

Ephemeral Digitality

Scott Selberg

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Approved by:
Richard Cante
Ken Hillis
Carol Mavor

ABSTRACT
Scott Selberg
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This paper investigates digital art as a means with which to reflect on wider cultural patterns of everyday digital interactions. Specifically, it attends to an ongoing debate in new media studies focused on the relationship between digital technologies and narrative. Lured by the promise of libratory new narrative forms and utopic interactivity, much recent scholarship has been mired in the investigation of the narrative paradigm to the exclusion of potentially more useful concepts that directly acknowledge the sensing subject. This paper aims to illuminate the material digital aesthetic of *ephemerality* that increasingly supplants narrative primacy in the relationship between perception and digital realizations. Analysis of new media theorist Lev Manovich's algorithmically driven digital art project *Soft Cinema*, as well as other database-driven digital works, provides what I argue is a clearer set of tools with which to understand the relationship between temporality, materiality, digitality, and sensing bodies.

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The critical aim of this paper is to trace a temporal aesthetic that arises between sensing bodies and digital realizations. That aesthetic, what I call digital ephemerality, is pervasive in contemporary digital culture. And it continues to arise as a persistent theme in time-based digital art. Recently, phenomenology has become increasingly popular in new media studies as a potential tool for theorizing subjective perception and the digital. The absence of tools with which to theorize the relationship between material senses and the formal specificity of the digital realization precipitated this move, and it has shown promise as a method with which to incorporate sensory subjectivity in the face of neo-formalism and strict cognitivist navigations of meaning in media studies.

Another branch of recent new media scholarship and art deals with the possibilities for reinventing and reconceptualizing narrative in tandem with the possibilities afforded by new digital technologies. This paper will take a necessarily polemical stance toward this scholarship, in particular toward the original theory behind new media theorist and artist Lev Manovich's digital media project *Soft Cinema*. Following the formal premises of a multi-frame interface, multiple image formats (3-D, graphics, images, animation), and software controlled real-time editing, *Soft Cinema* promises a kind of future cinema—an always new and always changing form of narrative predicated upon the technical coding of the software.¹ While problematic as theorized by its creators, *Soft Cinema* still provides us with an excellent gateway into a discussion of temporal aesthetics and the presence of these aesthetics in everyday digital culture. However, the rash of narrative theory that dominates new media

¹ This paper will generally refer to the following DVD in place of the installation: Manovich, Lev & Andreas Kratky. *Soft Cinema*. 2002-2005. DVD and Book.

scholarship,² specifically the perspective that drives Manovich's project, requires us to rescue this technology in the face of formal suffocation. It is essential to look beyond the confines of simple structure to begin to understand the subject in its ideological, material, and/or social complexity. At root, this paper attempts to devalue such neo-narratology and point out alternatives for understanding embodied subjectivity in time.

Ultimately, I engage with the temporal aesthetic as part of a larger push toward acknowledging the politics of the "haptic." The term haptic first references touch and the corporeal, but more generally it incorporates the sensory and the material. Whether it is sensing bodies or embodied technologies, the haptic underscores the immediate but extensive materiality of the subjective interaction (Marks xiii). Time-based digital art like *Soft Cinema* can help us navigate a more progressive path through the pervasiveness of digitality in the everyday, but only if we acknowledge the specificity of the relationship between bodies and the virtual.

Ephemerality is traditionally devalued as an aesthetic. This paper points toward a different perspective that is hinged on the potential of the sensory dimension of an ephemeral aesthetic. The subject who engages with the digital ephemeral potentially becomes a haptic critic in the process, maintaining "a robust flow between sensuous closeness and symbolic distance" (xiii.) Digital ephemeral as a theoretical tool allows us to engage with the possibilities of individuated sensory experience as part of a much broader extended context.

As Laura Marks reminds us in her book Touch: Sensuous Theory and Multisensory Media:

² Amongst others, see selections from Rieser, Martin, & Andrea Zapp, eds. New Screen Media: Cinema/Art/Narrative. London: BFI, 2002.; Ryan, Marie-Laurie. Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media. Baltimore: Johns Hopkins University Press, 2001.; Shields, Rob. "Hypertext Links: The Ethic of the Index and its Space-Time Effects." The World Wide Web and Contemporary Cultural Theory. eds. Andrew Herman and Thomas Swiss. New York: Routledge, 2000.; & Wardrip-Fruin, Noah, and Pat Harrigan. First Person: New Media as Story, Performance, and Game. Cambridge: MIT Press, 2004.

Aesthetics, as the interface between the ideal and the sensible, has been relegated in dualist philosophy to an account of sensuous experience that must struggle to integrate that experience into some overarching idea....It is only in an idealist world that aesthetics need be torn between material and ideal. Haptic criticism is an aesthetics in the sense that it finds reason to hope for a future in, and not despite, the material and sensuous world. (xiii-xiv)

* * *

I. The ephemeron is a slippery fugitive. Like the mayfly with which it shares its name, it has only a transitory existence.³ At heart, the ephemeron represents a relationship between the material and the temporal, a collapsing birth and death in a temporary time-space arrangement. As such, ephemera are *entirely relative* in their identity, and they can occupy both aesthetic and traditional material categories. Ephemera have a rich history throughout western modernity; indeed, the recent fetishization of their fragile (im)materiality on the part of historians and collectors can perhaps provide us with the inspiration to renew the sensomaterial register in the relationship between ephemera and digital culture.

The study of tangible ephemera has enjoyed a certain popularity over the last thirty to forty years.⁴ Traditional objects of interest include ticket stubs, business cards, advertisements, and other kinds of cheap printed matter. Additionally, in recent years archivists have begun to preserve related sorts of moving-image media as well. These artifacts, sometimes called ephemeral films, include educational films, industrials, amateur and home movies, and

³ Mayflies, of the genus *ephemeridae*, live only for a day. "Ephemera" Oxford English Dictionary. Oxford UP. 15 January 2006. Online link referenced in Bibliography.

⁴ See, for example: Gernes, Todd S. "Recasting the Culture of Ephemera." Popular Literacy: Studies in Cultural Practices and Poetics. Ed. John Trimbur. Pittsburgh: Pittsburgh University Press, 2001. 107-127.; Mairowitz, David Zane, & Peter Stansill, eds. BAMN Outlaw Manifestos and Ephemera 1965-70. Brooklyn: Autonomedia, 1999.; Preston, Cathy Lynn, & Michael J. Preston, eds. The Other Print Tradition: Essays on Chapbooks, Broad-sides, and Related Ephemera. New York: Garland, 1995.; Rickards, Maurice. Collecting Printed Ephemera. Oxford: Phaidon, 1988.

advertisements (Dargis 1).⁵ Forming a sort of semi-material armature for modern mass cultures, rediscovered or salvaged ephemera can provide historians with a different kind of anti-evidence that paints broad movements and tones as opposed to certain cause-effect deterministic relations.

In a kind of turn to New Historicism, ephemera historian Maurice Rickards claims: “Just as the ancients conceived of a *genius loci*, the soul and spirit of a place, we may perceive a *genius papyri*. In every fragment of ephemera resides the spirit of the paper, the abiding essence of its message, origin, and content” (16). But historiographic potential aside, given the special kinds of retroactive aura ephemera maintain, the fetishization of paper ephemera can only grow—especially as digital communication increasingly supplants those artifacts in everyday life, and they become more distinctly present in their absence.

The realm of virtual ephemerality provides scholars with a distinct set of questions. Is there, or can there be, such a thing as ephemera in digital culture? Or, conversely, isn't all digitality necessarily ephemeral? Isn't sensually available digital “presence” predicated on an interface and organizing algorithm that can only temporarily materialize that digital “information”? Regardless of what kind of interface it occupies, all digital information is itself only an electronically driven arrangement doomed to diffusion. For this very reason, Katherine Hayles marks informatics as populated by “flickering signifiers,” after Lacan’s “floating signifiers.” Info discourse, she says, is characterized by a “tendency toward unexpected metamorphoses, attenuations, and dispersions” (30). Therefore, digitality necessarily follows movements of pattern and randomness as opposed to even the deconstructed binary of presence and absence. In this sense, digitality actually adheres to a

⁵ A good example of this practice can be found in the Prelinger Archives in San Francisco. Curator Rick Prelinger is at the forefront of the movement to save orphan films, industrials, etc.

necessary aesthetic of ephemerality. No digital realization can avoid that aesthetic by nature of its ontological promise. Therefore, if we take our definition of ephemera to be relational—that is to say, ephemera can only be conceptualized via its relationship to more overt, primary, or relevant information or discourse—and if all digital culture is ephemeral anyway, then how can one “locate” ephemera in a digital “context”? Furthermore, *all* media trapped in a larger context of “new digitality” fall prey to the taint of this aesthetic, despite their actual basis in one medium or another.

Baudrillard’s description of aesthetic nullity is helpful here. For Baudrillard, access to a real has been made impossible by the move from signification to simulation. Contemporary art has responded to the “impossibilities of the real” by “confiscating banality, waste, and mediocrity as ideologies and values” (Baudrillard 27). Marcel Duchamp, of course, took some of the first steps in this regard (most famously with his 1917 Readymade *Fountain*), but Andy Warhol perfected the practice. Ever since then, art has scrambled to echo the embrace of the banal and the mundane. Baudrillard believes all culture is therefore subsumed under a “trans-aesthetic”—a pervasive and generalized valuation that crushes all meaning into nullity. In this condition, all culture can only exist in an equilibrated time-space. Relationality becomes impossible in this nullity. All is culture; all is aesthetic.

I, however, want to resist the temptations of this particular Baudrillardian cul-de-sac. It is more productive to understand the above described pervasive “condition” of nullity as an “impulse” to nullity. Indeed, this turn allows the ephemeral to exist again in the first place, since, as stated earlier, the ephemeron is relative and only incurs its relative status by virtue of its relationship to other non-ephemera. Baudrillard’s theorization of a trans-aesthetic doesn’t allow for the variability that ephemera depend upon for their very conceptual

existence. But a more grounded postmodern *impulse* towards nullity guarantees ephemeral possibility.⁶ Refashioned thus, it remains worth exploring the potential place of ephemerality in digital culture—especially as a persistent aesthetic that can potentially accompany, and perhaps inspire, new cultural forms in new time-space arrangements that reflect the specificities of the digital.

This is not technological determinism. Technological determinism implies that possibilities for change are afforded specifically by technology. Digital ephemerality insists on a dialogue between sensing bodies and technology as always part of a larger context. It is important to recognize that the technology is always engaged with and responding to that context. This is why I feel it critical to point out the possibility that broad shifts in cultural aesthetics are being reflected and theorized in more experimental digital artistic practices—as a way to reflect and engage with that context.

New-media theorist and artist Lev Manovich’s 2002-2005 digital art project *Soft Cinema* is a primary example of such an experimental practice. It serves as a sufficient springboard towards further discussion of the ephemeral aesthetic’s broader ramifications.⁷ While Manovich deals directly with media aesthetics in his art, the theory that he produces alongside such work cannot adequately deal with what is perhaps the *crucial component* of the ephemeral aesthetic. Indeed, neo-formalists such as Manovich obscure the complexity of the relationship between subjects, time, technology and aesthetics. Much of the following

⁶ It is possible that Baudrillard accounts for the ephemeral in a limited sense. He allows for the possibility of “singularities” that can arise against the “backdrop of a virtually flat “aesthetic encephalogram” (58). He maintains that these are strictly apolitical and merely occasional, however. For the purposes of this paper and in search of a politics that transcend the postmodern dead end, that view is still too limiting.

⁷ *Soft Cinema*. DVD and Book. The work was coproduced and developed with Andreas Kratky. There are a host of other contributors, but because the art is considered an extension of Manovich’s theory, or at the least a reflection upon his database writing, I will refer to Manovich as the author of *Soft Cinema*. I do not mean to undermine the complexity of the work nor detract from the achievements of the other collaborators, but clarity demands that I do so anyway.

analysis of Manovich's work could rightly be considered a polemic, but it is polemical for good reason. The theoretical ground upon which Manovich constructs his art (theoretical ground that currently enjoys certain favor in much of new media studies) requires a more carefully measured engagement. That theory is far too rooted in formalist accounts of user experience that can never account for contingency. That is not to say that *Soft Cinema* is without merit. Indeed, I would argue quite the opposite. The work itself provides an excellent opportunity to debate the scholarship focused on digital narrativity, as well as offering excellent terrain in which to unpack the conceptual complexity of the digital aesthetic of ephemerality.

Manovich has been an avid participant in the dialogue around narrative in digital culture since new media's conception. These debates stem primarily from the new formal possibilities of the digital technologies. It is possible to illustrate the general formal arrangement of digital media technology by clarifying the three primary inter-operational forms. Each basic form works with and relies on the other forms to assure the digital realization. At a very basic level, digital information is released into an interface through a hierarchical, but non-linear, process of Random Access Memory, or RAM (Le Grice 282). The data is generally stored in some sort of database. Then it is released through the process of an algorithmic translation and organization. The database, defined as a "structured collection of data," can be classified as the dominant form of computer-based technology (Manovich, *Language* 218). The algorithm functions as the operating "logic" of transcoding and data generation. The interface of course varies according to context, technology, and use. For example, the touch screen interface on a bank's ATM works in a slightly different manner than a keyboard and graphical user interface on a personal computer. The ATM

interface is much simpler because its command functions are limited to a highly specific set of tasks. Indeed, the possibilities for the material structure of the interface are exploding as the mediascape broadens and variegates. Each of these three levels then—database, algorithm, and interface—need each other in order for a digital media text to operate. This is the standard process by which digital information is organized into a sensually available presence for a user (218-228).

Thus, the argument holds that digitality opens up the possibility for a non-linear “narrative” based upon the unfixed nature of its realization. Whereas film progresses along a specifically linear path, digital access allows multiple permutations whereby the user can follow multiple narrative paths. In this sense, the logic of the database and the algorithm tends to overwhelm the traditional logic of narrative. This principal of variability constitutes the ground for the non-linear and fragmented narratives in/of digital media.

* * *

II. Using Manovich’s language, we can say that there are three short “films” that comprise the *Soft Cinema* canon, each using a version of the same generative software: *Texas*, *Mission to Earth*, and *Absences* (*Soft Cinema Catalog 2*).⁸ For the purposes of this paper, I will concentrate on *Texas*, as it is the first primary example of the project, and perhaps the most typical treatment of Manovichean database theory. While the work was originally created as an installation for a 2002 ZKM media exhibition at the Center for Art and Media in

⁸ In truth, “film” is a misnomer here, as there is no actual film utilized in this project. Manovich desires to create a new form that merges cinematic and database aesthetics, and it is perhaps more suitable to his purpose to label them database narratives.

Karlsruhe, Germany, entitled “Future Cinema: Cinematic Imaginary after Film,” it was later redeveloped with somewhat reconceptualized content for the 2004 DVD version (9).⁹

More than a particular text, the title of *Soft Cinema* references a specific form of media making. The “soft” of the title refers most obviously to “software,” and that is the driving component and theoretical lynchpin of this “cinema.” In this program, software organizes and “edits” media from a database (or multiple databases) directly into a changing multi-frame interface in real time. The algorithms that control *Soft Cinema* are designed to produce the media differently with each use, so in effect the “narrative” presentation is always new and never repeats itself.

Texas utilizes several primary databases that are generally separated by media content type. The video database is comprised of 425 video clips that Manovich himself shot in different parts of the world. An audio database includes music created by composer George Lewis: “samples taken from his own archive of sounds” (8). A second audio database consists of found sounds and digitally constructed music collected and recorded from a variety of sources and locations. A separate database provides a voiceover. Other media content includes hand-drawn animation, written scrolling text, and abstract designs.

The algorithm that drives *Texas* selects information content from the many databases and arranges them into the interface in real time sequences. This is to say that the selection and distribution of content occurs generally at the same time as the viewer experiences that content. The program is set to continue indefinitely, and each database holds hours of content. The algorithm operates according to a set of 10 parameters, selecting content based

⁹ The exhibit was was curated by Jeffrey Shaw and Peter Weibel. Further information about the show can be found in their catalog of the exhibition, later published as: Shaw, Jeffrey, and Peter Weibel, eds. Future Cinema: The Cinematic Imaginary after Film. Cambridge: MIT Press, 2003.

on “similarities” and “differences”—screen direction, contrast, subject matter, etc. Manovich considers this software design to be similar to a search engine like Google (11). This is because it searches for content from the databases and then rearranges that content into a short sequence for the user. Every minute or so the software searches for a new set of content for the next sequence.

The interface constantly shifts formats. But its basic structure is one horizontal rectangle (built to accommodate the shape of the computer screen or monitor) that is divided into several smaller rectangular frames. The layout of the frames as well as the image/sound “content” frequently shift according to the algorithmic design of the editing software. Periodically, text scrolls across rectangular bands in different parts of the screen (echoing the aesthetic of 24-hour cable news channels and the scrolling text bars at the bottom of the screen). Sometimes those same bands include bands of color or abstract, shifting, linear shapes. The voiceover drones in the background, detailing a variety of stories, memories, and assorted other (perhaps thematically arranged) “content” culled from Manovich’s own short stories (*Soft Cinema* DVD Interview). The sounds and music overlap and occasionally drop out into silence. There are no overlays, fades, or dissolves utilized in the editing. The general presentation is one of constant, shifting *movement*. Stillness is avoided entirely, almost as if the formal flow constitutes the meaning of the piece itself. Of course this last conclusion is not consistent with Manovich’s overriding intent; movement for movement’s sake actually works in opposition to the binding tendencies of the narrative form. Rather, his desire is to open up new possibilities for cognitive associations for the viewer that represent the broad subjective experience of the modern world—in his view, this is a narrative step.

Texas—indeed *Soft Cinema* itself—is part of Manovich’s larger project to create a “database cinema” that illustrates and illuminates new narrative possibilities:

Given the dominance of the database in computer software and the key role that it plays in the computer-based design process, perhaps we can arrive at new kinds of narrative by focusing our attention on how narrative and database can work together. How can a narrative take into account the fact that its elements are organized in a database? How can our new abilities to store vast amounts of data, to automatically classify, index, link, search, and instantly retrieve it, lead to new kinds of narrative? (Manovich, *Language* 237)

However, there exist some implicit tensions in this endeavor that Manovich tries to address in his own work. That is to say, Manovich straddles an uneasy paradox in his understanding of the relationship between new and old media and his subsequent conceptualization of the database narrative form. On the one hand, he is careful to acknowledge the specificities of digital technologies and the way those technologies relate to those who use them. But he is also determined to understand digital media through the social, technological, and cultural languages of older media.¹⁰ This creates problems. For instance, according to Manovich, narrative was the “key form of cultural expression of the modern age” (novels, cinema), while “the computer age introduces its correlate—the database” (218). Herein lies the theoretical tension. Manovich believes that the database and narrative are opposing forms. He writes: “As cultural form, the database represents the world as list of items, and it refuses to order this list. In contrast, a narrative creates a cause-and-effect trajectory of seemingly unordered items (events). Therefore, database and narrative are natural enemies” (225). Yet, it is with the language of *narrative* that Manovich seeks to describe the logic of the subject’s interaction with the digital database. It is almost as if the tension of the formal interaction between database and narrative constitute the only possible site of meaning for the subjective

¹⁰ For instance, Manovich calls Dziga Vertov one of the 20th century’s “great database filmmakers” because of the manner in which Vertov utilizes montage. See the brief introduction to [The Language of New Media](#).

interaction. While he does not wish to champion narrative exclusively, he theorizes under its spell, continually turning towards cinema, for instance, as the consistent partner to the database form. *Soft Cinema* is his attempt to illuminate the possibilities of that future formal union.

Essentially, Manovich wishes to read the specificity of the technology through the language of its historical technological predecessors. While this is of course a worthy strategy for contextualizing media form and the ideological, social, and technological discourse that inform new media, it should not stand as the basis for all of our new media scholarship. This is the same error made by new media theorists Jay David Bolter and Richard Grusin in their book Remediation. Their thesis holds that all media are in a dialogue with other media: “digital visual media can best be understood through the ways in which they honor, rival, and revise linear-perspective painting, photography, film, television, and print. No medium today, and certainly no single media event seems to do its cultural work in isolation from other media...” (Bolter & Grusin 15). “Isolation” is of course impossible, and this is perhaps an appropriate academic response to both modernism’s devotion to the “new” as well as to the Academy’s rush to isolate the novelty of digital technology in New Media Studies. But this kind of scholarship tends to flatten the political dimension of new media theory, and it limits the discussion in precisely the same way that the authors speak against. That is to say, instead of fetishizing newness, we end up fetishizing un-newness. This is not productive epistemologically; Bolter and Grusin’s thesis has obvious validity, but we need to look beyond traditional terms to anticipate and formulate progressive concepts and to more adequately address current social, cultural, and political conditions.

Unfortunately, theorists such as Manovich continue to insist on using retro-inspired formalist discourse in their work. Furthermore, at least in Manovich's case, the manner in which the terms of theoretical engagement are defined is mired in traditional formalist theory. Citing Mieke Bal, Manovich defines narrative as having "both an actor and a narrator...three distinct levels consisting of the text, the story, and the fabula...and its contents should be 'a series of connected events caused or experienced by actors'" (Manovich, *Language* 227). This kind of definition, while perhaps useful for basic analysis and clarification of a literary or cinematic work, is certainly not helpful for a work itself predicated on fragments. When Manovich claims that "obviously not all cultural objects are narratives" (228), he reveals his structuralist roots. I would argue that when the subject is seen as a fluid site of possibility, indeed *anything* can be understood as narrative.

Marsha Kinder mounts an effective critique of Manovich's structuralist view of narrative simply by calling to the fore a litany of post-structuralist narrative theory. For example, she cites Teresa deLauretis:

Today narrative theory is no longer or not primarily intent on establishing a logic, a grammar, or a formal rhetoric of narrative; what it seeks to understand is the nature of the structuring and destructuring, even destructive, processes at work in textual and semiotic production...a production of meaning which involves a subject in a social field. (quot. in Kinder, *Narrative* 120)

Manovich doesn't entirely disregard subjects, but he is unusually limited to a cognitive, rational understanding of the viewer's subjectivity. As Kinder notes, his work "deliberately avoids ideological considerations, defining narrative through a list of essential components and questioning whether a work 'qualifies,' rather than what functions it performs" (121). It is important to recognize, however, that Kinder herself falls into the narrative trap. While she does attempt to extend the embrace of narrative to include a broader understanding of

ideological context, she maintains narrative framing and subjective interpellation as the primary indicator of social, historical, and cultural meaning. Even if it distances itself from the formalist perspective, Kinder's perspective maintains the possibility for a kind of "narrative politics." It is clear that one of Kinder's primary goals is to reassert "agency" into digital subjectivity and that she sticks to the confines of narrativity in her methodology.¹¹

The attempt to pin down the specificities of user interaction is not unusual in new media theory. Many scholars have invested a great deal of energy in the question of user "agency" in the face of digital technology.¹² As stated earlier, because of the variability of digital realization, the multiple ways of reading a text are brought to the fore, formalized in the possibilities of the user experience itself. Furthermore, users frequently depend on devices like the mouse or keyboard to "control" the unfolding of these digital texts, which gives rise to debate over new kinds of interactivity and new potentialities for the performance of narrative. Predictably, utopian politics have seized upon these narrative models as harbingers of potentially radical new cultural forms and practices.

While Manovich clearly foresees a wide range of potential with nonlinear narrative, his stance towards such utopianism is cautious. Specifically, he refuses to grant any special agency to the user of a digital database narrative. Digital-specific *interactivity*, he claims, is a myth: "In short, we are asked to follow pre-programmed, objectively existing associations.

¹¹ For example, in her work on database narratives, Kinder attempts to point out the narrative consistencies between new media gaming structures and the structures of experimental films of the last half century (Agnes Varda's *Cleo from 5-7*, Chris Marker's *La Jetée*, etc.) and the ideological implications therein. She investigates the specific narrative moments inherent to each that cohere to operate as a "formidable narrative machine whose ideological operations are exposed" in: Kinder, Marsha. "Narrative Equivocations between Movies and Games." *The New Media Book*, ed. Dan Harries. London: BFI, 2002. 128. For further examples of this trend, see Kinder, Marsha. "Uncanny Visions of History: Two Experimental Documentaries from Transnational Spain—Asaltar los cielos and Tren de sombras." *Film Quarterly*. 56.3 (2003) 12-24.

¹² For example, see works by Campbell, Cubitt, Feingold, Wand, Wardrip-Fruin, and Weibel, cited in Bibliography.

Put differently, in what can be read as an updated version of French philosopher Louis Althusser's concept of 'interpellation,' we are asked to mistake the structure of somebody else's mind for our own" (Manovich, *Language* 61). This statement is telling: Manovich treats users as produced subjects. But Manovich also views the user interaction as *purely cognitive* in nature, disregarding, for instance, the precognitive perception as in itself worthy of consideration. Manovich stretches the comparison beyond its capacity, and the combination is incoherent. The ideological interpellation to which Althusser refers can not be equated with the formal process of digital interaction. In essence, according to Manovich, we are under a process of cognitive regulation when we follow the preordained routes programmed into the relationship of algorithms and a database structure.

Ultimately, the question of interactive agency in digital narrative becomes too narrow to be productive anyway. Utopian descriptions of these non-linear narratives that allegedly invite liberatory modes of usership ultimately close down digital media's potential to narrative alone. New media theorists such as Sean Cubitt therefore believe that narrative, while still a critical aspect of new media's "avant-garde" potential, needs to be recognized as only *one possible element*. As he explains, "narrative/anti-narrative is a binary opposition incapable of producing a new term beyond their polarity. The emergence of alternative media forms, by contrast, demands not dualism but a dialectical understanding capable of producing something new...narrative is no longer—if indeed it ever was—the central mode of communication" (Cubitt, *Spreadsheets* 6-7). While it is important to avoid fetishizing newness in new media studies, for Cubitt narrative is not the correct manner of thinking about the interaction between users and digital realizations.

I agree with this. How, for instance, can we acknowledge the sensing subject in all of its contextual complexity within such confines? Where might materiality factor into the digital event outside of the rigidity of formalist descriptions of a technology at work? Ultimately, how can we engage with the temporal register in its material embodiment without making mandatory prescriptions as to cause and effect and agency?

The answer, paradoxically, may lie in an analysis of *Soft Cinema* and *Texas*. Specifically, closer analysis of digital ephemerality should serve as an example of how temporal aesthetics can take the place of narrative analysis in a more contextually-oriented analysis. While it is certainly possible to link narrative elements in an associative manner when watching this kind of algorithmically driven media, the overwhelming promise of the piece is fragmentation. Despite Manovich's intentions, in *Texas* no image can maintain a position of interest, despite the hierarchy of frames within the interface. Furthermore, because the appearance of the images is seemingly random—and because Manovich's coding allows the digital realization to never repeat itself—the images and sounds exist in an extended ephemeral and transitory state, constantly regenerating and renewing into new forms. One is reminded of Katherine Hayles' "flicker." All images struggle for dominance but never succeed; each momentarily passes into being and then falls away.

Texas is interesting to investigate precisely because—just like common digital culture on the internet and throughout varied mediascapes—it claims to do what it cannot actually do. It claims to promote narrative navigation through association, but it ends up falling to the perimeters of "cognition." Content slips; affect dominates. What is crucial about this is the *momentary* profundity of each of the elements; but this profundity always takes place at the "edge of perception." Temporality itself is the primary register of affect, rather than the

content of the piece. In other words, it is not the formal arrangement or a cause and effect relationship that dominates perception. It is, rather, the awareness of one's own bodily relationship with the digital realization as it occurs. When watching *Texas* one may be *able* to coordinate a possible narrative, but I would argue that this is not the overriding inclination. *Texas* encourages sense, not cognition.

It is clear that instead of looking to new forms of *narrative*, it is far more productive to investigate how the digital gives rise to new *aesthetics*: in particular, the aesthetic of ephemerality. That aesthetic is of course still engaged with ideological context, the formal specificities of the digital, and crucially, the temporal and spatio-material axes of sensory perception. This methodological angle allows us to engage the phenomenological enframing that is so helpful for understanding the idiosyncrasies of digital textual generation. Further, it forces one to disengage with the primacy of the cognitive relationship between user and technology. What matters here is sense as the materialization of the temporal. Sensing bodies dwell on/in the temporal present presence.

Manovich maintains an interesting assumption regarding the manner in which digital form relates to materiality and virtuality, and it perhaps fuels his disregard for the user's sensory perception. Manovich assumes that the screen itself exists purely as representation. Commenting on the history of media representation in the face of a cultural dream for virtual interaction, he remarks: "a screen is still a screen...as was the case centuries ago, we are still looking at a flat, rectangular surface, existing in the space of our body and acting as a window into another space" (Manovich, *Language* 115). Manovich assumes a definitive separation between the digital and the body and is therefore unable to understand the ways in which they interact beyond a cognitive level.

This is the difference between digital *representations* and digital *realizations*. I would argue that “representations” anticipate a necessary split between media image/sound and sensory receiver, between what is “on the screen” and what is “in the mind,” and ultimately between perception and meaning. “Realizations,” on the other hand, bridge these kinds of divisions, acknowledging the material presence of the digital across the perceptual field. The move towards understanding the digital process as realization instead of representation does not deny the constructedness of the digital technology, nor the way that technology can maintain specific ideological social coding. Rather, it simply affords a more complex relationship between bodies, text, and technology. It is essential that we explore the ways in which the “screen” acquires its presence through the body’s own production and the ways that the digital enters into the body as material sensory presence. It is at this level that we can engage the process of temporal aesthetics through a concept like ephemerality.

* * *

III. So what exactly constitutes a temporal aesthetic? Simply put, temporal aesthetics function as particular forms of recognition of traces of time by a sensing body. *Texas* offers, above anything else, a shifting immediacy—traces of an always limited “now-ness.” Each video clip, sound, chord, or fragment of dialogue only exists for a limited time. Granted, this level of temporal awareness is entirely relative, and it is impossible to distinctly specify the intensity or true nature of that awareness. As noted earlier, the ephemeral is relational and only gains meaning through contextual comparison. How to locate it, then?

Digital ephemerality only functions as such because it works differently on the sensing body than non-ephemeral aesthetics. Digitality offers impulses towards the ephemeral, a kind of shifting between the awareness of the immediate fragility of the digital realization

and the rooted centrality of the sensing body. In this regard, the temporal register acquires a kind of immediacy that asserts itself through that bodily awareness. Paul Virilio's notion of "intensive" and "extensive" time might be a helpful way to think about the contextual nature of the temporal register (72). Intensive time is the time of immediacy, of now, of hyperaware presence. It is a time beyond perception that also constitutes the stuff of perception.

Extensive time is the time of history, of perspective, and of slowness. According to Virilio, extensive time is no longer the paramount time; intensive time has taken over.

Digital ephemerality exists somewhere in between these two times, not strictly adhering to one mode of temporality, but reliant on both. It finds itself falling constantly inwards, collapsing into "the core of time, a temporal atom there in each present instant, an infinitesimal point of perception from where extent and duration are differently conceived" (72). But it can only move towards that intensive time because it is able to move *away* from extensive time. The images and sounds in *Texas* are constantly moving towards a specificity that is itself threatened with disappearance. This is because the temporal context itself is constantly shifting. And as the images foreshadow that disappearance, each ephemeral fragment betrays its context in a more extensive history. To experience *Texas* is to experience immediacy and a greater temporal awareness simultaneously. In other words, the "now" acquires a temporal context. Marcel Proust provides apt metaphor for this tension with his description of the glass water jars in Swann's Way:

I used to enjoy watching the glass jars which the village boys used to lower into the Vivonne to catch minnows, and which, filled by the stream, in which they in turn were enclosed, at once 'containers' whose transparent sides were like solidified water and 'contents' plunged into a still larger container of liquid, flowing crystal, conjured up an image of coolness more delicious and more provoking than they would have done standing upon a table laid for dinner, by showing it as perpetually in flight between the impalpable water in which my hands could not grasp it and the insoluble glass in which my palate could not enjoy it. (237)

Proust's narrator's synaesthetic experience of the cool jars of water is forever torn between the intensive presence of a momentary fragment plunged into an extensive body, the fragment dependent on a whole that is itself only part of something indeterminate—each element overlapping, dependent, and fleeting. Indeed, is it pertinent that the glass of water is far more available to his senses out of a cohesive narrative context (the meal at the dinner table falls short of the idea of a solitary taste), an isolated memory present only in sensory reflection.

Proust understood the overwhelming pervasiveness of the ephemeral aesthetic in the experience of the everyday: he helps point us towards the necessary connections between the sensory and temporal. The intellect and the voluntary are the world of narrative, of cognition, of why. The involuntary and the sensory are the potent indicators of—not narrative—but temporal possibility. It should also be clear from Proust that narrative always implies too much closure within a fixed system. That is why he consistently breaks narrative's embrace and turns to alternative forms of temporal and sensory awareness. To sense is always to relate the intensive and extensive registers of time. Just as the taste of the tiny madeleine transports the narrator back to a childhood memory, the digital ephemeral finds its potential as fleeting sensory fragment that demands awareness of a greater temporal extension. Temporal aesthetics allow movement within always shifting frames and they allow for an ever shifting context. Further, because temporal aesthetics are wedded to sensory experience, they allow us to incorporate a far broader conceptualization of materiality into the digital user experience.

It is essential that we ground the experience of the temporal aesthetic in material presence so we can better understand the true embodiedness of the digital realizations and the

connections between user senses and digital realizations. Laura Marks' claim for the materiality of the virtual is a promising contribution towards establishing that presence. Not only does she incorporate the sensual register into the virtual, but she ties in the entire context of the media encounter as well. She presents a model of five intersecting factors in which the digital accesses and incorporates materiality. These factors are quantum, electronic, hardware, software, and social, and each one operates through technological and sensory links (177-191). She is specifically writing about online experience, but there is no reason why we can't accommodate a theoretical translation between online and software generated experiences. The scale of course varies, but the digital parameters are similar: database, algorithm, interface. Marks writes that digital works incorporate a relationship with the material world that...

...offer alternatives to the discourse of transcendentalism that animates corporate-futurist understandings of digital media. They insist that electronic media occupy not a 'virtual space but a physical, global, socioeconomic space. It all comes down to interconnected bodies: subatomic bodies, the linked bodies of our computers, our own bodies that act in sympathy with them, and the social body in which we all partake. These works invite us to relate to...media in terms of our shared fragility, corporeality, and mortality. (177)

This kind of criticism opens up a different way of thinking about the production of virtuality, forcing us to acknowledge, for instance, the physicality of electrons, the dollars that fund the delivery, the space of the digital production, and the "stuff" that makes up the interface itself. All of this materiality is thus wedded to the sensory *experience* of the virtual; in other words, it is through the aesthetic that the virtuality always acquires its present overt materiality.

Haptic criticism brings politics to sensing bodies. At the same time that it recognizes the materiality of the senses, it also recognizes the embodiedness of digital technology. It stretches the material across the entire spectrum of the digital realization, from electron to body to global context. This perspective helps us to understand the digital ephemeral as a

socio-aesthetic—a “will-to-awareness” of the self as a part of a larger social context. Manovich is wrong when he claims that it is only through his “creative decision-making—regarding which clips to use in the database, which parameters to select, how to weight them, and which temporal rhythm in the temporal development to follow—that the final film takes on aesthetic qualities.” (Soft Cinema Book 30) This kind of aesthetic criticism implies an aesthetic derived from content, or in implicit need of it. That kind of aesthetic theory—one in which one is able to distinguish rightness from wrongness, adhere to truth, or arrive at any sort of specific judgment—is bankrupt. Traditional aesthetics are ultimately bound up with particular knowledge structures and distributions of power, and they don’t propel us to a better kind of knowledge. A better knowledge would always give room for an experience of the contextual “now,” not in an idealist sense, but in a realistic one (hence my framing here of this knowledge as indeed only “better,” and anticipatory of the presence of power). That is what this particular aesthetic perspective aims to do through an acquisition of material presence.

The aesthetic of ephemerality is a *conditional aesthetic* that arises out of feeling bodies in a digital world. In this sense, digital ephemerality does not come directly from a piece such as *Texas*, rather it is enabled by bodies that happen to sense it. In his 2001 book Reading the Figural, or Philosophy After the New Media, David Rodowick proclaims the approaching end of aesthetics in a digital world. In its place, he argues, we live in a condition of the “figural.”

According to Rodowick, the figural is a condition of the new digital media technologies that afford new means of communication. It represents the meeting point of the linguistic and plastic expressions: “ever permutable—a fractured, fracturing, or fractal space, ruled by

time and difference—it knows nothing...of identity. The figural is not an aesthetic concept, nor does it recognize the distinction between ‘high’ and ‘low’ culture. It describes the logic of mass culture itself; or rather a culture of the mass” (x, 46). Such a condition would certainly know nothing of aesthetics as traditionally conceived, aesthetics predicated on qualitative notions of beauty and harmony for instance, or utilized as part of the discursive construction of “art.” This is, in fact, what Rodowick refers to when he suggests the ends of aesthetics in a digital world (x, 139).

Digital temporal aesthetics, on the other hand, maintain a social and ideological fluidity that is pinned to a mass of individual sensing bodies. They can exist before judgement, before rationalization, and before cognition. The temporal aesthetic refers ultimately to the realm of pre-cognitive perception. Digital ephemerality perhaps is able to acknowledge the contemporary condition of the figural while reasserting the possibility for embodied meaning-making in the experience of the everyday. Indeed, it is precisely around and through the everyday digital realization that temporal aesthetics find themselves circulating. *Texas* and other algorithmically driven digital artworks point out the possibility for that aesthetic presence. These are the aesthetics that circulate through and around our various portable digital objects, our online experiences, and the broad digital mediascape that pervades our everyday.

* * *

IV. Digital ephemerality can be a pervasive and frequent partner to any kind digital media object; indeed there are a spectrum of media artworks that can help us understand how it arises in various contexts, and how it might come to supplant the narrative reach. From 2002-2005 Paul D. Miller (a.k.a. Dj Spooky that Subliminal Kid), toured a live performance

remix of D.W. Griffith's 1915 film *Birth of a Nation*, entitled *Rebirth of a Nation*.¹³ This is a particularly interesting example because it asserts a live "author" into the algorithmic play. In the show, Miller uses digital editing software, as well as record turntables, to perform live mixes of the film along with music he composed and recorded in advance. The entire performance is projected onto three screens that form a horizontal triptych.

Each screen is capable of yielding a different image, though at times they double or mimic or repeat each other. Importantly, Miller stands in front of the screens in relative darkness, his silhouette gently illuminated by the green glow of his computer monitors, constantly moving, editing, cutting, and spinning records. When Miller cuts video tracks together, he executes digital algorithms that he has programmed into the editing software. In other words, editing patterns are pre-programmed, and he has merely to execute the command for specific patterns to take place. One might even say he is "spinning" software. This creates an interesting mixture of liveness and foresight and accident and proficiency. In fact, the particular complexity depends entirely upon the digital technology Miller uses to assemble the piece. The eternal newness and unexpectedness that constitute the ephemeral aesthetic are only made possible by and through the digital. In this sense, even though there are a variety of different media at work in the piece—and even though the piece incorporates live performance—the digital aesthetic permeates. Ephemerality is still paramount. Impossible to focus on just one image, narrative breaks down completely. Miller offers little semblance to Griffith's original structure. What was originally sacred is devalued. Instead of "reading" narrative, the event offers a sensory cacaphony. Rhythm eclipses the content of the piece, but

¹³ Paul Miller maintains an extensive website with further information about *Rebirth of a Nation*: <www.djspooky.com/articles/rebirth.html> This article refers to a live performance at Memorial Hall in Chapel Hill, NC, September 23, 2005.

it is not closed symphonic rhythm; it is the rhythm that awakens bodies and questions perception.

But to experience *Rebirth of a Nation* under the sensory drift of ephemerality is not to ignore content altogether. Quite the opposite. Narrative still functions in this piece—perhaps as a kind of anti-narrative—but I believe its strongest politics come from its aesthetics. *It translates historical narrative into a kind of collective embodied presence.* The relationship between performer, digital, and viewer/audience is primarily an active awareness of that presence, of the “realizing” of the digital realization, and of the potential behind the ephemeral *energy* of the performative moment.

Furthermore, *Rebirth of a Nation* allows the viewer to translate that presence into a greater *historical* awareness. As “Dj Spooky,” Miller “haunts” the historical text in the refashioned present digital realization. Not only does Miller assert himself as a kind of new author, but the validity of the original film as document or documentation is problematized.

Additionally, in the process, the digitality here answers to the need to question and contextualize history more generally. As the digital refashions previously fixed truths, it points towards the specificity of the technology in the larger technohistorical framework. This is not a historical “narrative” persay, rather it exists as a kind of extensive temporal possibility—an awareness of history as problematic, as present, and as contingent.

Digital ephemerality perhaps finds its greatest resonance and potential impact on the web. Predicated on the possibility of ever-shifting and fragmented figural malleability, the web consistently unfolds in a palimpsestic wash of content. The annual web event Neterotopia comments directly on the ephemeral nature of the internet with an online show of art that

deals directly with the issues of space and context.¹⁴ Artists transform the space of banner-ads, paying for time and space to promote their own particular agendas. Each advertisement/artwork follows the logic of the structural space, but reinterprets the traditional intent.

For instance, Iranian born artist Ghazel's piece "Wanted" ran from March 16-31, 2006 in a banner space on the French culture contact website SortiraParis.com (translates to GetOutParis.com). The website generally offers a series of links to bars, clubs, theatre, and other entertainment in Paris's nightlife. The banner ad runs in a small rectangle near the top of the page. "Wanted" flashes a rotating series of 1-2 second images based upon a basic algorithm. First, an image of a woman's face appears, her eyes crossed out by a black bar. Next, another image appears that reveals the blacked out eyes. Then, the word URGENT appears in classified newspaper style font, followed by a series of vital stats, her age, contact information, etc. ("Femme, 39 ans artiste, moyenne-orientale, ex S.P.F*. & R.D.D** en France..."), and a request for marriage for citizenship purposes.¹⁵ The banner ad then returns to the beginning and repeats.

"Wanted" points out the internal contradictions of the fragmented world of the internet. Again, meaning is eclipsed by the sheer density of signification. It exists as a fleeting fragment of a far greater network of signifiers all battling for perceptive attention. Despite the dramatic and critical nature of the advertisement's content, it always hangs on the edge of disappearance. But this does not necessarily speak simply to a postmodern dead-end. Instead, it points toward the value of the digital ephemeral as a site of fringe politics. The

¹⁴ www.netertopia.net

¹⁵ Abbreviations in the ad are designed to resemble classified advertisement abbreviations. The asterisks are the artist's own, and they simply reference further information within the work.

“lossy” quality of the image, the limited nature of its durability, and its relegation to a fringe banner site combine to create an interesting tension with the materiality of its creator, the money required for its operation, its form as advertisement, and the sensory requirements of its perception. Far from contradicting the ephemeral aesthetic, this tension contributes to the fragility—and hence sustenance—of the aesthetic itself. The digital ephemeral in this instance plays in a dialogue with potential narrative content, but it does not subsist entirely on that dialogue; in fact, it opens contextual awareness. The artwork speaks to the profound potential behind the ephemeral banner space as a place for reinvention, for contradiction, and subversion. This “effect” follows and parallels the aesthetic but it does not corrupt its potential. It simply redoubles the possibility for fluidity and echoes its necessarily threatened existence.

Both Ghazel and Miller’s digital art therefore demonstrate how broad the reach of the ephemeral aesthetic can be in digital culture. The presence of embodied authors, relationships to a priori realities and histories, and narrative intentions each engage with the temporal aesthetic in distinct ways. It is not my intention to disregard these realities. Rather, I want to illustrate the potential for new material sensory relationships located around a particular experience of time in the context of those realities. If post-structuralism taught us that a narrative account of user-experience will always be incomplete, then digital ephemerality as a conceptual tool allows us to reintroduce our sensory experience of time to the present experience of new media in the everyday. Whether it is the internet, digital video, cell phones, the stock market, or any number of digital technologies, the temporal register maintains a primary relationship with the digital realization. It is essential that a theory and a politics of new media take that relationship into account.

It is of course critical that we not read the aesthetic of ephemerality as merely another element in the postmodern drive towards nullity and the fragmentary dispersion of meaning. The ephemeral involves a constant temporal play, and it is this play that disengages the constant string of signifiers and engages the social, material, sensing body.

It is especially ironic then that Manovich never acknowledges the sensory roots of his “*Soft*” *Cinema*, for it leads us directly to digital media’s foremost attribute. “Softness” actually provides a way of articulating the haptic within the temporal registers of perception. It points always towards a present in a potentially political context. If we embrace the temporal aesthetic as a theoretical tool, we open up possibilities for flexible critical perspectives that resist canonization and adapt to our present embodied context.

Bibliography

- Bachelard, Gaston. The Poetics of Space. Boston: Beacon Press, 1994.
- Barthes, Roland. Camera Lucida: Reflections on Photography. New York: Farrar, Straus, and Giroux, 1981.
- Baudrillard, Jean. The Conspiracy of Art. New York: Semiotexte, 2005.
- Benjamin, Walter. The Arcades Project. Trans. Howard Eiland & Kevin McLaughlin. Cambridge: Harvard University Press, 1999.
- Benjamin, Walter. Illuminations. New York: Schocken Books, 1969.
- Bergson, Henri. Matter and Memory. Trans. Nancy M. Paul. New York: Zone, 1988.
- Berland, Jody. "Cultural Technologies and the 'Evolution' of Technological Cultures." The World Wide Web and Contemporary Cultural Theory. eds. Andrew Herman and Thomas Swiss. New York: Routledge, 2000.
- Bolter, Jay David, & Richard Grusin. Remediation: Understanding New Media. Cambridge: MIT Press, 1999.
- Brouwer, Jake, ed. Machine Times. Rotterdam: NAI Publishers, 2000.
- Burger, Peter. Theory of the Avant-Garde. Trans. Michael Shaw. Minneapolis: University of Minnesota Press, 1984.
- Burnett, Ron. How Images Think. Cambridge, MIT Press, 2004.
- Campbell, Jim. "Delusions of Dialogue: Control and Choice in Interactive Art." *Leonardo* 33.2 (2000): 133-136.
- Crary, Jonathan. Techniques of the Observer. Cambridge: MIT Press, 1992.
- Cubitt, Sean. Digital Aesthetics. London: SAGE, 1998.
- Cubitt, Sean. "Spreadsheets, Sitemaps, and Search Engines." New Screen Media: Cinema/Art/Narrative. London, BFI, 2002.
- Dargis, Manohla. "In Snippets, An America that Ducked and Covered." *New York Times* 4 Apr 2005, Late ed. East Coast: E.3.

- “Ephemera.” Oxford English Dictionary Online. 1989. Oxford UP. 15 January 2006.
 <http://dictionary.oed.com.libproxy.lib.unc.edu/cgi/entry/50076657?query_type=word&queryword=ephemera&first=1&max_to_show=10&sort_type=alpha&result_place=1&search_id=6Fr0-W7Ukws-17088&hilite=50076657>
- Feingold, Ken. “The Interactive Art Gambit” New Screen Media: Cinema/Art/Narrative. eds. Martin Rieser and Andrea Zapp. London: BFI, 2002.
- Gernes, Todd S. “Recasting the Culture of Ephemera.” Popular Literacy: Studies in Cultural Practices and Poetics. Ed. John Trimbur. Pittsburgh: Pittsburgh University Press, 2001. 107-127.
- Ghazel. “Wanted.” 2006. <www.sortiraparis.com> & <www.neterotopia.net>.
- Grau, Oliver. Virtual Art. Cambridge: MIT Press, 2003.
- Hamlyn, Nicky. Film Art Phenomena. London: BFI, 2003.
- Hansen, Mark. New Philosophy for New Media. Cambridge: MIT Press, 2004.
- Haskell, Francis. The Ephemeral Museum. New Haven: Yale University Press, 2000.
- Hillis, Ken. Digital Sensations. Minneapolis: University of Minnesota Press, 1999.
- Haraway, Donna. “A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980’s.” The Donna Haraway Reader. New York: Routledge, 2004. 7-43. Originally published in *Socialist Review* v80 (1985) 65-108.
- Hayles, Katherine. How we Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics. Chicago: University of Chicago Press, 1999.
- Jay, Martin. Vision in Context: Historical and Contemporary Perspectives on Sight. New York: Routledge, 1996.
- Kinder, Marsha. “Hot Spots, Avatars and Narrative Fields Forever – Buñuel’s Legacy For New Digital Media and Interactive Database Narrative.” *Film Quarterly* 55.4 (2002) 2-15.
- Kinder, Marsha. “Narrative Equivocations between Movies and Games.” The New Media Book. ed. Dan Harries. London: BFI, 2002. 119-132.
- Kinder, Marsha. “Uncanny Visions of History: Two Experimental Documentaries from Transnational Spain—Asaltar los cielos and Tren de sombras.” *Film Quarterly* 56.3 (2003) 12-24.
- Le Grice, Malcolm. Experimental Cinema in the Digital Age. London: BFI, 2001.

- Mairowitz, David Zane, & Peter Stansill, eds. BAMN Outlaw Manifestos and Ephemera 1965-70. Brooklyn: Autonomedia, 1999.
- Manovich, Lev. The Language of New Media. Cambridge: MIT Press, 2001.
- Manovich, Lev, and Andreas Kratky. "Soft Cinema: Navigating the Database." DVD and Book. Cambridge: MIT Press, 2005.
- Marks, Laura. Touch: Sensuous Theory and Multisensory Media. Minneapolis: University of Minnesota Press, 2002.
- Merleau-Ponty, Maurice. The Visible and the Invisible. Evanston: Northwestern University Press, 1968.
- Massumi, Brian. Parables for the Virtual: Movement, Affect, Sensation. Durham, Duke University Press, 2002.
- Meister, Jan. "The Metalepticon: A Computational Approach to Metalepsis." in Pier, John; Schaeffer, Jean-Marie (eds.): Proceedings of the international conference *La métalepse, aujourd'hui. Institut Goethe, Paris; 29 and 30 novembre 2002*, - Electronic version updated 2003. Accessed January 12, 2006: <http://www.jcmeister.de/downloads/texts/jcm-metalepticon.html>.
- Miller, Paul. D. *Rebirth of a Nation*. Live Performance. 23 September, 2003.
- Paul, Christine. Digital Art. London: Thames & Hudson, 2003.
- Perez, Pilar, ed. A Survey of Artist's Ephemera, 1960-1999. Santa Monica: Smart Art Press, 2001.
- Phelan, Peggy. Unmarked. 2nd edition. London: Routledge, 1996.
- Preston, Cathy Lynn, & Michael J. Preston, eds. The Other Print Tradition: Essays on Chapbooks, Broadsides, and Related Ephemera. New York: Garland, 1995.
- Proust, Marcel. *In Search of Lost Time*. Volumes 1, 5, and 6. New York: Modern Library, 2003.
- Rickards, Maurice. Collecting Printed Ephemera. Oxford: Phaidon, 1988.
- Rieser, Martin. "The Poetics of Interactivity: The Uncertainty Principle." New Screen Media: Cinema/Art/Narrative. eds. Rieser, Martin, and Andrea Zapp. London: BFI, 2002.

- Ryan, Marie-Laurie. Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media. Baltimore: Johns Hopkins University Press, 2001.
- Rodowick, D.N. Reading the Figural, or, Philosophy after the New Media. Durham: Duke University Press, 2001.
- Shaw, Jeffrey, and Peter Weibel, eds. Future Cinema: The Cinematic Imaginary after Film. Cambridge: MIT Press, 2003.
- Shields, Rob. "Hypertext Links: The Ethic of the Index and its Space-Time Effects." The World Wide Web and Contemporary Cultural Theory. eds. Andrew Herman and Thomas Swiss. New York: Routledge, 2000.
- Skoller, Jeffrey. Shadows, Specters, Shards: Making History in Avant-Garde Film. Minneapolis: University of Minnesota Press, 2005.
- Sobchack, Vivian. The Address of the Eye: A Phenomenology of Film Experience. Princeton: Princeton University Press, 1992.
- Sobchack, Vivian. Carnal Thoughts: Embodiment and Moving Image Culture. Berkeley and Los Angeles: UC Press, 2004.
- Sobchack, Vivan. "Nostalgia for a Digital Object: Regrets on the Quickening of Quicktime." *Millennium Film Journal* 34 (Fall 1999) 4-23.
- Trinh, T. Minh-ha. The Digital Film Event. New York: Routledge, 2005.
- Wand, Eku. "Interactive Storytelling: The Renaissance of Narration." New Screen Media: Cinema/Art /Narrative. eds. Martin Rieser and Andrea Zapp. London: BFI, 2002.
- Wardrip-Fruin, Noah, and Pat Harrigan. First Person: New Media as Story, Performance, and Game. Cambridge: MIT Press, 2004.
- Weibel, Peter. "Narrated Theory: Multiple Projections and Multiple Narration (Past and Future)." New Screen Media: Cinema/Art /Narrative. eds. Martin Rieser and Andrea Zapp. London: BFI, 2002.
- White, Hayden. The Content of Form: Narrative Discourse and Historical Representation. Baltimore: Johns Hopkins University Press, 1987.
- Virilio, Paul. The Vision Machine. London: BFI, 1994.