

# Virtual Memory: The Blog as Technological Prosthetic

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The following paper will explore the nature of memory in the digital age, proposing the blog as a model for a memory system. It will examine the blog's position as both a medium and a social practice. Both are essential – without the medium, without the website itself, the blog's community has no sense of place. Without conversational social relations, there is no basis for community. There is, in fact, an orality to blogging, an orality that recalls the manner in which non-literate cultures rely on speech for their existence. It is a form of speech, though, that is not ephemeral, but permanent and instantly retrievable, and, in this manner, the blog provides a space to create a collective memory, without which the blogger does not exist. This presents a new form of subjectivity, one rooted in bits and bytes, defined by a database, made accessible by a search engine. The blog becomes a technological prosthetic for its users: cyborg memory.

*You know what you can recall.*

- Walter Ong, *Orality and Literacy*

What is the nature of memory in the digital age? The following will attempt to answer this question from a perspective that has perhaps been overlooked in the academic scholarship related to memory – that of the blogger. The day-to-day life of a blogger, a subjectivity produced through the medium of the blog and the social practices that emerge from its use, requires an intimate relationship with the blog's database, and in this respect, offers a useful model of a memory system. Both the medium and social practices are essential components – without the medium, without the website itself, the blog's community has no sense of place. Without conversational social relations, there is no basis for community. There is, in fact, an orality to blogging, an orality that recalls the manner in which non-literate cultures rely on speech for their existence. It is a form of speech, though, that is not ephemeral, but permanent and instantly retrievable, and, in this manner, the blog provides a space to create for its users a collective memory. The blog's shared memory system defines the blogger's very being, as the stored database of conversations and comments is needed to accumulate knowledge, build reputation and trust, and maintain identity. Without this collective memory, then, the blogger does not exist. The blog becomes a technological prosthetic for its users – by storing the comments and conversations that take place between bloggers, it enables a form of perfect memory. More precisely, the blogger's

memory can be referred to as “cyborg memory,” using Donna Haraway's (1991) term for the manner in which information technologies have dissolved the boundaries between human and machine. This, then, is the blogger's life, a life as real as it is virtual, rooted in bits and atoms, where memories persist within the structure of a database, made accessible by a search engine.

## I. What is a Blog?

*Writing a diary is, in principle, quite simple. Click the 'New Diary Entry' link in the Tools sidebar, pick a title, write some text, choose a tag or two, and hit 'Publish'. Well, OK, maybe there's a bit more to it than that.*

- Daily Kos FAQ

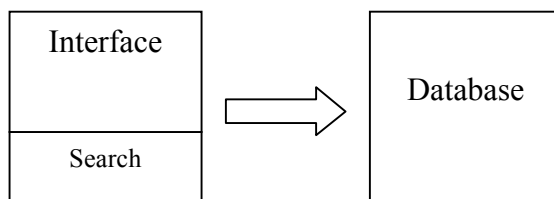
The starting point for an examination of the blog as a memory system is characterizing the very nature of the blog itself. For, unlike many other media, the term “blog” refers to both a medium and a social practice. danah boyd, a social media researcher and Fellow at Harvard Law School's Berkman Center for Internet and Society, has noted this problematic aspect of defining the blogosphere, describing blogs as “both the product of blogging and the medium through which the blogger produces their expressions” (boyd, 2006, p. 11). She contrasts this with radio, which also allows people to express themselves, “but the act of speaking to be broadcast is not radio-ing, nor is the product of speaking radio” (boyd, 2006, p. 11). In other words, there is a problem of semantics when

theorizing about blogs, precisely because the term refers to a technology as well as the expressive and social act of blogging. To further complicate things, there is no singular blog, but a variety of types, from a teenager writing about the daily antics of her cat, to large collectives of thousands of people focused on subjects such as technology or particular television shows. Finally, the blogosphere itself is always a moving target – the number of blogs constantly grows. Recent statistics show there are approximately 133 million weblogs in cyberspace, with 900,000 new blog posts being created each day (State of the Blogosphere 2008, n.d.).

For the purposes of the work at hand, therefore, the discussion of blogs will be delimited by a focus on the political blogosphere, and, in particular, the web site Daily Kos (dailykos.com). This site is currently one of the most popular “community-based” blogs; that is, it is inclusive in terms of participation, users have the ability to create content, and norms are created and enforced through social means, all of which will be further described. While Daily Kos is not necessarily representative of the entire blogosphere, or even the narrower political blogosphere, it nonetheless provides a rich example of the potential of online communities. Maintaining a narrow focus on one particular blogging community will allow an in-depth exploration of the medium of the blog, as well as the social practices that form within the blog’s space.

#### *A Blogger’s Medium*

The blog, as a medium, is rooted in the architecture of the World Wide Web, the Internet-based information technology systems paradigm that became popular in the 1990s. A useful, although vastly simplified, view of a web-based system can be depicted as:



While a systems designer would cringe at this diagram, its usefulness lies in its perspective – this is the blog as a user (blogger) sees it. That is, the blog is a web site that has functionality

accessible through its presentation interface, a search capability to provide recall, and a database in which comments and blog posts are stored. The components of this system can be illustrated with a discussion of the operational aspects of the political blog, Daily Kos.

Any new member of a site such as Daily Kos must go through a certain orientation, to understand how the blog works, and discover its written and unwritten rules. The process of blogging on Daily Kos begins with the creation of a User ID. IDs are representations of one’s identity, and while most people choose a pseudonym, some blog with their real name (certainly politicians and others with public status typically use their real name).

Functionally, there are three main areas on Daily Kos – the Front Page, the Diaries, and the Comments. The front page is what is first seen when clicking on a link for the site. Visually, it is divided into three columns: the left side, where the main writers for the blog post their entries; a middle column that displays advertising; and on the right, both the Recommended Diaries and the User Diaries sections. The latter are what users post to their personal blog sections – the community then has the opportunity to recommend each diary, and those with the highest number of favorable votes are automatically posted to the Recommended section. In effect, the resulting list highlights and defines the zeitgeist of the community, as the most popular and significant diaries rise to the top. Within each diary is a section for Comments – once a user writes and posts a blog entry, it appears in the Diaries section, waiting for others to join the conversation. The comments sections are where the bloggers argue, debate, converse; it is here where the community builds its bonds.

Users on Daily Kos have the ability to apply ratings to other comments. Ratings are a measure of performance, and can be used to both weed-out troublemakers (known in the blog world as trolls), as well as give praise for particularly persuasive, passionate or insightful comments. Once people gain enough positive ratings points, they become trusted users and are granted special privileges, such as the ability to assign “troll ratings” to users breaking the community’s norms of behavior. The ratings system and the role of the trusted users help maintain some semblance of order on the site, a combination of technology and social practice used to

enforce community standards of behavior and dialogue.

The above discussion highlights, operationally, a minimum of what each user needs to know, in terms of navigating the blog, commenting in diaries, and using certain technical functions (the recommended button, rating comments) to keep the site active and progressing. This is how Daily Kos works as a medium. Blogging, though, is not simply about the medium – it is also a social space, a community that shares bonds well beyond the blog's intended mission of advancing Democratic Party politics.

#### *A Blogger's Practice*

Community blogs are an example of what media theorist Henry Jenkins (2002) has described as fan cultures, tracing the history of such communities from pre-digital real-world groups to today's online bloggers. Before the Internet, for example, science-fiction fans developed informal networks, and created newsletters and journals, filled with amateur writing: "...every reader was understood to be a potential writer and many fans aspired to break into professional publication; fan ideas influenced commercially distributed works at a time when science fiction was still understood predominately as a micro-genre aimed at a small but passionate niche market" (Jenkins, 2002, p. 159). With the introduction of computers and the do-it-yourself culture of the Internet, science fiction fans were able to transition their communities to the virtual world.

Jenkins's ideas can be applied to the social community found on the web site Daily Kos, a culture where the fandom is based on politics and policy, and the fans are democratically engaged citizens. (Indeed, certain political leaders, such as Howard Dean and Al Gore, have reached their own kind of star power/celebrity within both the culture of the blogosphere as well as the culture at large.) Just as science fiction fans moved between the roles of reader and author, individuals on a community-based blog not only read blogs, but also create diaries, aspiring to hit the Recommended list, or be "front-paged," or even picked up by the mainstream media. Jenkins, basing his work on Pierre Levy's concept of collective intelligence, describes fan communities pooling their knowledge together, because working collectively "frees individual members from the limitations of their memory and enables the

group to act upon a broader range of expertise" (Jenkins, 2002, p. 159). Similarly, political bloggers use their collective resources to perform acts of citizen journalism, where online diaries act as meeting points and planning resources. This technique has been used on several occasions, including the Daily Kos community's effort to expose a male-escort-turned-journalist in the White House press corps.<sup>1</sup>

The bloggers at Daily Kos, then, emerge at the intersection between mediated communication, common interests and knowledge creation – a kind of digital town hall, which Howard Rheingold (2000) has called a "virtual community":

*In traditional communities, people have a strongly shared mental model of the sense of place--the room or village or city where their interactions occur. In virtual communities, the sense of place requires an individual act of imagination. The different mental models people have of the electronic agora complicates the question of why people seem to want to build societies mediated by computer screens. A question like that leads inexorably to the old fundamental questions of what forces hold any society together. (p. 53)*

The same question of what holds a community together applies to the bloggers at Daily Kos. For the members of this site, what binds them first and foremost is likely their political affiliation, the shared sense of mission to advance the Democratic Party. But this virtual community's bonds are also built outside of any political discussions, on an interpersonal level, though a series of Diaries highlighted in the "Guide To Daily Kos" from Daily Kos blogger RenaRF (2006). In the guide, several regularly occurring blog posts are highlighted: Cheers and Jeers, providing a humorous start to each weekday morning; WYFP?, a place for bloggers to rant about their problems; Gotta Happy Story, where inspiring stories are shared; Ask A Kossack, for new users with questions about the site; and Garden Blogging, where the community uploads photos of their gardens. These regular postings

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<sup>1</sup> For a full account, see "J.D. Guckert/Jeff Gannon: These Are Your Lives!", <http://susang.dailykos.com/story/2005/3/28/82111/6781>

serve as meeting places, where users come together and share stories, complain and rant, or just make each other laugh. They are immensely popular within the community – WYFP? diaries often receive anywhere from 500 – 800 comments, well above the average for an individual diary at Daily Kos. It is within these ritualistic virtual meetings the community finds and builds its common bonds. In these group discussions, the oral cultures of non-literate society find a parallel in the participatory culture of the community blog.

## II. The Orality of Blogging

*The electronic transformation of verbal expression has both deepened the commitment of the word to space initiated by writing and intensified by print and has brought consciousness to a new age of secondary orality.*

- Walter Ong, *Orality and Literacy*

The work of medium theorists, such as Walter Ong and Marshall McLuhan, has helped awaken us, or, rather, reacquaint us, with our oral past. It is a past that is elusive to those steeped in literacy – Ong (2002) described the difficulty trying to “imagine a culture where no one has ever ‘looked up’ anything” (p. 31). For oral cultures, phrases such as “look up” or “take a note” or “read through,” phrases which are commonplace and taken for granted today, are empty, as they are visual metaphors, rooted in literacy and writing. Yet the history of oral cultures is rich and extensive, as only a fraction of the languages spoken have a literature, and even now, “hundreds of languages in active use are never written at all: no one has worked out an effective way to write them” (Ong, 2002, p. 7). In these societies, speech and sound are primary, and spoken language becomes a mode of action, bounded with magical qualities. Today, even with the literacy rate of the United States at 99%, according to the CIA World Factbook (2009), there is still a lingering oral component within language:

*But, in all the wonderful worlds that writing opens, the spoken word still resides and lives. Written texts all have to be related somehow, directly or indirectly, to the world of sound, the natural habitat of language, to yield their meanings. ‘Reading’ a text means converting it to sound, aloud or in the imagination, syllable-by-syllable in slow reading or sketchily in the rapid reading common to*

*high-technology cultures. Writing can never dispense with orality. (Ong, 2002, p. 8)*

Within a phonetic alphabet culture, “...there is constant pressure from the subliminal fact that written code carries for the reader the experience of the ‘content’ which is speech” (McLuhan, 2002, p. 72). This legacy of our oral past is retained, for example, in culturally significant events, as an officiant who performs a wedding ceremony, a juror who proclaims a defendant’s innocence or guilt, or a President who declares war on another country. Words today are more than simply textual representations of thought; they have preserved the sense of magic and power that was integral to the age of primary orality. This, then, is the starting point for an examination of the orality of blogging. For the blog is not simply a print medium, not simply textual, but a collection of conversations in cyberspace. These conversations take place in the comments section of blog posts, such as the previously mentioned community-building diaries titled “Cheers and Jeers” and “WYFP?,” and help foster social bonds across the blogging community. In this manner, the words found in a blog’s comments section represent social acts and practices, and blur the boundaries between the written and oral media spaces within which blogs are situated. In turn, these social acts and practices result in the strong sense of community that forms among the users of the blog. Just as the spoken word “manifests human beings to one another as conscious interiors...” and “...forms human being into close-knit groups” (Ong, 2002, p. 73), so do the comments “spoken” on a blog. The orality of blogging, the ability for words to invite participation and create community, is illustrated here with a post by Daily Kos blogger *buhdy-dharma* (2006):

*It turned out that even though I was Wicked Smart, there were others here not only just as smart and aware as I, but some even smarter and more aware than I! I had one convo that went roughly like this. Paraphrased of course...*

*Me: Well, I disagree!!! I have studied extensively, as an avocation, the way the human brain works.*

*Other Guy: I am a Neuro-Surgeon*

*Me: oh.*

*But I also found PLENTY of folks who were ready and willing to help me...to overlook my ignorance and newness and point me in the right direction*

*to become a productive member of the community. I learned to be a little humble and to listen to those who had been here longer and knew the ropes. Eventually the community accepted me wholeheartedly and gradually I reclaimed my imperious arrogance...but now molded and modeled to community standards.*

The blog, in terms of medium theory, is therefore something more than a textual device, much closer to the spoken word – it is a place of dialogue and speech, and of community. As will soon be illustrated, these acts of speech which are written into the blog's database serve as the basis for the blogger's memory. But first, the blogger's state of being must be examined, for it is the virtuality of a blogger's life that most distinguishes this form of subjectivity.

### III. Life, as a Blogger

*Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts...A graphic representation of data abstracted from banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding.*

- William Gibson, *Neuromancer*

William Gibson coined the term “cyberspace” in 1982, and since then scholars have been examining the nature of this “consensual hallucination” we increasingly share. The following section will discuss three important aspects of cyberspace, and digital technologies in general, that open up the possibilities and potentials of subjectivity experienced through the life of a blogger.

#### *Virtuality*

A discussion of the virtual nature of the blogger begins, paradoxically, with the physical world, and Michel de Certeau's (1984) notion of the difference between spaces and places:

*A space exists when one takes into consideration vectors of direction, velocities, and time variables. Thus space is composed of intersections of mobile elements. It is in a sense actuated by the ensemble of movements deployed within it...In short, a space is a practiced place. Thus the street geometrically defined by urban planning is transformed*

*into a space by walkers. In the same way, an act of reading is the space produced by the practice of a particular place: a written text... (p. 117)*

While the physical world is configured through the strategies of institutions of power, individuals come to understand this world through their subjective practices, just as a neighborhood is formed from the streets designed by the bureaucracy of city hall. Along similar lines, in the world of cyberspace, a blog is a server running software; like the street, it is an addressable place. But a blog's community is something much more– it becomes a “space.” Like the ether of the spoken word– de Certeau refers to storytelling, and the “oral narration that interminably labors to compose spaces” (de Certeau, 1984, p. 123)– one cannot identify the specific point at which the community exists. Rather, it exists through the social relations and social practices of the site's participants. de Certeau's analogy fits quite well with the orality that exists within the comments section of a blog. The blogger's virtual existence can further be illustrated through the work of Pierre Levy, and his text, *Becoming Virtual: Reality in the Digital Age*. According to Levy, the virtual “has little relationship to that which is false, illusory, or imaginary. The virtual is by no means the opposite of the real” (Levy, 1998, p. 16). Instead, the virtual is simply a mode of being, although one that can be actualized through the communication technologies of cyberspace into a collective intelligence. Levy drew a distinction between the possible and the virtual, noting “the possible is exactly like the real” other than it hasn't been realized (Levy, 1998, p. 24). The virtual, on the other hand, requires actualization, which implies creation, transformation: “The tree is virtually present in the seed” (Levy, 1998, p. 23). Gilles Deleuze, upon whom Levy based much of his work, has stated “the virtual is not opposed to the real; it possesses a full reality by itself” (Deleuze, 1994, p. 211). To clarify these rather philosophical ideas, Levy introduces the example of the virtualized corporation, comprised of telecommuters and extensive networked connectivity (a trend which started in the late 1990s and continues today). While the conventional company is physically located in bricks and mortar, the virtual company's “center of gravity is no longer a group of buildings, workstations, and schedules, but a process of coordination, which redistributes the

spatiotemporal coordinates of the labor community" (Levy, 1998, p. 27). The virtual in this example moves from the physicality of work, from the "realness" of buildings and parking lots and cables and wiring, to more ephemeral notions of connectivity and communication and participation. A similar paradigm, then, can be applied to the blogger as he or she makes social connections and forms a community through the comments and conversations that comprise the everyday, participatory practices within a site such as Daily Kos. While this form of sociality is immaterial and virtual, it is not at all opposed to the real – as the political impact of blogs in the real world have made clear, there is a potential embedded within the blogosphere, a new kind of hyper-politics made possible *because* of the blogger's virtuality.

Life as a blogger, then, requires living virtually. It is a life not of physicality but of virtuality – of space, not place. This existence is unique, and is characterized by what Levy calls a "moebius effect," the "transition from interior to exterior and from exterior to interior" (Levy, 1998, p. 33). This is most overtly seen in the impact of the Internet on the concept of public and private life.

#### *Networked Publics*

The rise of the Internet as a communication medium has created a new sense of the term "public." If a blog is the new diary, as it is often (perhaps mistakenly) described, then the old worry about whether a friend or parent would find and read one's innermost thoughts has turned upside down – the more people who read one's innermost thoughts today, the better. In danah boyd's "Why Youth (Heart) Social Network Sites," she explored the public nature of the relationship between adolescents and their identity, and while her work focuses specifically on young people, it is also relevant to the blogosphere (which, as noted in Techno-rati's State of the Blogosphere 2008 report is comprised primarily of older participants). boyd (2007) identified four properties of "networked publics" that make social media distinct:

1. *Persistence*: Unlike the ephemeral quality of speech in unmediated publics, networked communications are recorded for posterity. This enables asynchronous communication but it also extends the period of existence of any speech act.

2. *Searchability*: Because expressions are recorded and identity is established through text, search and discovery tools help people find like minds. While people cannot currently acquire the geographical coordinates of any person in unmediated spaces, finding one's digital body online is just a matter of keystrokes.
3. *Replicability*: Hearsay can be deflected as misinterpretation, but networked public expressions can be copied from one place to another verbatim such that there is no way to distinguish the "original" from the "copy."
4. *Invisible audiences*: While we can visually detect most people who can overhear our speech in unmediated spaces, it is virtually impossible to ascertain all those who might run across our expressions in networked publics. This is further complicated by the other three properties, since our expression may be heard at a different time and place from when and where we originally spoke. (pg. 9)

Bloggers exist within this world of networked publics. Every utterance, every blog post, is publicly available, and because bloggers tend to remain "close to the human lifeworld," a characteristic of oral cultures described by Ong (2002), they open up their personal lives, sharing in this new form of public what might have been previously considered private. Discussions of suicide, drug addiction, and other hardships in the lives of many Daily Kos community members are quite common on the group-forming diaries previously mentioned, and illustrate the extent to which the moebius effect of virtuality has on a blogger's life. In fact, if a blogger's innermost thoughts and feelings are written out on a blog, it raises the question of just how much the blog is part of a blogger's life? Can one separate the subjectivity of the blogger from the blog itself?

#### *Digital Embodiments*

In the digital age, humans have become distinctly attached to technology. Consider the popularity of Apple's inventive computer designs, including the ubiquitous white iPod headphones that seemingly grow out of nearly everyone's ears these days – the "cult of Mac" may not be too strong a phrase (Kahney, 2004). But it is more than affinity or marketability, as a *dependence* on technology has developed, perhaps most overtly illustrated by the way phrases such as

“google” and “tivo” have entered the lexicon. Don Ihde has considered the relationship between humankind and technology, and in “A Phenomenology of Technics” he builds a continuum between embodiment (for example, eye-glasses that transparently allow one to see), and alterity (a technological “otherness” which, due to the propensity to anthropomorphize technologies, becomes “quasi-otherness”). Ihde (1990) explains:

*At one extreme lie those relations that approximate technologies to a quasi-me (embodiment relations). Those technologies that I can so take into my experience that through their semi-transparency they allow the world to be made immediate thus enter into the existential relation which constitutes my self. At the other extreme of the continuum lie alterity relations in which the technology becomes quasi-other, or technology “as” other to which I relate. (p. 526)*

Ihde argues computer technology is one of the stronger examples of alterity relations (noting, however, the computer’s usefulness positions it closer to the middle of his scale), but perhaps Ihde could not predict the extent to which digital, communicative technology has become a mediation point in today’s culture, pushing the boundary between human and machine much closer to embodiment. Allucquère Rosanne Stone (1992), for example, has stated that cyberspace has “achieved visibility in the context of late capitalism, in the historic moment of ‘biosociality’...or ‘technosociality,’ the state in which technology and nature are the same thing, as when one inhabits a network as a social environment” (p. 610). Georges Can-guilhem (1992), arguing from a much earlier time period, interestingly draws the same conclusion, that technology – writing from the pre-digital world, he refers to “machines” and “mechanisms” – is a fact of culture, and therefore the product of a “technical activity that is as authentically organic as the flowering of trees” (pp. 59-60). N. Katherine Hayles’s (1999) work on the posthuman is concerned with the immaterial, disembodied nature of information, and how it has led to the construction of “informational pathways connecting the organic body to its prosthetic extensions” (p. 2). Perhaps most famously, this blurring of edges between human and technology has been described by Donna Haraway (1991) as a “cyborg”:

*Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organism and machines. Our machines are disturbingly lively, and we ourselves frighteningly inert...Our best machines are made of sunshine; they are all light and clean because they are nothing but signals, electromagnetic waves, a section of the spectrum, and these machines are eminently portable, mobile...Cyborgs are ether, quintessence. (pp. 152-153)*

Her characterization of cyborgs made of sunshine and signals recalls the virtual nature of cyberspace, how a blogging community is a space, rather than a place.

In light of the above discussion, the blogger seems to embody the technology of the blog, a blurring of edges between the material, physical nature of the person at the keyboard, and the immaterial space of the blog’s virtual community. The blog becomes more than an extension of one’s feelings and thoughts, because if the blog ceases to exist, so does the blogger. The technology, as Ihde states, enters “into the existential relation which constitutes my self” – the blog is the blogger, one and the same. Chris Bowers, a prolific writer currently at OpenLeft.com, has gone as far as to state, “...blogging has altered my very consciousness. After two and a half years of virtually non-stop blogging, my perception of myself as a distinct individual has dramatically waned,” adding how his sense of self has been “subsumed into the activity of blogging,” and even into his actual blog.<sup>2</sup>

The above three aspects of cyberspace – virtuality, networked publics, and digital embodiments – constitute the basic elements of the blogger’s life. They define a state of being that is at once in the “real world” and in cyberspace, marked by willingness to redraw boundaries between previously-held notions of public and private, creating an intimate connection between the blogger and the blog, an embodiment of technology that is made of sunshine, ether, quintessence. If the blogger, then, is the blog, it is worth some further exploration, to examine exactly how this happens. The discussion there-

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<sup>2</sup> Chris Bowers, *Being and blogging*.  
<http://www.mydd.com/story/2006/12/11/1517/3275>

fore turns to the intersection between a specific component of the medium – the database – and the orality found within the blogger's social practices. The blogger comes to embody the blog through the blog's cyborg memory.

#### IV. Cyborg Memory

*An oral culture has no texts. How does it get together organized material for recall? This is the same as asking, "What does it or can it know in an organized fashion?"*

- Walter Ong, *Orality and Literacy*

Oral cultures rely heavily on mnemonics and formulas to develop memory systems, as knowledge cannot be written down and stored. Rhetoricians, such as Cicero, solved this problem of knowledge persistence through an artificial memory, by "mentally creating a series of imaginative spaces, usually a vast building ...[and placing]...images of the things or words to be remembered" inside (Davis, 1994). Later, "walking' through the phantasmic palace, one could locate the appropriate icon, and then recover its store of words and information" (Davis, 1994). Writing restructured this problem by permanently fixing memory, or at least fixing it for as long as the medium lasted. Computers, of course, not only exponentially expanded the limits of what can be remembered, but provide the ability through search engines to recall this information with ease. Computers are integrally tied to the notion of memory, both physically (the computer will not run without the memory chips in place), and virtually (by storing data in the ether of cyberspace). New media theorist Lev Manovich (1998) has argued this point, noting the "human-computer interface is a cultural language that offers its own ways of representing human memory and human experience," and describing the computer as "mostly a memory machine that stores our records, our 'old media'." Of course, the advent of the blog has meant the Internet's memory machines today store more than simply our "old media" records – blogs contain new forms of sociality, and the conversations that constitute those social relations are stored in a database. The community-based blog, in particular, creates a group-based memory store: a collective memory.

The development of a theory of collective memory is primarily attributed to Maurice Halbwachs (1980), who distinguished history, a

"collection of the most notable facts in the memory of man" (p. 78), from collective memory, which is something much more social:

*Every collective memory requires the support of a group delimited in space and time. The totality of past events can be put together in a single record only by separating them from the memory of the groups who preserved them and by severing the bonds that held them close to the psychological life of the social milieus where they occurred, while retaining only the group's chronological and spatial outline of them. (p. 84)*

More recently, scholars have disputed the notion of a collective memory, especially during the 1990s when it became apparent the Internet boom held imminent changes for our society. One example is Jeffrey K. Olick (1999), who found a clarity that was missing from the "indiscriminate" use of the term: "[Collective memory] has been used to refer to aggregated individual recollections, to official commemorations, to collective representations, and to disembodied constitutive features of shared identities" (p. 336). Olick called for a "social memory studies" approach, one that uses collective memory as a "sensitizing term for a wide variety of mnemonic process, practices, and outcomes..." (p. 346). A more radical approach was advocated by Noa Gedi and Yigal Elam (1996), who conclude collective memory is "actually a fabricated version of that same personal memory adjusted to what the individual mind considers, rightly or not, as suitable in a social environment...Indeed, collective memory is but a myth" (pg. 47). Today, with the proliferation of social media, the notion of collective memory must once again be re-assessed. In particular, the advent of the blog as both a medium and social practice forces a rethinking of the concept of collective memory and has perhaps even settled this dispute: the blog *is* collective memory, a virtual machine that creates a permanent, social history for the blogging community.

The blog's memory, in fact, can be seen as a kind of technological *prosthetic*, defined as "an artificial device to replace or augment a missing or impaired part of the body," from the Greek term for addition, or "to add to" (Merriam-Webster). As the subject of inquiry for "intell-



ectuals, scholars, students, and practitioners who are concerned with interactions *in general* between the body and technology in modernity," the notion of prosthetics as "an addition, a replacement, and also an extension, an augmentation, and an enhancement" (Smith and Morra, 2006, p. 2) relates back to the previous discussion of digital embodiments and boundaries. In the case of the blogger, the boundary between body and technology is blurred because the conversations that take place on the blog become, by design, permanent artifacts of the community's orality – digital traces of their social relations. The blog's database stores a vast amount of data, within which the summation of every comment, thought and utterance made by the community is stored:

*All Daily Kos documents from the beginning to within 5 minutes of the present moment are indexed. Older documents are stored in static yearly indices while more recent documents are indexed and reindexed, frequently at first, then less frequently as they age, until they roll over into a growing, static, permanent [sic] yearly index...At present three different series of indices are maintained, corresponding to (in order of increasing total number of documents) front page stories, user diaries, and comments. For 2005 the number of stories, diaries, and comments was 5097, 88943, and 693224, respectively, containing 56993, 371578, and 2945916 distinct words. (Searching Daily Kos, n.d.)*

By storing every bloggers' conversations, the blog becomes a prosthesis for the community's collective memory – conversations become memory; memory becomes a prosthetic.

It is important to note this prosthesis of memory – the comments that exist within the blog's database – is not an "archive," a set of data called upon intermittently, but something much more alive, something that requires constant engaging. As Andreas Huyssen (1995) has remarked, the "past is not simply there in memory, but it must be articulated to become memory" (p. 3). For the blogger, this articulation is a proactive process – as the blogger speaks in hypertextual conversations, the construction of links requires frequent navigation through the blog's database. On Daily Kos, this articulation of memory is accomplished with the assistance of four memory recall mechanisms. First, is the blog's *search engine*, which can be used to query

for posts and comments, using date, timeframe, author and many other options to narrow the focus. Next, is the use of *tags*. These are user-defined referents, or annotations, that are added to Diaries: "Tags are keywords that the diary author and/or readers add to identify the subject(s) of the diary. This allows people to easily find all of the diaries that deal with a specific subject" (Daily Kos FAQ, n.d.). Over time, the collection of the site's tags grows, and searching through tags – a form of memory recall – provides a path to new and unexpected connections between diaries (connections that may be missed by, for example, just using a search engine). A third feature of the Daily Kos website that relates to recall is the *hotlist*, which is a "place to store links to diaries that you want to refer back to" (Daily Kos FAQ, n.d.). Each user has a hotlist, and part of the daily (or perhaps hourly!) routine of the kossacks is to check there for new comments in any of the diaries in which one has previously participated, or new diaries from any of the other users to which one has subscribed. Finally, there is a *wiki*, on Daily Kos, known as "dKosopedia." The dKosopedia, modeled after Wikipedia, the popular online encyclopedia to which anyone can contribute, is a reference point that tracks important political events, and, in many cases, points back to diaries covering these topics at Daily Kos. There are also many pages that cover the Daily Kos site itself, known in blogger terminology as "meta." For example, "DailyKos History" tells the story of the evolution of the site, the "Instant Classics" pages store links to diaries that are somewhat legendary within the community, and the "Important Guests" page links to notable people (such as Barack Obama, Ted Kennedy, and Jimmy Carter) who have written blog posts over the years. In this way, dKosopedia creates an ever-expanding yet searchable encyclopedia of the Daily Kos website's history.

All four of these recall mechanisms are an integral part of the language and practice of blogging, for, as previously mentioned, the form requires the creation of links. Using this self-referential style of conversation, hyperlinks are incorporated to refer to previous posts:

*Obama throws Gibbs under the bus by kos*

*Mon Feb 26, 2007 at 01:19:23 PM PST*

*Remember Obama spokesman Robert Gibbs? I wrote about him last week... (kos, 2007)*

The “wrote about him” in the original text (underlined here for clarity) provides a link to a previous diary, and allows readers to contextually (or, rather, hypertextually) understand what transpired before reading the current material. This is the everyday language of the blogger, made possible by the blog's recall mechanisms. The act of blogging and the communities that form from this practice would be impossible without the vast, collective memory stored within the blog's database.

As a technological prosthetic, the blogger's cyborg memory can be described as “perfect” memory. Perfect, of course, is a loaded term. It can mean “infallible,” and while computers and networks have various levels of redundancy and fault-tolerance built into them, they certainly can fail. The word also has a utopian, Web 2.0 marketing spin, as in Google's use of the term when describing their product as the “perfect search engine” that “understands exactly what you mean and gives you back exactly what you want” (Google Corporate Information). More appropriate, though, is Lev Manovich's (1995) use of “perfect,” as he described the nature of computer-generated images as being “free of the limitations of both human and camera vision,” with “unlimited resolution and an unlimited level of detail.” For Manovich, the computer image is hyperreal, and yet completely realistic – it is “simply a result of a different, more perfect than human, vision.”<sup>3</sup> Similarly, the blogger's memory becomes perfect through the blog's ability to provide instant and exact recall – the blogger can retrieve exactly what he or she said, without the limitations of recall inherent to the human brain.

### V. Virtual Memory

*This distinction between the virtual and the actual corresponds to the most fundamental split in time, that is to say, the differentiation of its passage into two great jets: the passing of the present, and the preservation of the past.*

- Gilles Deleuze, *The Actual and the Virtual*

Memory and the virtual are inextricably tied. Deleuze (2002) calls memory a “virtual image” that coexists with actual perceptions. In

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<sup>3</sup> Lev Manovich, *The paradoxes of digital photography*. Photography After Photography Exhibition Catalog, Germany. [http://www.manovich.net/TEXT/digital\\_photo.html](http://www.manovich.net/TEXT/digital_photo.html)

this way, the virtual is ephemeral, but also preserves the past. The blog, as a virtual memory machine, works in a similar manner. The community that forms within the space of a blog are “not-there” – they are “deterritorialized” (Levy, 1998, p. 29). What, then, other than memory can hold this community together? What else besides memory can create a “thereness” that constitutes a blogger's virtual existence? This paper has attempted to answer these questions by bringing to light both the medium and social practices of the blogger, using the Daily Kos website to illustrate the manner in which memory is indispensable to this community. Examining the blog in terms of its orality and not simply as a new, online form of text reveals the social aspects of the blogger's existence, social connections, which are both produced by and stored within the blog. The blog's database becomes a memory prosthesis, as bloggers engage in a variety of techniques – search engine, tags, hotlist, wiki – to retrieve their words, constructing them into hypertextual conversations. Without this collective memory, the form and practice of blogging would not be possible.

The blogger exists in bits and atoms, that is, both virtually and in real life. The blogger forms online social relations, friendships, and connections with others – these create memories, both perceptively, in episodic memory, and virtually, in the cyborg memory of the blog. The latter, though, is distinctly different from the former. Virtual memory, cyborg memory, is perfect memory – permanent, instantly retrievable, indefinitely recallable, a model for the type of memory we are creating in the digital age. Walter Ong (2002) observed “you know what you can recall” (p. 33), and for oral cultures, that limits the amount of information that can be held – human memory is imperfect. The memory of the blogger, on the other hand, is vast, pure, “made of sunshine.” Cyborg memory becomes a prosthetic, a perfect form of memory to augment the fallibility of the human mind.

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