly a plane, drive a nine second quarter mile, or kill a man. I know I can.”

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PROCEDURAL RHETORIC: A QUEST FOR SOCIAL CHANGE?

Lauren Waugh

In *Persuasive Games: The Expressive Power of Videogames*, Ian Bogost introduces procedural rhetoric and its use in furthering videogame experiences to inform behaviors within the physical world. He defines procedural rhetoric as “the art of persuasion through rule-based representations and interactions rather than the spoken word, writing, images, or moving pictures” (ix). Bogost claims that videogames have a broad range of capabilities past the mere mimicry of already present social and cultural norms. He says that videogames can be utilized to call belief systems into question and thereby possess the potential to lead to real social change if they are developed using procedural rhetoric.

Bogost discusses procedural rhetoric as a subjective entity, a method of exposing one portion of a particular system through giving the user a certain amount of control within a set of predefined rules and constraints. One outcome of this method may be the questioning of previously held notions or the opening up of

a dialogue surrounding the portrayed claim. He believes that this critical dialogue can lead to value shifts but says that the way claims are introduced through procedural rhetoric holds more importance than the actual content of the game. My question is: what is inherent to procedural rhetoric that motivates the user to see past the world of the videogame and apply this information to the real world?

It's not that I think procedural rhetoric has no validity—from Bogost's descriptions, I feel like it has the power to add an incredibly rich informative layer which can be used to teach specific portions of systems. It's his claim that procedural rhetoric alone is enough to disrupt a fundamentally held belief with which I do not agree. Bogost discusses procedural rhetoric in isolation, but doesn't discuss how it aligns with player qualities like intent, character, values, and physical environment. It seems that, with the examples he uses, Bogost is making assumptions about players that are directly related to the content of the games he discusses, namely that players are interested enough in that content to want to form an opinion about claims therein.

Therefore, I would argue that content, the subject matter that the game confronts, is more important in facilitating value shifts than the construction of the game because it is more directly linked to motivation. Content and its relevance to the player's personal interests or beliefs guide the player's intentions to play the game in the first place. No matter how much procedural rhetoric is employed in a game, its claims cannot successfully lead to social change unless that player is motivated to translate his altered beliefs into actions within a world outside that videogame. These actions could manifest themselves as new dialogue or even altered behavior, but the motivation to do so, no matter whether it's to further or refute a claim, has to be present. Within this, the level of a player's motivation directly corresponds with his feelings on the subject portrayed, although procedural rhetoric might play a part in heightening the interests that inform that motivation.

Bogost cites Molleindustria's *The McDonald's Videogame* as one that uses procedural rhetoric to reveal the necessary evils and corruption of a fast-food conglomerate. In the course of the game, the player is placed in the role of decision-maker and given an array of coexisting but conflicting choices so that he can see the difficulty involved in decision-making on a corporate level. The game is informative, and provides social commentary, but does that commentary have real life applications? Can it live past the world of the videogame? One hypothetical example might be if I were to play *The McDonald's Videogame*. I might be disgusted with their practices, but may not be motivated enough to tell my friends about it, stop going to the restaurant, or challenge McDonald's within a public arena. I grew up eating McDonald's. I have a lot of good associations with McDonald's and, while playing *The McDonald's Videogame* might be enlightening, I'm too removed from its corruptive practices as a corporation to change my behavior in the long run. However, if my original motivation was to challenge corporate corruption, then the procedural rhetoric of the game might push me to research more, voice my opinion, and stop going to the restaurant. In both of these hypothetical situations, personal associations with the content play a large part in how the procedural rhetoric affects me as a player and in how I receive the social commentary that the game reveals. Even though the commentary in *The McDonald's Videogame* encompasses a broader industry of fast food, the content surrounds McDonald's and is targeted in such a way that the player can't help but make direct associations with the restaurant.

I believe that procedural rhetoric can be utilized within videogames to effectively teach players about complicated or unfamiliar issues. However, procedural rhetoric does not in and of itself have the ability to inform or change opinions. Another level, one of personal connection or association between the player and the content of the game must be present and can only be enhanced by the dual presence of procedural rhetoric. It's their connections to a game's content that provoke players to argue the other side of the issue or make a marked behavioral change. The content of a game is important, because, in the end, the content is what the player relates to—personally, financially or otherwise, especially in a game that is meant to relay a certain opinion. Of course the way a claim is set up is directly correlated to the way it's received, but content is what ultimately guides the level or importance of that reception. Proximity to an issue and personal experiences surrounding that issue are potent ways to formulate or change a belief system. Therefore, I believe that a videogame which could be successful in shifting values would be one which incorporates elements of personal proximity and emotional effect based on content, while also using procedural rhetoric as the vehicle for propulsion through the game.

LIESE ZAHABI

HUMANE INTERACTION: BRINGING INTERFACE BACK TO A HUMAN CENTER

Liese Zahabi

Interface and interaction design is often defined by the creation of environments and devices that disappear into the background and allow a user access to what they need, with transparency and efficiency. However, interface can be so much more than just an object of interaction or a windowed screen to peer through. Interface can and should also be considered in much more human and humane ways.

In their book, *Windows and Mirrors*, Bolter and Gromala have fashioned an interesting argument for putting the emphasis on what technology can do for people, rather than focusing only on what it can do in a technical sense. They describe digital art pieces that offer delightful experiences to users, rather than emotionless productivity or overwhelming confusion. The *Wooden Mirror* piece exemplifies this notion: it consists of a simple interface with basic inputs (the user's digital image), but very rich and sensual outputs (the image rendered in textural wooden tiles). Non-human centered interfaces already have the capabilities for displaying a person's image to them (an odd pixel-generated reflection), and do so with efficiency and accuracy—but the *Wooden Mirror* displays the image in a new way, using familiar, natural and emotionally loaded materials to create a new context and opportunity for interpretation by the user.

Another example that illustrates this call for human-centered interface design can be found in the description of another digital art piece, "*TEXT RAIN* is not simply an expression of the artist's personality. ... Rather, the experience of this piece comes from the interaction of the viewers with the creators' design. *TEXT RAIN* is as much an expression of its viewers as of its creators; it is what the viewers make of it. Without them, the piece is incomplete, for there is nothing on the screen but the falling letters" (Bolter 13). The relationship that exists between the maker of the interface, the user of the interface, and the action and expression of the interface itself are very symbiotic and connected. Moreover, "*TEXT RAIN* is a text that its viewer-users help to create, a text that they write in the process of reading ... [it is] about the process of its own making" (Bolter 13).

This connected set of relationships introduces many interesting and exciting new threads and avenues for exploration. Can a designer communicate an overarching emotion or sensual experience through an interface that can also be considered useful? Would that type of interface be appropriate? Is there an improper way to construct an interface? Who should have the control?

In *The Language of New Media*, Lev Manovich continues this thread (albeit in a more indirect way). His text explores the definitions and descriptions of media, new and old, and showcases some of the differences and similarities between the two. As he discusses the idea of variability and how it relates to new media (and interface), the connection to a call for more human-centered design becomes more perceptible. "A new media object is not something fixed once and for all, but something that can exist in different, potentially infinite versions... Instead of identical copies, a new media object typically gives rise to many different versions. ... And rather than being created completely by a human author, these versions are often in part automatically assembled by a computer" (36). Here, Manovich is referring to websites such as Amazon.com which are able to customize themselves to the individual user in the hopes of tempting them to buy more products—but the implications of this statement can reach much farther.

An interface that is built around the notions of variability and infinite versions leaves room for many different types of users—and for different types of learning styles, tastes, preferences and interpretations. This variance does not need to exist within the same interface at all times, rather, the options for multiple user versions and iterations create open-ended possibilities for designers. Interface needn't be cookie cutter and homogeneous in its consistency—it can be messy and complicated and complex just like it's users and the world around it. Designers can lean on the powerful abilities of the computer to process and manage data, to fashion interfaces and systems that harness this power.

Another interesting point raised by Manovich is the way in which new media (and new technology in general) interacts and is shaped by human culture (and vice versa), “Because new media is created on computers, distributed via computers, and stored and archived on computers, the logic of a computer can be expected to significantly influence the traditional cultural logic of media; that is, we may expect that the computer layer will affect the cultural layer” (Manovich 46). Within this idea, the notion of human-centered interface design is most compelling. The worlds of media and technology and culture do not exist in a vacuum: they shape each other, influence each other and affect each other in ways we may not even be able to fully understand yet. Furthermore, this is, “a new computer culture—a blend of human and computer meanings, of traditional ways in which human culture modeled the world and the computer's own means of representing it” (Manovich 46). Much of interface design is based on old assumptions and considerations, but the atmosphere in which this swirl of technology and design exists is constantly changing and shifting. Culture decides how to use technology and media, but the use of that media shifts the perceptions of culture. This loop necessitates a constant reevaluation by designers of their methods, assumptions and concepts.

The points made by Thackara in his book, *In the Bubble*, are absolutely along these same lines. However, this text also introduces the idea of the social and convivial potentials of interface. Within his discussion of the disconnection people feel in today's new economy, he writes, “[these are] “spots” that are not connected, do not have a story, have no beginning, and no end. ... [they] fragment, atomize and disconnect us from narrative. Singularity replaces connection and flow” (Thackara 125). More than just this passage, Thackara's entire book is a call to action for designers: people are important, designing things, systems and interfaces for them, and for their needs and desires is paramount! He also compels designers to rethink tired notions of design and technology and actively shift these ideas and assumptions to shape them into something more than mere currency exchange.

As designers, we have a choice—interface does not have to be about cold, alien technology, or bloodless efficiency and accuracy. Interface can be warm and inviting, exciting and joyful, even charming—it can be all these things and serve a purpose at the same time. We simply have to decide to bring the user/viewer (as a human being, not just a set of usability measurements or statistics) back to the center, and even to give the interface itself a warm, humane nature of it's own.

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UPLOADING STICKINESS: GENERATING CONTENT AND MEANING

Liese Zahabi

Peter Lunenfeld posits several ideas about media and interface in his forthcoming book, *The Secret War Between Downloading & Uploading*. He traces the path of media and its consumption from the rise of the television, to America's relationship with 'the bomb', to the world's love affair with the computer. The course he charts reveals several interesting ideas regarding content, material, media and our relationship to it.

As he attempts to define downloading and uploading, Lunenfeld creates a parallel between consuming and producing: “watching is ingesting is downloading and making is exercising is uploading” (16). Beyond this loose

definition, he seems to draw a line in the sand between these two behaviors, deeming one far more preferable to the other, and comparing the nation's over-active downloading to diabetes. He has imprinted a set of moral values on both actions—even likened them to natural biological behaviors. “All animals download, but only a few upload anything besides excrement and their own bodies. Beavers build dams, birds make nests, and termites create mounds, but for the most part, the animal kingdom moves through the world downloading, and then munching it bits at a time” (10). The usefulness of this moral judgment is unclear. But illuminating the distinction between these two behaviors creates interesting footholds in which to examine other concepts.

Within the context of interface and interaction, these notions of uploading and downloading take on even more meaning. If downloading is all that is passive and consumptive, then the very essence of uploading (active and productive) is conducive to interaction and interface (which generally requires input and action from a user). If people heed Lunenfeld's call to action, a vast community of users will shift to a lifestyle of increased uploading—and interface will likely be at the heart of both the production of material to upload, and the act of uploading itself. A whole new generation of tools and systems will need to be developed and built to deal with the changing flow of information and material.

Lunenfeld defines and establishes the concept of “stickiness” regarding meaning and content. Material (digital or otherwise) can be generated to not only have meaning, but to also collect other “things” to it, helping/allowing/leading users to create their own juxtapositions and meaning—their own collected meaningfulness—which they may choose to share with others. The hope is for this “sticky” meaningful ball of stuff to grow and change and be changed as it passes from hand to hand—leaving a sticky trail of meaningful residue behind it. Applying this idea to the notion of interface signals new considerations and affordances in both the structures and systems around which they are built. Creating “sticky” and meaningful systems is an exciting prospect, which engenders a whole new set of values: of things that are open-ended, malleable, un-fixed and unfinished.

As our uploading and downloading behaviors shift in the future, our relationship with content and meaning will invariably shift as well. The current rise of participatory culture—not just on the peripheral edges of society, but right in the center stream—has certainly started to change expectations about the user's role within media, content creation, and the social exchange of that content. Now, more than ever before, people expect to actively engage with information, rather than passively accepting it. The role of interface within this shifting landscape has just started to be realized and defined.

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INFO-TRIAGE: A CALL FOR MINDFUL CURATION

Liese Zahabi

In his forthcoming book, *The Secret War Between Downloading & Uploading*, Peter Lunenfeld discusses several factors he believes are leading American society to mindlessly partake of the online experience without participating in a commensurate fashion. These factors include an overload of information and options, a long-standing history of mindless ‘downloading’ (inherited from generations of television viewing), and a system of digital infrastructure which functions to perpetuate this cycle. Equating this state of over-consumption to disease, Lunenfeld describes it as “cultural diabetes”—the type that is caused by years of careless excessive intake. In this way, he makes the claim that we are responsible for our own consumptive health—if this is indeed a disease, we hold the key to our own cure.

Lunenfeld continues his medical analogy by defining the curative concept of *info-triage*. The term triage refers to the practice within the medical profession of sorting and categorizing patients to decide which ones are treatable and need immediate help (and at one time, which ones were beyond treatment). Within the context of information, triage refers to similar (although perhaps less dire) behaviors. Lunenfeld states, “Info-triage is more art than science, a practice that involves the weighing of options and the measuring of time. We tend to think of

time in relation to efficiency, but info-triage is about more than job performance, it is a practice devoted to mindfulness” (29). He is making a call for the careful consideration of meaning and material content—a call for curation.

Our modern world is filled with countless bits of information and messages, all fighting for our attention. Within this cacophony of content, many people are finding the act of focus harder and harder to obtain. As the role of multi-tasking is being applied to more professions and activities, methods for ‘cutting through the clutter’ become integral to even basic function. Lunenfeld states that info-triage, “is not so much about efficiency as the culling of the distraction in the search for meaning” (29). Finding ways to sift through all the text, image and promise of the Internet in order to drill down to exactly what you need, exactly when you need it, has become a necessity.

Several methods of information curation currently exist online. Search engines offer a very basic form: they seek out sites based on key words and phrases and display the results back to the user in a hierarchical fashion. Sites like Google allow users to look through an abbreviated version of the Internet, making it possible to find what you’re looking for quickly and easily. In fact, since their inception over ten years ago, today’s users of these engines would likely define them as indispensable—it is difficult to remember what the Internet was like before their implementation.

Google has created another useful interface for curation with iGoogle, an extremely customizable ‘personalized’ homepage. Users can place widgets on their page containing information as diverse as the weather report, today’s news headlines, games, and interesting images from other sites like Flickr. iGoogle offers a holding place for information and content a user would normally have to visit multiple separate websites to view. It acts as a catchall—a single drawer the user can use to keep the content they deem most important to them close at hand. And, when this content exists within one portal, there are fewer chances for the user to become distracted by non-relevant material. iGoogle is both a display of choice and a buffer from distraction.

Ultimately, what this notion of info-triage offers is a sense of abbreviation—a weeding out of the chaff—allowing a user to focus on what they actually want or need at any given time. Lunenfeld explains, “Info-triage accepts the psychological insight that those confronted with a vast array of options are often less satisfied than those who select between a smaller set of alternatives. Option paralysis shades into paralysis by analysis, and both are exacerbated by the never-ending dataflow” (29).

Indeed, this option paralysis and information overload is a very real problem, leading to actual anxiety and stress in some people. In his online article, *Grappling with Information Overload*, Dr. John M. Grohol states, “In more extreme cases, people can become depressed by the stress and anxiety information overload brings. While it existed before the Internet become commonplace in the 1990s, it was far more rare. Today, more and more people are complaining about just feeling plain overwhelmed by the Internet.” Interfaces that offer careful (mindful) curation of content can help alleviate some of this anxiety, offering choice and specificity simultaneously.

While there are currently many examples of curation on the Internet, much work needs to be done. Interfaces and portals need to be developed to help different kinds of people (with different kinds of needs) cull through the endless seeming options, and find the focus and structure they require. This work will entail both rigorous research and creativity to address the complexity of the problem—to create interfaces that engage the user, help them find what they need, and enable them to find meaning within both the search and the result. This type of work doesn’t have to be dry and archival or purely data-base driven—curatorial interfaces could be created with the intentions of being delightful, of being resourceful, of being socially centered, or of offering complete customization and personalization.

Ultimately, curatorial interfaces and info-triage help users find focus and meaning. As Lunenfeld explains, “The Web offers a marvelous explosion of access, but the law of unintended consequences could usher in a world in which anything can be obtained, but nothing is special” (79). Creating systems and structures in which users can distinguish the meaningful from the meaningless (within the context of specific needs) can help break the cycle of analysis paralysis and mindless collection, and afford the creation of new knowledge and meaning. When users are discerning and mindful, the bits and pieces of information they dislodge from the gushing stream of the

Internet remain special, interesting and pertinent. Curation interfaces and software are just the mining techniques we need.

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INSCRIPTION, MATERIALITY AND CONTROL: **RAISING QUESTIONS**

Liese Zahabi

In her book, *Writing Machines*, Kate Hayles discusses the possibilities of an elegant marriage between the world of words and narrative with that of pixels, code and technology. Her journey from bookworm to chemist to professor of literature gives her a unique perspective in which to frame her examination of this complex topic—part poetic and intuitive, and part technical and empirical. These two perspectives collide to create a substantive look at works in which these seemingly opposing camps have come together to create something interesting and new. She explores some of these relationships through the concepts of *inscription*, *materiality*, and *control*.

Hayles' discussion of *inscription* and inscription technology is intriguing and fraught with potential, "to count as an inscription technology, a device must initiate changes that can be read as marks" (24). Looking at the use of words, meaning and narrative within this context opens up the accepted delivery systems—from books and other distinctly tangible substrates—to include possibilities much more arrayed (including technologies yet to be conceived). Yet, this opening up of possibilities also raises many questions. How will the ways we understand the nature of words and stories change as inscription technologies change? When do we cease regarding words as objects we can see or hear, and begin understanding them as invisible ideas and concepts which can exist in unconventional planes? How do our perceptions (fostered through a thousand years of book materiality) hinder us from accepting new styles of inscription as valid or valuable? How can those perceptions be changed?

Materiality and embodiment of these inscriptions frames a second concept in the text. "Books are more than encoded voices; they are also physical artifacts whose material properties offer potent resources for creating meaning. Indeed, it is impossible not to create meaning through a work's materiality" (107). Here, Hayles asserts that the two parts of an embodied text are so intertwined that they cannot truly be separated from each other. The words and ideas are juxtaposed and intermingled with the physicality of wherever they exist, forming one entity. When the vagueness and intangibility of the digital realm is considered within these same criteria, the notion becomes even more complicated and elusive. Does this physicality and materiality manifest itself in ways in which typical users are aware? What happens to the fitness of design choices when materiality is considered or even privileged? How does the interplay between these two facets create tension or clarity?

Issues of *control* also have a role within Hayles' text, especially the explanation of the database installation work of two of her students. This work consists of a screen on which the user can make choices, and a printer holding sheets of paper containing the words that make up the database. These two objects and systems interact with each other as the user interacts with them. The students "had taken off on the idea that the materiality of the technology should be brought into visibility, an enterprise they undertook by reversing and subverting its usual operations" (101). But within this examination of the visible embodiment of the database and the processes of culling and curating, exists the question of who has the control. When systems are devised that enable machines to create content, who controls that content? How does the content fundamentally change as the control shifts from user to machine to operator to designer? What is lost or gained when this control is shared or given up? How does a user's relationship with the machine, content or designer change as the notions of control change?

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TANGIBLE MATERIALITY IN A DIGITAL WORLD...

Liese Zahabi

In her book, *Writing Machines*, Kate Hayles makes the argument that materiality matters within the world of literature and literary criticism—something she feels has been too long ignored and disregarded. Within the humanities and especially in literary studies, there has traditionally been a sharp line between representation and the technologies producing them. Whereas art history has long been attentive to the material production of the art object, literary studies has generally been content to treat fictional and narrative worlds as if they were entirely products of the imagination (19).

These two realms of creativity and storytelling divided somewhere along the timeline of history shaping very different conceptions of how to craft and perceive work. Within the domain of the written word of literature, the inscribed surface of the page is usually neutral and transparent—the crystal goblet which clearly displays its contents. The realm of the artist and designer, however, working in the medium of the visual, is also concerned with displaying and calling attention to the goblet itself, and the ways it relates to (or even circumvents) the contents contained within.

Even before Louis Sullivan uttered the words “form ever follows function”, designers have been aware of the importance of the materials they select for use in their work. Designers consider, reconsider, recalibrate and defend their choices regarding substrate, color, texture, format, final form and even the technology used to create their work. The subtleties and nuances of these aspects are carefully weighed and considered: How will the audience respond to the material cues? Will these cues be consistent with the message of the piece? How can these cues add to the overall experience? Elements of tactility and tangibility are as important a tool to the designer as typography or image—an integral building block used to communicate and convey. Even when a designer makes generic or default choices regarding materiality, these choices still convey a stance. Therefore, within the context design, the call for a consideration of the material and medium is old hat ... been there, done that.

The true promise of Kate’s text does not lie with a notion of material-wise designers coming to the rescue of behind-the-times literati—or even just a hope of the literary community becoming aware of this material world. Instead, Kate opens up a new conversation for *designers* about a more earnest and thorough consideration of new technology and digital space as tangible and material things. She creates a new starting point for the exploration and examination of the physical qualities and presence of something that is normally considered invisible and non-material.

Kate explains, “The loyal opposition has been insisting for some time now that literary studies must expand to include images. The respected critic, W.J.T. Mitchell, has forcefully made this point, urging that we think not only about words but what he calls the textimage, words and images together. In the digital age, however, image is the tip of the iceberg ... I was surprised to find [Mitchell] defending the position that although image was of course important, the expansion of literary attention should stop there. Once image has been introduced ... literary critics have everything they need to deal adequately with literary texts. This print-centric view fails to account for all the other signifying components of electronic texts, including sound, animation, motion, video, kinesthetic involvement, and software functionality, among others (20).”

These signifying components that accompany text are essential for literary critics, writers and designers to employ—not only for the translation of texts in a digital format, but for the new creation of texts and digital spaces as well. Moreover, considering the materiality of digital media offers further opportunities: digital spaces can begin to connote a physicality and materiality of their own. Examining the way humans cognitively perceive these spaces, and how differences in culture and world experience change these perceptions, may lead to breakthroughs in the creation of and engagement with digital spaces and environments. Analyzing the

differences between the ways users compare digital and analog objects and spaces would begin to define core behaviors and expectations which designers could exploit and expand upon to generate more compelling work.

When the Internet took off, digital spaces were designed as extensions to print, a modular add-on, fashioned in an unruly medium that designers struggled to control. Bill Moggridge discusses this phenomenon in his book, *Designing Interactions*:

For the first iteration [of the Internet, designers] often translated a company's page-based print collateral material directly to the Web, just to establish a presence on the Internet. The limited resolution degraded the graphics and did little to exploit the behavioral advantages of the Web. Soon companies like Razorfish emerged, specializing in designing solutions for the new economy that were more than paper solutions applied to screens. Web sites started to be designed to deliver experiences that were more sophisticated, taking advantage of animation and the behavioral possibilities (730).

The rise of Web 2.0 (with sites like Facebook and Wikipedia, and the proliferation of applications like real-time text chats and flexible file sharing programs) has heralded even more significant change—applications and web spaces are now created as stand alone elements (often with complex visual languages all their own) that employ the special abilities and aspects of digital space.

The work in interaction design has been well documented in the last ten years, and much of it begins to hint at the consideration of digital space as material and tangible. The examination of movement, behavior, motion, usability, sound and overall experience addresses and develops the affordances of digital space. Further research and work in these areas could address very specific cognitive aspects and material qualities regarding digital space. Kate Hayles' work in *Writing Machines* could prove a very fertile ground for the proliferation of further research in many different fields within design. She reminds us that in everything we touch and create, materiality cannot be escaped—and it can also enrich and entice.

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PROCEDURAL RHETORIC:

VIDEO GAMES IN THE SERVICE OF EDUCATION

Liese Zahabi

Like many people my age, I grew up in a world inhabited by video games. My aunt owned an *Atari*, the athletic club my parents frequented boasted both a *Donkey Kong* and *Donkey Kong Junior* arcade game, and my sister and I saved up our money for an entire summer to buy a *Nintendo* system. From a very early age, I enjoyed the compelling and visceral engagement of video games—and I spent countless hours pursuing the final level and attempting to achieve a higher score. As an adult, I still feel the pull of video games—they have influenced my sense of aesthetic, my understanding of interaction and behavior, and my conception of play.

My generation has not abandoned its interest in and passion for gaming as it has passed into adulthood. This has led to an increasingly rigorous conversation about video games and their lasting implications and overall role within not only pop-culture, but also academic culture. In his book, *Persuasive Games*, Ian Bogost (a gamer, game designer, and academic) calls for a very specific and robust examination of games as they relate to rhetoric.

Drawing on the 2,500-year history of rhetoric, the study of persuasive expression, I offer a general approach to how rhetoric functions uniquely in software in general and videogames in particular ... This book suggests that video games open a new domain for persuasion, thanks to their core representational mode, procedurality (viii-ix).

Bogost proposes that video games possess a unique and powerful ability to persuade and engage because of their procedural and expressive nature. This compelling combination offers many affordances within games and gaming to convey a deeper meaning and understanding about the world and how it works.

One area that seems ripe with possibilities for the implementation of games and procedural rhetoric is education and its assessment. Much of modern day education is mired in standardization and numerical assessment—the development of critical thinking is often left behind. Bogost notes, “I critique the state of current educational practice, in particular the tendency to teach either specific knowledge divorced from context or abstract principles divorced from specific knowledge” (x). Because video games (and the subset of serious games* in particular) allow for the user to engage with an abstracted and artificial world, they can begin to expose the way systems and structures work, and the ways in which those systems are flawed. Often, serious games are developed by corporations or institutions to purvey a very pointed agenda, and the game play reflects that bias. However, Bogost argues, “Procedural rhetorics can also challenge the situations that contain them, exposing the logic of their operations and opening the possibility for new configurations” (326).

Games should be constructed to engage the player in a meaningful exploration of a concept, instead of simply delivering content to a passive audience. Because games are inherently interactive, and afford multiple actions and concepts synchronously, a player can truly begin to untangle and examine complex ideas, issues and systems. Inserted into the framework of the classroom, with the guidance of a teacher, this same player could also be challenged to form a critical opinion about both the game and it’s content. In this context, games and gaming could be turned from a perceived frivolous waste of time, to an integral and integrated part of the educational system.

* “Serious games are videogames created to support the existing and established interests of political, corporate, and social institutions” (57).

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CONSTRAINTS GONE GOOD: WHEN EXPERIMENTS IN RESTRICTION FOSTER CREATIVITY

Liese Zahabi

Constraints are usually considered a negative thing. Defined as limitations or restrictions, they are often imposed upon designers by clients and budgets—resulting in horror and frustration, or at the very least, the sense of a loss of creative freedom. Constraints mean two colors instead of four, saddle-stitch instead of perfect bound, economy instead of first class. For many designers, they are a crushing reality of client-based work.

Yet, they need not be! A long history of cultivated creativity through careful wielding of constraints exists in many fields, including graphic design. The spark of innovative thinking often springs out of situations full of constraint and restriction. The paring down of option, possibility and choice can often feel freer than the whole wide world being at your disposal.

A great example of this principle is found in the world of independent low-budget film. Movies created outside the traditional studio system are usually made with borrowed money (from credit cards or loans from friends or family)—and have to be produced in a very inexpensive way. The actors are amateurs, the lighting is natural or from found sources, and generally the directors have to craft their vision in only one or two takes. The editing is usually done by the director or a non-professional, and overall the production values are very low. Despite all of these restrictions and constraints, many movies made in this way have been very successful.

The Blair Witch Project was made in 1999 for \$22,000, using unknown actors, a script that was merely a 35-page outline for improvised dialogue and action, natural lighting, and hand-held cameras used by the actors themselves. Despite these (some would say severe) constraints, the movie became an overnight sensation, and

grossed over \$248 million worldwide (earning a spot in the *Guinness Book of World Records* as the most profitable film made to date).¹ It has inspired many spoofs, much commentary, and a whole new generation of low-budget film makers.

The Blair Witch Project worked because it had a compelling central idea, and the execution created through (and because of) the restrictions actually reinforced and complimented the look and feel. Completely improvised dialogue and handheld camera work made the story of three novice filmmakers stumbling through the woods more believable and unsettling. Because there was no budget for special effects, or even makeup, the film never shows the actual witch or any violence being perpetrated upon the characters. We only hear it or hear about it. But this choice (likely made, at least in part, because of constraints) heightens the tension felt by the audience, keeping them on edge throughout the film. All of the choices made because of restrictions and constraints shaped the film into something interesting, memorable and authentic feeling.

Creatively designing through constraints is also a well-known premise within the world of video game design. Games created for the *Atari VCS* are a great example of this. The console, released to households across the US in 1977, shipped with only 128 bytes of RAM, and worked directly with the home television set to generate rudimentary graphics and sound. Within these parameters, the games had to be rendered on the fly using the technology of the picture tubes within the TV set itself—complicated pre-rendered graphics or saved games were impossible. These constraints greatly restricted the design of both game graphics and play. However, designers were able to be very inventive and innovative within these constraints, and created a large body of games that have influenced much of what has come after them. *Adventure* is a good example of this.

“Adventure ... established the action-adventure game. [It] represents a virtual space that is larger than the screen, showing how some of the affordances of the VCS platform can be used for purposes that were different than those originally intended. *Adventure* was also a radically different adaptation of an all-text computer game, one that again helps to reveal the influence of platforms in creative production”.²

Based on an all-text game in which everything is abstracted and actions and play are very open ended, *Adventure* took the restrictive nature of the *Atari VCS* parameters and created a game that is graphically abstracted and retains the feel of searching and wandering. This was the first game to implement a virtual space that goes beyond what is shown on the screen at any given time, giving a sense of expansiveness and territory. Because of the abstraction, and the expansive nature, the game still takes on characteristics of the text-based version. Players are free to project their own ideas about the spaces they are wandering through onto the basic colors and shapes—they aren’t limited to a tightly rendered vision conceived by the game designer.

This powerful idea of designing with constraints and restrictions doesn’t have to happen consequentially or be imposed by others. Designers can harness this power as part of their process: to fashion a method for exploring possibilities, break through clichés or just craft a particular and specific frame to view an idea through. As beginning designers, many of us experienced this notion in school—guided by an instructor—exploring what happens when a few elements are moved around a page in many different configurations. But the variation of constraints need not be limited to just this type of study. Designers can use these “limiting” properties in an iterative and generative way—both to explore new possibilities, and to create variations on ideas in which they privilege different kinds of information and focus. Taking similar elements and shifting the material and/or conceptual constraints (even as simply as one variable shifting at a time) can elicit interesting new ideas and formats—and may spark directions the designer hadn’t even considered for a project.

Constraints and restrictions can also be used to frame context, and to shift this context in different ways. Designing for a known audience can sometimes grow stale or stilted—but shifting the modes of delivery, message hierarchy, or even formats within a known framework can create juxtapositions and connections not previously considered. Using constraints in this way, designers can pick and choose what they wish to focus on and what they wish to explore, one variable at a time—whether they are conducting academic research, designing a logo within their practice, or simply brainstorming for a new project.

Even when the possibilities for a project are unlimited, the budget is lavish, and creative juices are allowed to flow unabated—constraints can be a wonderful thing. They can help create focus and insight, variety and interesting new connections—they can help designers push through the initial clichéd ideas and delve into

territory that feels strange, fresh and new. Instead of squelching creativity, constraints can often offer a greater sense of freedom than even completely open-ended briefs. They should not be loathed and feared, but instead embraced and wielded as yet another tool in the savvy designer's arsenal.

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