A Matter of Time: Digital Patina and Timeboundedness in New Media

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Abstract

The term *patina* refers to a particular quality of decay in material objects, where the decay is both a physical and symbolic property of the object. As a physical property patina is an expression of the passage of time, a visual marker of the object's timeboundedness reflected in signs of ageing and/or use. This thesis considers the implications of a digital patina, including its relevance for an analysis of the relationship between things and time or timeboundedness.

Resumé

Le mot "patine" renvoie à un degré particulier d'altération des objets, cette altération étant à la fois une propriété physique et symbolique de l'objet. En tant que propriété physique, la patine est l'expression du passage du temps, la marque visuelle de la finitude de l'objet qui se manifeste par des signes de vieillissement ou d'usure. La présente thèse aborde les conséquences de la patine numérique, notamment sa pertinence dans l'analyse des liens entre les choses et le temps ou la finitude.

Chapter 1 - Introduction - A Matter of Time

Material objects have something to say about time. They bear material witness to the passage of time, accumulating signs of decay and use, and cueing our own understanding of time and temporality. The depression in a stone step caused by many passing feet or the polished hue of an object frequently touched by human hands are compelling suggestions of the passage of time. Just as these well worn objects can trigger a sense of time passed, so can new objects reflect identification with the present, a sense of "new", or simply the absence of the passing of time. Consider new cars, houses, and manufactured objects, each with a distinctive look, feel and smell that resonate with valued meaning about being "new". Material objects tell time in their capacity to reveal a sense of temporality and an expression of timeboundedness.[1]

What objects reflect about time is, however, not always as clear as these examples of timeboundedness. Signs of use, wear, and decay can also result from an intense period of short-term use, rather than use over a long period of time. Similarly a sense of newness can be applied to something well worn, such as sprays able to simulate the smell of something new such as "new car smell". Despite this potential for a variable relationship between things and time there remains something about materiality that reflects information about

[1] The term timeboundedness is, for the purposes of this thesis, used to refer to a human sense of or need for "...extended structures on time or temporality..." including past, present, and future. The phrase "extended structures on time or temporality" is from Andreas Huyssen, *Twlight Memories: Marking Time in a Culture of Amnesia.* (New York: Rutledge, 1995), 9.

timeboundedness. We know that some classes of objects that have borne witness to the passage of time have greater value than others. For example, objects defined as antique may be valued for the quality of a specific contextualized decay called "patina". Patina is the term used for decay or wear-and-tear that authenticates the object as having passed through a *longue duree* of use. Patina is however not simply a synonym for worn or used, but a marker of where social and monetary values frame the interpretation of what is worn or used. Patina is, in sum, a valued wear-and-tear authenticated by the passage of time. While not all objects acquire patina over time, its existence and the capacity of objects to "tell time" compels my attention in this work to things and their relationship to time.

If the things of material culture as described above have the capacity to reveal something about time and value, what are the implications for digital objects and new media? Could a digital object acquire a *patina* akin to that of a copper weathervane exposed to the elements or a piece of 15th century furniture used by successive generations? What might digital materiality reveal about temporality, and by extension, about a notion of digital time? As we transpose more of our experience into a relationship with the digital, will we also come to understand a notion of digital timeboundedness?

This thesis explores the relationship between things and timeboundedness using material culture writing, new media writing, and experimentation with the creation of a digital patina. My interest in the digital patina is as a compelling metaphor for a digital expression of a sense of time or timeboundedness. This thesis is a preliminary

investigation of a cluster of possible questions about time and new media and perhaps most specifically about digital time. This journey begins with non-digital "things" or objects and their relationship to a sense of time, including how "patina" has functioned historically as a visual mark of time; this exploration leads to digital objects or things and the extent to which a patina is feasible on the digital; from here I move toward a sense of timeboundedness in digital form and the implications for a theory of new media. This research moves through material culture and new media writing and new developments in information technology applications claiming the emergence of a digital patina.

Among the key issues underlying my approach to this work is the role of timeboundedness in new media theory, and in particular the use of the *past* as a symbolic measure of what is expected in new media. The most powerful expression of this reliance on the past as prologue is a steady reliance on remediation theory as a framework in which to understand the evolution of media. Remediation argues that all media can be explained at least in part by the media forms that came before, with each new form recreating some aspect of its predecessor. While there is validity in this argument it places considerable weight on a new media's antecedents. In a way the very term digital patina remediates the term "patina" from non-digital material culture (the weathervane for example), calling up our own reflexive comfort found in familiar well-worn non-digital materiality. But does remediation itself adequately explain the use of something past in new media or is the evidence of something past in new objects expressing a different message about the role of time? Is the digital patina about recalling

something "old" or is it really about the expression of timeboundedness? A related issue underlying this work is the role of materiality in digital object discourse, and specifically whether digital "things" can show evidence of use, of ageing and of wear-and-tear.[2] Central to this research is however my view that a focus on *the past* carries significant meaning not about nostalgia per se but as a reflection of the way humans express timeboundedness.

Old is New Again: Temporality Disguised as Past

This exploration begins with the observation that the *past* seems to have achieved a renewed popularity, expressed by the rush to capture, memorialize, restore, preserve, and evaluate old things. In a variety of ways the past is back and present – not as respectful homage to historical events or a reflexive nostalgic impulse – but simply *the past* as a meaningful reference point. The evidence includes a wide range of indications of a compulsion to call on a common timebound reference point: there are formalized high-end commercial enterprises of culture, such as art auctions, drawing public attention to the allure of monetary value in old things; there are the pleas for repatriation of national cultural treasures stolen or destroyed during armed conflict – further raising a nascent public consciousness about things accumulated over time for value-sake; and there is UNESCO's 2002 record high number of 552 officially recognised heritage sites requiring urgent protection,

[2] Professor Will Straw has noted that wear-and-tear is also qualitatively different kind of natural ageing. For example wear-and-tear as a function of daily use of an object by one person has a more personalized attachment, where wear-and-tear by natural elements may reflect a more collective or unidentifiable process. From an email exchange during thesis editing to Johanne Pelletier, July 17 2005.

reminding us that immoveable "things" of the past also accrue value. [3] New memorials and commemorations recalling 20th century events such as the Vietnam and World Wars, also extend what counts as *past*, drawing it ever closer to the present and living memory of past events. A recent Canadian example of this phenomenon is the CBC production of a documentary re-enacting the experience of Canadian armed forces in WWI, in which descendants of those who served are recruited to relive the experience of their ancestors. Here the *past* is drawn in to the present with the personal involvement of family members, fusing personal and public pasts in a commemorative timebound frame.[4] Finally, there are a variety of state-sponsored heritage events themselves articulated as periods of time, such as heritage or history years, months, days and even minutes - as in the case of the Canadian *Historica* project's "History by the Minute" or "heritage minutes". These *past* projects are as much about honouring history as they are a reflection of a sense of the passage of time. In each the *past* is a marker around which we express a sense of personal and public temporality.[5]

Amidst broader public interest in things and events past is evidence of private devotion to a more personal sense of the past. There is the resilient popularity of memoir, journal and confessional writing, encouraged in part by the persistence of traditional writing instruments

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[3] Among the works citing some of these indices of a renewed interest in the past is Michael Rowlands, "Heritage and Cultural Property", in *The Material Culture Reader,* Victor Buchli, editor, (New York: Oxford, 2002), 105-114.

[4] The four hour documentary by Brian McKenna is to be aired in 2007, commemorating the 90th anniversary of the Great War (WWI). Website for documentary entitled *The Great War*, www.cbc.ca/greatwar (consulted August 5 2005).

and ways of recording of the non-digital variety, despite the flourishing availability of digital means for recording personal information. The continuing growth of an industry around genealogical research calls upon its hobby-followers to cast back to a past for the purposes of establishing a sense of identity.[6] Not unrelated to genealogy is the relatively recent North American resurgence of scrapbooks as an artefact of family and personal life. These cut-and-paste accumulations of the ephemera of everyday life aim at both retrieving memories and establishing a narrative as events happen. "Scrapbooking" is itself a hobby in which a market of products and education encourage a non-digital chronicle of both past and present.

These private practices are further supported by a discourse of appreciation for carefully selected parts of the past, where personal history is fed back into a discourse of identity politics. This discourse is celebrated in newly "olde" urban centres, museum and living history villages, and the continuing popularity of flea markets, antiquing, yard sales, and retro revivals in fashion, design and music. Finally the emergence of on-line auctions such as E-bay offer an interesting secondary market of value for old things, where non-experts participate in giving time bound objects otherwise discarded a valued new life. Whether sentimental attachment, national political gesture or a sign of a need to attach to the politics of recognition, these are

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[5] For examples, see www.histori.ca/minutes/default.do?page=.index (consulted August 5 2005).

[6] Professor Darin Barney (McGill University, Department of Art History and Communications) has noted that recording of personal events may not necessarily be for the purpose of returning to it later, but as a reflexive self-expression in the present. Comment contributed to first draft of thesis proposal, April 2005.

among the indicators of something resurfacing about the past, including a public sensibility about heritage, memory and legacy.

Are these indicators merely an honest expression of interest in the past? Is it also part of a collective nostalgic reflex compensating for something missing in the present? Are we looking back as a resistance to and retreat from the digital?[7] The expectation that the past remedies something lacking in the present is a powerful theme in material culture writing. Material culture work focuses on the symbolic properties of objects, their communicative uses and how they carry messages of status. Studying things also reveals our relationships beyond the limits of our bodies, and about the value politics and social status of objects and social life.[8] The past is important for material culture work because things ultimately cue our sense of temporality. New work in material culture theory makes a connection between the renewed interest in both the past and the accumulation of things, relying on this notion that "old" things reinforce a sense of comfort in the familiar, in things traditionally material or three-dimensional. The implication is that the valued and inconsequential objects of our past provide a comfort unavailable in digital technologies, and in digital objects that are not yet resonant as "things".

Material culture theorist Michael Rowlands echoes this view, suggesting that a focus on things past "...meets the need to salvage an essential,

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[7] Professor William Straw has suggested there is a tendency in writing about time and attention to the past to invoke "...a compensatory mechanism wherein the past offers something (a homeliness, a completeness, a coherence) missing from the present." From an email exchange during thesis editing to Johanne Pelletier, July 17 2005.

[8] Victor Buchli's "Introduction," in *The Material Culture Reader,* edited by Victor Buchli, (Oxford, New York 2002).

authentic sense of self from the debris of modern estrangement."[9] Rowlands supports this statement with a review of social theory underlining a growing anxiety about rupture or disconnection with the past, further suggesting the connection between interest in the past and post-modern discomfort or anxiety is not new. Rowlands cites Walter Benjamin labelling of a fascination with things past the "seduction of heritage", a promise to redeem the past and provide the means to revive a sense of authentic being. He also cites other works in which attention to the past is viewed as an identity salve against the post-modern malaise. Rowlands asks, for example, if our concern with the past is really a reflection of Charles Taylor's 'politics of recognition', or Derrida's 'archive fever' writ-large, each reflecting a global culture obsessed with accumulating evidence of cultural difference.[10]

My purpose is not to argue that no compensatory relief comes from retrieving the past. It is not unreasonable to assume that reflecting on the past reinforces a sense of rootedness particularly as more of our experience is mediated through what seem to be differently "rooted" digital technologies. To suggest however that all *past* focus is only a compensatory mechanism misses the critical role materiality and the past play in our negotiation of timeboundedness. Could it be that in retrieving the past we are not expressing nostalgia or a longing for something past, but expressing a sense of temporality? Could the collective and wide ranging homage to the past really be among our ways of expressing our own place in time? I propose that attention to the past, including the ways in which objects bear witness to time, is not only a reflexive compensatory action specifically, nor is it simply

[9] Rowlands, ibid., 106.

nostalgic impulse. Indicators of *past* focus are also more importantly a realization of the ways in which we attend to, value and express temporality. It's not only about finding a soft landing in a digitized present - interest in the past is really also *a matter of time*.

If this is the case, how would digital technologies, themselves no longer necessarily "new" to us, come to accommodate this trend toward capturing the past? There is some evidence that the growing concern with a material past is finding its way into digital technologies, most specifically in the emerging use and interest in *digital patina*. The term patina has been used in anthropology to describe a particular quality of decay in objects, where signs of wear-and-tear or use represent a mark of social value reflecting back on the owner of the object. In the digital realm, patina has emerged as a means of transposing a sense of the past to digital objects. Can the digital patina be a way of expressing a sense of comfort and rootedness in new media – and does this expression challenge assumptions about the exclusive comforts of non-digital media? Is the digital patina a new sign of growing familiarity and attachment to new media (akin to our attachment to the non-digital)? The temptation however in posing questions about identity, technology and conceptions of the past is the immediate attribution of the topic to sentimental nostalgia. While some digital conceptions of things past aim for a nostalgic, yearning sensibility for something lost, my focus is not a nostalgic depiction of identity, of history, or of material objects. Focussing on patina is not a compensatory mechanism for digital technologies to soften or better accommodate personal or community identity. Analysing why there is a renewed interest in the past and

[10] Ibid.

more specifically in digital conceptions of the past leads us to a deeper understanding of the passage of time – and of digital conceptions of time. If there is a post-modern malaise attributed to a lack of connectedness derived from disengagement in technology it is not only reflected in nostalgia projects, nor is every recreation of the past necessarily a product of nostalgia. The issue of interest here is how the resurgence of the *past* as focal point reveals something about our anxiety or discomfort with the potential loss of a sense of time, and how this anxiety reflects itself in the digital.

What is the digital version of a patina? Is it part of our attachment to old things, a transposing of the familiarity of material decay onto digital objects – or is it an expression of digital timeboundedness? Can the digital patina be a way of expressing a rootedness in new media, defying assumptions about the exclusive comforts of the non-digital? These questions suggest a more complex and broader investigation of how old and new connect, or in the case of material objects, how our sense of the past in material culture relates to the discourse of digital technologies. Does the history of previous forms of "new" media (paper, telegraph, radio, television) reveal we are now merely replaying a familiar tune, by reaching back to the familiar just as we move into something new? Or is the attachment to materiality different this time, perhaps a sign of our malaise with the seemingly immaterial new nature of the digital bit stream? Getting at this context would require an analysis of the materiality of new (i.e.: digital) technologies, questions about temporality both for what is considered past and for the digital, about how the indications of our renewed interest in the past are not entirely the same as an interest in history, and perhaps

how generational issues shape the approach to this topic (including my own).

Is there a reconciliation point between a sense of the old and the perpetually new digital technologies? The term *digital patina* combines notions of old and new; digital represents new media, technological change, avant-garde technology and a purity of form or function, while patina suggests decay, disuse, wear-and-tear valued either for sentimental or monetary or social purposes. Together they seem counter-intuitive or contrary, casting a dull surface on the newness of digital technology. Yet there is something compelling about the combination, something suggesting at least a surface reconciliation of new and old. The terms are interesting together as a *way in* to the larger questions about how digital technologies accommodate concepts of the "old", "historical", "decay", and materiality of the digital bit stream. Patina is, in a way, a comfortable material metaphor to frame and understand the relationship between "old" stuff and digital culture.

Outline

This thesis does not consider the technical long-term feasibility of digital preservation, or the range of format, readability, authenticity and reliability issues associated with digital media, or the nature of and potential for digital wear-and-tear. These are interesting issues but largely of a practical or technical nature and considered in detail in the archives, information management, and information technology literature.[11] Instead my critical frame is defined by material culture

[11] There is an abundance of both practical and theoretical work on these issues. The DigiCULT Reports, produced by the European Commission Directorate-General for the

theory, information/new media theory, and reports on emerging technologies proposing the advent of a digital patina.

My purpose is to consider the possible meaning of a *digital patina* in a select review of projects making claims on "digital patina" as a form of digital social trace. These projects in the broader context of reading material culture studies suggest the past and things can convene in digital form to say something relatively new about digital time. The review of digital patina technology is not comprehensive, intended instead as a way into the question of how digital technologies in particular accommodate, reflect or transpose a notion of the past or more specifically, the valued old materiality of life objects. This review suggest that these projects are not by necessity a reflexive retrieval of the past as a way of relieving anxiety in the digital – while they may achieve this purpose they are equally an interesting template around which to consider the relationship between materiality and time.

This thesis draws conceptual inspiration from material culture studies, new media theory, popular contemporary writing about the imperatives of time and temporality, and information technology industries. Ultimately the purpose of this exploration is to propose an alternative interpretation of new digital applications and specifically how and why they use the past as reference point.

Information Society outlines key issues, emerging technologies and emerging projects on digital preservation (www.salzburgresearch.at/fbi/digicult). A more theoretical but comprehensive review of the issues around the authenticity and reliability of digital records is Heather MacNeil's *Trusting Records: Legal, Historical, and Diplomatic Perspectives* (Boston: Kluwer Academic Publishers, 2000).

Chapter 2 - Material Culture's *Solid Objects* establishes a framework for considering the value of things or objects and their relationship to timeboundedness. This framing chapter outlines a selection of works in material culture studies, establishing a rationale for attention to the physicality of objects as reflections of the past, and reviews the definition of patina in traditional (non-digital objects). **Part I: Object Lessons** begins with Virginia Woolf's short story entitled *Solid Objects,* a parable about the power of found objects and their potential for renewed purpose. This story has itself been retrieved in the context of material culture and literary studies as a metaphor for understanding the invested meaning in objects or things. Material culture is used as a foundation of object lessons from which to explore the meaning not of specific objects per se but of materiality in general, particularly as more of our daily life is populated by digital objects and applications that both simulate and obscure materiality. **Part II: About Patina** details the historical background of the term patina and its relevance to material culture a material expression of time.

Chapter 3 – Digital Objects, Digital Patina considers the application of the term patina to digital objects. The use of the term patina, once singularly ascribed to the dents, cracks, chips and other physical traits on objects over time, has reappeared in the context of new digital applications. **Part I: Digital Patina** looks at digital patina applications proposing that digital code can track and provide traces over time of our interaction with both digital and non-digital objects. The projects suggest an attachment to the sense of time past associated with traditional objects, with each aspiring to have the digital represent human use over time. I propose that these projects are not solely a

material nostalgia or a will to track human/social traces but express an emerging frame digital temporality.

The valued attachment to things is connected to a sense of the past in the **Part II: Digital Things and Memory's Privileged Time**. Here I review the ambivalence expressed in writing about digital objects and time, considering the tensions between digital's transcendent possibilities and inherent frailties. Part of this tension is the suggestion by some that our ambivalence toward the past – expressed in the urgency to preserve and dismiss memory at the same time - is a sign of *memory's privileged time*, a purposeful period of anxiety and hopefulness bridged between old and new, between analog and digital media.

Chapter 4 - Conclusions About New Media and Digital Time concludes with a discussion of the relationship of digital technologies to the notions of the past seen through the terms and conditions of a digital patina. This closing chapter combines concluding remarks with a speculative consideration of a media theory of patina, proposing that there is more at stake than a remediated sense of nostalgia for non-digital materiality. While it is possible that a past focus and the metaphor of material patina is a nostalgic compensatory reflex, this chapter argues that a human sense of temporality is at the core of digital conceptions of the past.

Are we witnessing a particular phase in the development or articulation of digital past? Is this about anxiety or merely the ongoing application of digital to all things, including a conception of the past? How is time

measured in digital media – and specifically how is the passage of time counted? Time will tell.

Chapter 2 - Material Culture's *Solid Objects*

This chapter uses material culture studies as a foundation from which to consider the relationship between things or objects and a sense of time or timeboundedness. The underlying premise of this chapter is that objects play a key role in marking time, serving as a material expression of temporality, of human interaction, and memory. This deliberately selective review of material culture writing highlights the complex and compelling relationships between humans and things beginning with Virginia Woolf's short story about the secret life of things entitled *Solid Objects.* This chapter concerns itself with traditionally "solid objects" in non-digital form – and in doing so sets up the following chapters toward a consideration of how the past, and more broadly, notions of time get expressed in digital form.

Part I: Object Lessons outlines the complex relationship between things, humans, and time through material culture writing. This review suggests objects have a connection to time, memory, and their own life-cycles of evolving value. Each of the works cited suggests another way in which things or objects and their study provide formative messages about timeboundedness.

Among the key ways in which objects reveal meaning in the form of timeboundedness is in the attribution of patina. **Part II: About Patina** looks at one way in which traditional material objects (i.e.: non-digital forms) reveal and express the passage of time as *patina*. This section considers the historical definition of patina, and its role in giving material form to the passage of time. Anthropologist Grant McCracken's

work on patina characterizes patina's historical role as a visual symbol of material decay invested with social and monetary values – a role he claims is on the decline in its application to modern material objects. I introduce patina here as a venue around which to consider notions of digital time – patina may have a continuing resonance not as a social or monetary value but as a metaphor for exploring the human relationship with things and time, and specifically with the nature and quality of an object's timeboundednes. Patina then serves as a *way in* to exploring conceptions of time expressed through material objects – and ultimately how these conceptions may or may not have a digital form. This latter point concerning digital technologies and the experiments with a digital patina are considered in Chapter 3.

Part I: Object Lessons

Solid Objects

Virginia Woolf's short story entitled "Solid Objects" relates one man's fascination with inanimate objects. The story begins with characters John and Charles strolling on the beach debating politics. As John declares, "...politics be damned!" he digs a hand into the sand, working his way down further until he stops at a round smooth object and pulls out a rounded piece of glass.

Woolf's dramatic description of the discovery heightens our anticipation on John's behalf that the object found might be something greater than a discarded thing, such as a long-lost treasure or other valued object. The message is it that John's discovery of the discarded object, most likely transformed from its original shape by the waves and sand, is more than an everyday occurrence. The discovery awakens the possibility of something more from the found object, as Woolf describes,

> "When the sand coating was wiped off, a green tint appeared. It was a lump of glass, so thick as to be almost opaque; the smoothing of the sea had completely worn off any edge or shape, so that it was impossible to say whether it had been bottle, tumbler

or window-pane; it was nothing but glass; it was almost a precious stone."[12]

John's attachment to the piece grows quickly in the abbreviated frame of Woolf's story. He appreciates it for the aesthetic pleasure of its smooth texture and shape, and gives it renewed purpose as a paperweight on his mantel. Fascination with the found object leads John to seek out similar versions, compelling a broader search for round glass, and eventually other discarded objects of everyday life, including pieces of broken china. While he finds purpose in some of the found objects his curiosity leads to distracting obsession in pondering the context and circumstances in which the objects were created, used, and discarded. This abandonment to the pursuit of things ultimately leads John away from a promising career in politics, and as he commits "...himself more and more resolutely to the search...." his path leads him to a rapid economic and social decline.[13]

Woolf's relatively unknown story, first published in the *Athenaeum* in 1920, has itself been retrieved for renewed purpose in the context of literary and material culture studies. Bill Brown's 1999 essay "The Secret Life of Things (Virginia Woolf and the Matter of Modernism)" notes the increased "discursive visibility" of things or objects and their meaning to material and cultural studies.[14] The centre-piece of Brown's argument is Woolf's story, viewed as a parable about the life-

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[12] Virginia Woolf, "Solid Objects," from *A Haunted House, and other short stories*, (etext.library.adelaide.edu.au/w/woolf/virginia/w911h/chap11.html, cited April 26, 2005).
[13] Virginia Woolf, "Solid Objects," in *A Haunted House and Other Stories, collected by Leonard Woolf* (New York: Harcourt, Brace, 1944), 85.

cycle of things over time, and "...about how they decompose and recompose themselves as the object of a new fascination".[15] For Brown the story suggests that things are static in composition but highly variable in their identity and purpose, the latter shaped over time with human interaction and use. Brown goes further suggesting Woolf's story is really about a fetishized consumerism, proposing a "... cautionary tale warning against aesthetic absorption at the expense of the practical, the ethical, the political."[16]

A more recent retrieval of the story by literary theorist Douglas Mao also provides the inspiration for the title of his book, *Solid Objects,* in which Mao explores literary references to the meaning and function of things. Like Brown, Mao's reading of Woolf reiterates Brown's cautionary potential of the story but sees its deeper meaning as a journey into the human attachment to material objects. The moral of the story is that objects themselves come to acquire and reflect meaning through human interaction and association. Objects, whether discarded and rediscovered or carefully maintained and protected, have the potential to be invested with personal and social meaning. In Woolf's subtle narrative, the found object acquires a potency (or potential for greater power) in its retrieved form. Woolf's reflection through her character John speaks to this notion of an object discarded having a renewed and haunting significance,

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[14] Bill Brown, "The Secret Life of Things (Virginia Woolf and the Matter of Modernism," *Modernism/Modernity* 6.2 1999), 3.
[15] Brown, ibid., 1.
[16] Brown's argument in part is that Woolf's cautionary tale reflects her post-war experience. Brown, ibid., 4.

> "...any object mixes itself so profoundly with the stuff of thought that it loses its actual form and recomposes itself a little differently in an ideal shape which haunts the brain when we least expect it."[17]

For both Mao and Brown, the story reveals much about the complexity of our relationship with objects, but more importantly, about the ways in which things evolve over time. Things do not necessarily remain static but instead reflect the world around them, changing their form and purpose by exposure to the elements and human contact. Woolf's story is an interesting literary study of material culture, suggesting that objects have their own evolutionary cycle and have the potential not only to mark time but gain new meaning over time. It is a form of object lesson about material meaning and its evolution over time.

Objects, Time and Memory

The study of objects or things and their relationship with human activity is the focus of material culture studies. The term material culture was first used in 1843 by the Oxford English Dictionary in reference to Mexico's cultural history. Victorians had a popular meaning for the term, using it as a short-form reference to public interest in collecting expressed in personalized "curio" cabinets, a form of collecting predating civic museums. Formal academic treatment of material culture studies was focused in anthropology, becoming almost inseparable from the discipline in the 19th century. Most contemporary material culture work now acknowledges that studying objects has

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[17] Virginia Woolf, "Solid Objects," in *A Haunted House and Other Stories, collected by Leonard Woolf* (New York: Harcourt, Brace, 1944), 3.

always been an ideal venue in which to explore and relate larger intellectual projects or agenda. Anthropological studies conducted in the 19th and early 20th century, for example, used material culture as a means of measuring the extent of technical or social advance of a given group or civilization. The measures used to define social advancement were based on European conceptions of social and cultural evolution, a politically-charged strategy that had material culture studies reinforce notions of European dominance. In sum, material culture studies are often, though not exclusively, object lessons serving the purpose of other agenda.

In his "Introduction" to *The Material Culture Reader* (2002), editor Victor Buchli's acknowledges material culture studies' role in forwarding other agenda or larger projects, working as object lessons from which the dynamics of social, political and community life could be revealed. Buchli characterizes this process as the "...manner of social progress....read from material culture."[18] Material culture studies have been key to post-modern works, most famously in Foucault's exploration of the materiality of forms of social life, where architecture served as a reflection of governance structures and power. Whatever the underlying agenda, objects whether large or small, valued or incidental can serve as a reflector of human life, as evidence of social and political activity, and as a means of reflecting broader discursive agenda obscured by the objects themselves.

If material objects and their study have this potential, their revealing qualities also play a key role in examining, depicting and recalling the

past. Objects reflect key points of human life and consumption, invested with symbolic meaning and personal and monetary values. Material objects such as heirlooms, souvenirs and photographs are used in traditional recollections of the past, used as cues or reference points to call up our connection with a shared or personal history. Modern cultural institutions including in particular historical museums and archives are created and sustained around collecting, preserving and providing access to objects and papers, all things once used, valued or discarded. The collection of objects by cultural institutions does not only serve material culture studies but itself reflects a Western and European attachment to the reflected meaning in material objects. Things are said to have the power to "...evoke and establish continuities with past experience....because as a material symbol rather than verbalized meaning, they provide a special form of access to both individual and group unconscious processes." [19]

This trigger to an unconscious world suggests a key role in structuring memory, whether prompted by objects imbued with the value identification of artifact, or personal objects of little monetary value. Citing the use of memorial plaques in public spaces, Susan Engel suggests material objects are key in the construction of private memory. Consider the example of a plaque in a public space or on a memorial, imbued with the potential to cue a highly personal memory

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[18] Victor Buchli, "Introduction," in *The Material Culture Reader*, Victor Buchli, editor. (New York: Oxford 2002), 5.
[19] Michael Rowlands, "The role of memory in the transmission of culture," *World Archaeology* 25, no. 2 (1993), 141. Cited in Hugh Taylor, "Heritage Revisited: Documents as Artifacts in the Context of Museums and Material Culture," *Archivaria*, No. 40, (Fall 1995), 8-20.

or significant meaning in some while eliciting no reaction from others.[20] Attributing meaning and value to things does not however also presume human relationships with things are necessarily seamless, always valued, or specifically sought out. As Woolf's story suggests the value and use of things is a shifting enterprise, an uncertainty that makes for complex, conflicted and yet essentially necessary relationships with objects. Things are both highly valued and maligned, both the subject of vast personal and collective pride and yet often also questioned as unseemly consumerism.

This complex relationship with inanimate objects also has a resonance in studies of consumerism, consumption, and our fascination with accumulating and displaying cultural objects. Collecting things can be elevated to culturally significant practice in museums and archives and derided as material fetishism depending on the value attribution of the object, itself an evolving concept dependent on economic and cultural markets. In Walter Benjamin's "Unpacking My Library", Benjamin refers to collecting as "...a relationship to objects that does not emphasise their functional, utilitarian value – that is, their usefulness---but studies and loves them as the scene, the stage, or their fate."[21] We alternately love, demonstrate disdain, discard, wear out, hold as prize possessions and attribute elements of memory and sentiment to inanimate objects regardless of their value – however value positions itself clearly in our attention and maintenance of objects overtime.

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[20] Susan Engel, *Context is Everything: The Nature of Memory*. (New York: W.H. Freeman and Company, 1999), 150.
[21] Walter Benjamin, *Illuminations,* (p. 60), cited in Douglas Mao, *Solid Objects,* 26.

The value of objects extends beyond those considered of monetary or large-scale cultural value. The use, for example, of death or sympathy notes and cards is considered but one example of "highly personalized ephemeral instances of materialized memory", much as personal diaries letters, and poems these objects are "...central to transacting social relationships" and "...making meaning in social life." These seemingly simple objects, what Camitta calls "vernacular texts" are neither elite nor institutional writing but essential to the conduct of social life, particularly because they are distinguished from uniform and official institutional or state record forms.[22]

Memories recalled by objects also serve a progressive interest or need. Studies of Western material culture practices characterize memories as possessions to be kept, preserved and disclosed or made available (by displaying objects) as a way of showing our personal narrative. Memories too then become things "approximating an object status" – their object quality ensures they are fixed, available on recall through external cues much like any object.[23] If memory is a form of fixed entity, approximating object status, there is also the suggestion that memory and the experience out of which it arises are identical. Hallam and Hockey's study of the role of material culture in death rituals propose that memory and experience finds themselves critically connected to physical space and material objects reflected in burial rituals. In death rituals there is much as stake where, "...memories and

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[22] M. Camitta, "Vernacular Writing: Varieties of literacy among Philedelphia high school students" in B. Street (ed.) *Cross-cultural Approaches to Literacy*, (Cambridge: Cambridge University Press 1993), cited in Elizabeth Hallam and Jenny Hockey. *Death, Memory & Material Culture,* (Oxford, Berg, 2001), 5.

memory making in this context can be highly charged and heavily loaded...the threat of death is very much bound up with the possibility of oblivion."[24] Mementoes, memorials, artefacts associated with life and death rituals serve to cue and sustain memories connected to the living, reinforcing their value well beyond the life-span of use of the object. The implication is that at least part of our attachment to material objects, regardless of their context, however charged their meaning, is their reflection of our own corporeal frailty in time. The material object in this context becomes less a physical symbol of value than one of sustaining presence, identity, and legacy.

Objects and Life-cycle

Woolf's story is a compelling introduction to the ways in which objects have the potential to engage human fascination. Attending to the secret life of objects also does not presuppose however that they have a singular, static life. Woolf's *Solid Objects* is a testament to the shifting life-cycle of objects, as John's discovery of the piece of glass, once perhaps a bottle or discarded piece of glass, is retrieved to a new existence and appreciation as paperweight. The notion that objects or things transform themselves over time has been taken up in a variety of areas, including archival theory and practice that posits a series of stages in a life-cycle of documents based on use. Material culture references to this relative evolution in an object's life focuses on the "...mobility, restlessness and continuous transformations of objects".[25]

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[23] Hallam and Hockey, ibid., 3.
[24] Ibid., 4.
[25] Yrjo Engestrom, "Values, Rubbish, and Workplace Learning," (www.edu.helsinki/fi/activity/people/engestro/files/Values_and_rubbish_paper.pdf, cited May 15, 2005).

Michael Thompson's *Rubbish Theory (1979)* attempts to sort out the step-by-step functions of this mobility, where all objects in circulation are transient, until they are categorized as either rubbish or durables (objects of value). Thompson suggests the determination of "rubbish" is not the definitive end of the life-cycle but merely a staging area in which the object may be retrieved to durable or valued status. This retrieval of rubbish or junk into valued status as durable is a frequent occurrence in the evolving category of "antiques" where old things once discarded are retrieved in time to a renewed appreciation and monetary value. Thompson's key argument was that while economic factors would play a significant role in determining value there was also potential for a competing qualitative valuing of things able to retrieve junk into valued object. Capturing this road from rubbish or junk to durable or valued object is for Thompson the way to map a non-economic circulation of things over-time. In sum economic and physical life-cycles are not necessarily concurrent – for example, an object may no longer have economic value but continue to be collectable and valued for other reasons.[26] Thompson's theory is however more suggestive than comprehensive regarding the nature of qualitative values and how they are applied depending on objects concerned. For example not all objects consigned to "rubbish" are themselves equal (either in the value as junk or ability to ascend back to a place of value). His proposal about the nature of circulation and value is also not clear on the relationship between use and the consignment to rubbish or durables. Does the frequent use of an object

[26] Will Straw, "The Thingishness of Things" Keynote address for the Interrogating Subcultures conference University of Rochester, March 27, 1998, *Invisible Culture. An Electronic Journal for Visual Studies* 1999, (www.rochester.edu/in_visible_culture/issue2/straw.htm, cited May 31 2005).

affect its status in these categories (i.e.: can something be rubbish but still of non-valued use, then retrieved and valued to the status of durable? Despite limitations in the practical applications of "rubbish theory" this work does call attention to what Woolf suggests in *Solid Objects* – that no object is static in and over time.

Part II: About Patina

Some objects as they move through their life-cycle will acquire signs of decay that have varying attributions of value. The term *patina* refers to a particular quality of decay in material objects, where the decay is meaningful and valued physical and symbolic property of the object. As a physical property patina is an expression of the passage of time, a visual marker of the object's timeboundedness reflected in signs of ageing and/or use. The green tint of a copper weathervane from having been exposed to natural elements, and dents or wearing on a piece of furniture from frequent use may qualify as patina. Decisive application of the term is however not solely about these visual signs of the passage of time and/or wear-and-tear. While all material objects sustain some visual sign as a result of use or ageing, patina only applies when the object and its decay reflect social and monetary values defined by the surrounding political, social and economic system. As a symbolic property patina expresses the value attributed by the context in which the object is used, maintained and valued. The green tinted copper weather-vane, dented furnishing, or chipped serving dish demonstrate their age and use over time but have patina only if the social and economic system supporting these objects value the objects and reflect this value on their owners. This distinction aligning visual evidence of timeboundedness with social and economic value is the key to understanding the historical foundation of patina.

Defining Patina

Anthropologist Grant McCracken describes patina as one of the most meaningful ways of expressing class distinctions and controlling social mobility prior to the 19th century. Declaring an object had patina called attention to the object's possible use over time expressed in physical signs of decay such as discoloration, marks, dents, or signs of wear-and-tear. More critical however was patina's role as powerful visual clue and symbol, marking both the object and owner with social status. The implication of the object's patina was one of long-standing use and ownership, suggesting a family or individual's long status within a class structure. Though not explicitly explored by McCracken, patina could not be achieved through frequent short-term use (as in an object showing decay as a result of daily vigorous use over a week, month or year). Patina was historically aligned with the passage of time, with the decay or patina acting as the symbol of the object's life-cycle over time.

McCracken notes that patina was among the forms of status regulation and authentication in pre-18th century Europe – and among the most powerful and resistant to falsification. While objects of value could be purchased to suggest a status claim, only the time worn object, displaying several generations of gentle use could add certain authenticity to a status claim. McCracken cites England's 16th century sumptuary legislation (which declared status forgery illegal and punishable) and the encoded cultivation of certain types of knowledge (codes, dances, clothing etc) to designate ways of belonging (and excluding others) as related status regulators. Patina was an important authentication tool in this class system, relying on visual indicators

visible to the eye from a distance – but only those reflecting the passage of time would be considered authentic. Patina, and the way to achieve it, was also something best understood by those already belonging to the elite – and little understood by those on the outside. McCracken calls this use of patina "a hidden code" to status - a tool of social gate-keeping defining social status and conferring value on owner and object. Historically, the declaration of patina relied on the following sequence of assumptions: the patina was in direct proportion to the object's age; the age of the object was in direct proportion to the length of ownership; and the ownership reflected the owner's discretionary income and therefore social status.

Physical signs of age in Western societies have held symbolic meaning, not as a method of status claim, but as a means of legitimizing existing status claims. McCracken explains,

> "...the surface that accumulates on objects has been given a symbolic significance and exploited to social purpose. It has been seized upon to encode a vita and unusual status message. What makes this message so unusual is that it is not, strictly speaking, concerned with claiming status. This relatively simple, even banal, message is left to other, more mundane, aspects of status symbolism. Patina has a much more important symbolic burden, that of suggesting that existing status claims are legitimate. Its function is not to claim status

but to authenticate it. Patina serves as a kind of visual proof of status."[27]

Like a contemporary passport or similar form of authenticated proof, patina had symbolic visual significance supporting a status claim. The designation of a privileged class status could be confirmed by the possession of objects bearing long-term use, defined by the object's wear-and-tear or patina. In this historical context the purpose of patina was to delineate class and social status by virtue of time-worn objects with specific values. While patina continued to be used as a term describing some valued old objects, its role as a status marker was largely diminished by the 18th century, overshadowed by the evolution of consumerism and increasing dynamics and availability of fashion as a status symbol.[28]

McCracken's work on the history of patina, explored in the context of a history of human consumption, does not consider the role of patina as a social trace or its role in negotiating a human sense of temporality. McCracken however notes that the modern use of patina draws attention to this notion of social historical trace while delineating a social class status. Citing studies by Warner and Lunt (*Yankee City*, the study of class status in America), McCracken notes that objects passed down through generations continue to hold their place as symbols of status – however the continuing use of patina more broadly is in references to objects evaluated as antiques. For McCracken, if

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[27] Grant McCracken ascribes a key role to patina in his history of consumption and its relationship with material culture, in his *Culture and Consumption. New Approaches to the Symbolic Character of Consumer Goods and Activities,* (Bloomington and Indianapolis: Indiana University Press, 1988), 32.
[28] McCracken, ibid., 39-41.

patina persists it "...does so in tiny social enclaves where it keeps the gate with all of its former perspicuity but precious little of its former glory."[29]

Patina's Limits/Contingencies

From this historical overview of the nature of patina, what additional conditions would be relevant to its application more broadly to all material objects? If the definitive mark of patina is the passage of time, can any ageing object achieve patina when valued by a social or class structure? Is the application of patina no longer relevant? In principle patina could be extended to refer to any form of wear-and-tear appearing immediately after fabrication. However application of the term comes with a series of limitations or preconditions. First the term does only seem to be applied to man-made objects and not for example eroded river-banks or the creation of rock formations.[30] While patina may be created by other than human use, its meaning tends to refer to the accumulation of human trace use rather than for example natural wear-and-tear from the elements. Patina also relies on use over time, where the wear-and-tear is earned over the passage of time and expresses itself as a material timeboundedness.

An additional qualification relates to how widespread the term patina is applied. Patina is rarely conferred on mass produced materials but tends to be selectively applied to materials or objects whose value attribution is already high or where the expectation of accrued value is

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[29] McCracken, ibid. 43.
[30] I attribute this interesting distinction between manufactured and natural physical changes to fellow student Tom Wilder (Department of Art History and Communications, McGill University, Spring semester, 2005).

great – as in hand crafted objects. However not all craft objects are subject to a valued attribution of patina, nor is all patina, a visual symbol of use, considered valuable. The determination of value in association with patina also has the potential to shift over time, with discarded objects brought to new purpose suddenly rediscovered to have a valued patina. The attribution of patina is then a speculative enterprise relying on shifting preconditions of social and economic value and the anticipation in continuing value. Speculation about temporality (assuming the long-term) and value (hopeful it will be ever-increasing) are hallmarks of the attribution of patina. With this speculation is the expectation of accrued and extended long-term significance for both the object and owner – expectations that rely on assumptions about the passage of time and the promise that objects will continue to accrue or at least hold their value with the passage of time. While patina may, as McCracken suggests, be relegated to more restricted uses than social status authentication, could its relevance to materiality, time, and value have something renewed to offer? If patina is the material expression of timeboundedness and speculative value can it be retrieved as a broader metaphor for exploring both materiality, time, and value particularly in relation to new digital technologies?

An additional significant qualification regarding patina is that it has not traditionally been used for documentary "objects" such as correspondence, diaries, photographs or more obviously digital objects. The source of the term patina has been attributed to the Italian *patena*, (referring to a shiny varnish for shoes), and the historical and popular use of the term remains in association with material objects and not

documentary objects (such as paper based or digital forms of communication).[31] McCracken's work relies exclusively on three-dimensional material objects of social, economic and private life excluding paper and documentary materials. The exclusion of documentary evidence of human life and interaction such as correspondence, diaries, photographs, journals, and other types of archives is at first a curious omission. Among the possible reasons is that anthropologists and material culture works focus on traditional material objects to the exclusion of textual documentary sources. Additional possible reasons include the expectation that documentary sources display their dates either explicitly (as in the date at the top of a letter) or implicitly (by virtue of the document or photographic image content). Documentary sources also have other indices or signs of the passage of time, such as the way some paper will show aging in the form of brown spots or "foxing" or where the emulsion or surface of a photograph changes colour over time.

This selected review of material culture writing underlines the significance of things or objects, their persistence and evolutionary quality, and their role in marking time or ensuring a sense of human timeboundedness. This framing chapter situates an attempt at a media theory of patina in the world of materiality, relying on the way things provide a visual and tactile basis for memory-based identification, show traces of use, and demonstrate properties reflecting daily life. Chapter 3 considers the emergence and experimentation with a digital patina

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[31] Phoebe Dent Weil, "A Review of the History and Practice of Patination," in *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, ed. Nicolas Stanley Price, M. Kirby Talley Jr. and Alessandra Melucco Vaccaro (Los Angeles: The Getty Conservation Institute, 1996), 399.

and the implications for how digital objects compromise or enhance our marking of time.

Chapter 3 - Digital Objects, Digital Patina

How do we apply the object lessons of material culture studies to digital objects? What are the defining characteristics and limitations of digital materiality and how, if at all, might digital objects mark time? **Part I: Digital Patina** looks first at emerging experiments with and references to a "digital patina" and its implication for a sense of digital timeboundedness. This discussion extends the exploration of time and materiality to propose that the digital patina is not only a reflection of our attachment to materiality of traditional objects, but to a material sense of temporality or timeboundedness.

Part II: Digital Things and Memory's Privileged Time looks more closely at material culture and new media writing about digital materiality and its relationship to time. In this work there is a tension between viewing digital objects and media as transcendent of traditional materiality and their ultimate core dependency on material contingencies. There are also works suggesting digital media and their objects obstruct and compromise memory and a sense of time – and that ultimately they are secondary to the timeboundedness of traditional materiality. Digital objects are seemingly beyond three-dimensional boundaries, free of the limits and frailties of traditional objects, or are they? While digital technologies promise a transcendent immaterial world on the screen their ongoing life including the ability to be seen, played, and used remain grounded in traditional material objects. Digital objects may have a surface transcendent quality but are ultimately ground in the software and hardware required to create

and use them. How this tension is resolved and what it might suggest for a theory of digital time and new media is considered in Chapter 4.

Part I: Digital Patina

Patina has resurfaced in the digital realm not as a social status signifier, but as a mechanism for encoding use of an object. This notion of patina as history of use rather than social symbol defines patina as the effect or result of human action on physical space and the objects they hold or contain. Roboticist Eric Paulos goes beyond this definition, calling patina as a pre-condition of human activity, open and available to all. For Paulos, any human movement in space has the potential to leave a trace on objects. His examples include a range of things discarded and left affixed to everyday objects, calling patina "....stickers, graffiti, tagging, scuffs, wads of discarded gum, and other signs of human activity and communication."[32] The implication is that any interaction produces a human or social trace in the form of visible evidence wear-and-tear. For Paulos and his colleagues at Intel labs, this social trace conveys important information about a space. Much as a pile of discarded cigarette butts marks signals where other smokers have been, Paulos' digital patinas would signal use of public spaces by leaving messages to those who come after. Whether haphazardly discarded (as in the pile of cigarettes) or deliberately set (as in the case of graffiti or other public markings), Paulos views the patina as a critical moment of connection to a "...shared sense of community."[33]

The Intel/Paulos project proposes that a digital patina would reflect social traces on objects or spaces by encoding successive uses in a

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[32] Cited in "Eric Paulos, the Playful Roboticist", by Mark Frauendfelder, *The Feature*, Wednesday June 25, 2003, (www.thefeature.com consulted January 31 2005).
[33] Ibid.

readable/alterable digital application. The social trace or history of use would be recorded and read using Radio Frequency Identification (RFID) tags (electronic components that can transmit a short string of data when a scanner is passed over them) attached to material objects. Imagine carrying RFID tags (described as dot-shaped band-aids) and leaving one attached under the table in a restaurant where you happen to have eaten a superb dessert.[34] The tag would provide a URL to your review of the dessert so that other patrons (presumably with a wristwatch scanner) could have the benefit of your recommendation. The potential for a build-up of RFID tags on objects, (under restaurant tables) is a form of patina or surfacing of use expressed digitally. Yet this particular example is interesting for its delegation of the term social trace to a social communication of questionable value. Sharing this level of social trace with others is arguably significant but may be part of a larger trend toward around persistent continuing communication (cell phones, PDA's) – part of our growing adaptability to being in touch, to share, and to communicate at all times.

Research at MIT suggests another form of digital patina as a surface layer of sorts on digital objects themselves (rather than spaces and traditional non-digital objects). One such project, explored in a 1998 MA thesis by Ansel Schutte, proposes digital patina as a way of capturing use and human impact on digital objects. While the focus of this study is a review of applications designed by the author with little reference in social or cultural theory, the author interestingly identifies

[34] The Eric Paulos interview in *The Feature*, Wednesday June 25, 2003, www.thefeature.com uses the example of eating the best crème brulee and feeling compelled to share this information through an RFID tag.

his own motivation for the study as anxiety resulting from loss of contact with social traces – and a fascination with decay. Schutte's inspiration was his own awakening, as an MIT graduate student, to the seemingly pure and pristine nature of digital media, showing no or insufficient traces of character or of human interaction. He argues this loss of social trace in accentuated in digital technologies which are devoid of decay or any sign of wear-and-tear. For Schutte, the value of a digital patina is as a history of use, a compelling textured history encoded in digital form, as a way to

> "...inform, involve and subtly unite distributed audiences. Like an Old Victorian house, people can experience Patina-enhanced digital information: benefiting from and appreciating how others have used it, feeling a social presence in its textured history, and assigning value as it is worn-in."[35]

The MIT/Schutte project proposes a digital taxonomy of wear-and-tear by designing digital objects (files, applications, documents, games, environments, etc) to reflect audience interaction as social traces. The digital patina in this case refers to a methodology for mapping a history-of-use on digital objects, so that a "patina-enhanced" web site would be a site that tracks, displays and captures over time the use and types of users.

Unlike the largely unpredictable nature of wear-and-tear on material objects (the green tint of weathered copper, a dent or chip on an

object, or the curl and fading of paper), the digital patina is a pre-conditioned form of materiality, expressed as a technological application encoding and decoding traces from human interaction. An additional example of this type of coding is in website design, as in the example of the BBC referring to website colour changes reflecting use as a digital patina.[36] Similar metadata traces of use would be recorded behind the scenes in wikis (such as *wikipedia*) in which users can add or delete content while preserving the pre-revision version of the document. Like traditional patina, the digital version, at least for the function of web sites and select applications, is visible to the human eye, reflecting use and presumably collecting the data or trace of use over time.

This delineation of a digital patina or history of use operates in a context of technological research on interactivity in digital objects and specifically on recording user reactions and use of digital objects. This work is clustered around the development of "history enriched digital objects" or HEDOs, pioneered by AT&T Labs Research divisions in the early 1990s. HEDOs defined the history-of-use as a form of commodity that could record, store and display information about a digital object. The most commonly available forms of this type of application are software editing tools, where multiple users can view the results of other user intervention – something akin to a "track changes" software function in Microsoft Word and comparable displayable editing functions. While the purpose of these tools was to encourage positive

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[35] Ansel Arjan Schutte, *Patina: layering a history-of-use on digital objects*, Master of Science in Media Arts and Sciences thesis, (MIT, 1998), 7.
[36] References located based on searches conducted January 21 2005: BBC Press Office, "BBCi homepage gets a multicolour facelift" www.bbc.co.uk/pressreleases/2002 (consulted January 20 2005).

results from having users see others input (and improve their use as a result), the early developers of the HEDO drew analogies from notions of physical wear-and-tear on the object itself, proposing to mark the digital object with use as social trace, resulting eventually in a digital sense of something worn – the precise nature and implication of "worn" in this context is not considered by HEDO research or by the MIT research. Indeed without more information on the nature of social trace as resulting digital wear-and-tear we are left to assume that decay in digital terms is not physical in the material sense but merely another form of data, available for collection and reuse.

The availability of this accumulation of data raises questions about intended use, security controls, and privacy. Will the digital patina-ed surface of public spaces also be viewed as a form of public surveillance (in the guise of sharing information)? Proponents of the digital patina projects claim the data accumulation serves primarily to "...leverage...simple behaviours in order to assist others and develop more collaborative practices..."[37] Results fulfilling this promise are not yet available – and despite the intent to share the projects as currently defined express a remarkable naivete about data security and privacy. These projects also seem to be grasping at a sense of digital time, where the compulsion to remain in touch with the past is secured pro-actively in a coded message in the present. According to Schutte, the digital patina achieves an encoding of personal significance linking personal narrative to material forms and using them as cues to personal history, memory, and meaning.

[37] Schutte, p. 26.

Digital Patina's Limits/Contingencies

Do these projects reconcile a sense of old and new in information technology? The work to date does not suggest a profound consideration of the role of time in digital technologies. These projects do however, albeit unknowingly, attempt to define digital time within a discourse about the opposite poles of decay and digital technology. Industries that produce digital technologies do not dwell on old versions, nor are they transparent on matters of digital wear-and-tear. The prevailing ethos of this industry favours rapid renewal, producing new versions of hardware and software in lieu of managing and sustaining older versions. In this context these projects present an interesting tension between a propensity toward all things new and the digital patina's call back to the past. Instead of addressing this issue the proponents of the digital patina offer a flourishing optimism that digital technologies can be adapted to all purposes, including a coded simulation of ageing without visual or sensory evidence of the decay associated with non-digital objects. This flourishing optimism extends to their relative silence on the true nature of digital decay and its relationship with technological obsolescence.

The silence on this tension between old and new and media obsolescence is a concern for a realistic assessment of patina in the digital. The nature of technological developments suggests nothing less than the immediate dismissal of anything other than the newest and most avant-garde. New versions of software and hardware quickly meet obsolescence and this obsolescence usually refers to a certain and immediate end (and not consignment to an attic or filing cabinet

with other infrequently used old things). There is an *all or nothing* quality about digital media – they either work or suddenly do not, and if we are fortunate, they will only suggest a problem with a message on the screen revealing something has gone awry behind the screen. Among the challenges in defining what constitutes digital wear-and-tear or decay is the digital's dependence on a media form that does not reveal physical decay visually. A dent in an object, worn fabric or even a bruise on the skin is visual markers of interaction, of wear, and of eventual decay over time if untended. For digital objects their sustainability and the extent to which they remain intact as workable objects remains behind the scenes, invisible to the human eye, concealed by the desktop or interface available.

Digital objects, such as text or image files, will not change in appearance on the screen assuming they remain accessible or readable. Other changes may substitute as visual signs of use, such as name changes, versioning data (associated with when the file was changed, indicating date and time of last editing), as well as software embedded metadata about the file, such as "properties" menus indicating when the file was used and edited. Digital objects in this context are not unlike certain material objects, such as antique cars, where appearance provides little direct indication of whether the car works or not. The difficulty with digital objects is separating the object's decay or wear-and-tear from the necessity for support media on which to read, play or use the object. If digital objects do experience wear-and-tear over time estimating this decay is made complex by the objects close reliance on media supports.

The research projects outlined also do not appear to understand the traditional function of patina as social symbol, favouring instead a definition of patina coded communication suggesting use. A truer definition of digital patina would have to consider the faltering digital object, subjected to over-use and potentially only readable as corrupted incomplete data (if readable at all). The digital patina proposed by the Intel and MIT projects is really then not about wear or tear or functioning under duress. Perhaps the silence on these issues says much about the economic interest of the projects, each likely fixed more acutely on economic gain than social theory. In these projects wear-and-tear in digital objects is defined differently, or if it exists at all it is defined only by tracking use overtime. The digital patina in these projects reveals a history of use but never disrupts the digital's pristine materiality. Nothing is dented, corrupted or worn, but merely coded in at the start as a pre-condition of use. For these forms of digital patina, history of use is the surface layer defining patina, requiring careful coded planning, and never left to unpredictable material decay alone.

There is one additional element not considered in these experiments with digital patina. There is a fusion of notions of wear-and-tear and social traces (or history of use) by radically compressing notions of time. Indeed it could be argued that the digital patina research and expectations of HEDOs compress the experience of time, defining what is past as the short moment between clicks of the mouse or the time between users of a digital object. There is no sense of *longue duree* here or complex social context, but a frame of activity compressed to fit a sense of digital time. For non-digital objects, decay or wear-and-

tear is usually just a matter of time, where time is marked by generations, not seconds. Digital patina projects suggest a different conception of time, accelerated to fit the speed and just-in-time quality of digital technologies. Despite different trajectories of time both forms of patina do depend on the passage of time, however long or abbreviated to take effect on the object and in this sense the digital patina projects are true reflections of the historical sensibility about patina. Connected to this altered sense of temporality is the nature of wear-and-tear and values associated with the physicality of patina. Chips, cracks, dents and discoloration reflect use and have the potential to enhance a non-digital object's value – traditional patina in a sense relies on ageing and the accumulation of decay to accrue value. However accrued value, as reflected in patina, may prohibit use of non-digital objects - if only to preserve the object's physical state and delay further deterioration. The digital patina projects described here propose the opposite, where the digital patina exists as a mechanism for encouraging and enhancing use, rather than diminishing use over time. Does this also mean that value accrues differently or is accelerated along with digital media's abbreviated sense of time? The projects discussed here reveal nothing specific about value claims in the digital patina – apart from the sense of social enhancement derived from marking, sharing, and developing social traces.

Indeed an issue not clear with digital objects is the extent of their qualitative and quantitative values over time. Do the private engagements provided by the Intel project (for example, my message about dessert to the next diner) suggest a patina with either or both types of value? With traditional, non-digital objects, the nature of

value requires time to develop and estimate (i.e.: patina on a traditional object requires decades to develop) and will ultimately rely on speculative value rather than a certain outcome. In the truncated sense of time for digital patina, what will constitute a reasonable period in which patina is to assemble value, if at all?[38]

One of the central issues is the shifting nature of valuing brought by the increasingly mixed complexity of gift and exchange commodities. Material culture theorist Fred Myers suggests a re-evaluation of the relationship between material culture and exchange theory – specifically that the difference between gift and exchange commodity be displaced by "...emphasizing the materiality of exchange valuables rather than their social function in reciprocity or their purely symbolic meanings."[39] The value in objects in this new sensibility is not purely economic but one defined by a form of social capital (Bourdieu) or where the commodity-treasure is used.[40] The blurring of lines between high and low art, of economic and cultural capital, and the popularised valuing of things in venues like the *Antiques Roadshow* suggest knowledge of material culture value is open to all. Thompson's *Rubbish Theory* offered a similar argument, encouraging a non-economic or at least not exclusively economic sense of value for objects – and more critically, to view all objects as having an evolving purpose over-time. Each of these issues complicates the question of value, particularly for

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[38] Fred Myers suggests this issue of how to understand or frame questions of value is key to new material culture work, and in particular to the complexity in understanding new relations within gift and exchange commodities. See Fred R. Myers, editor. *The Empire of Things: Regimes of Value and Material Culture.* (Sante Fe: School of American Research Press, 2001).

[39] Fred R. Myers, "Introduction", in *The Empire of Things: Regimes of Value and Material Culture* Edited by Fred R. Myers. (Sante Fe: School of American Research Press, 2001), 3.

[40] Ibid.

how we engage, estimate and understand the value association of digital objects. In sum, Myers suggests that these questions are of greater importance, as "...objects move through space and time with greater rapidity than ever before, breaking down the analytical categories that for so long have been used to contain and define them theoretically."[41] The valued assessment of digital objects is all the more complex and uncertain.

Among the ironies evident in writing about digital technologies is the conviction of writers that digital technologies possess both an infinite capacity to transcend everyday problems and an inherent fragility. Technology theorist and developer Jeff Rothenberg has suggested the following example of technological fragility as a parable about a digital future. In the year 2045 Rothenberg's grandchildren explore the attic of his house to find a letter attached to a CD indicating the disk contains the document with the key to his fortune. Rothenberg explains that the children have likely not seen a CD, except in the movies, and discover the media for reading CDs are now merely obsolete hardware and software. How will they read the digital document and retrieve their fortune?[42] Albert Borgmann's use of this story in his book *Holding On to Reality* to establish a series of points about the fragility of digital technologies. First they are physically fragile because their media become obsolete. This fragility is however a result of their "social fragility" caused by "...our heedless rush toward more powerful

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[41] Myers, ibid., 12.
[42] Albert Borgmann, *Holding On to Reality, The Nature of Information at the Turn of the Millenium,* (Chicago and London: The University of Chicago Press, 1999),195.

technologies that condemn older ones to obsolescence and illegibility."[43]

There is also, Borgmann notes, a related structural fragility in digital technologies due to the complexity of how technological information is constructed. Citing the example of the way telephone systems are managed with millions of wires and infrastructure below the surface of visual detection, Borgmann suggests there is much behind the scenes in the digital. This hidden complexity will result in some detection of errors, of decay, or other technical problems but the majority of issues suggesting ongoing decay will elude discovery until the digital media completely fails. Borgmann's characterization of this point proposes the worst case scenario resulting from structural fragility where "...some bugs will escape detection and can cause communication and financial systems to break down, airplanes to crash, and patients to get killed."[44]

Digital technologies also have a cultural fragility, dependent on other forms much as a parasite is dependent on a host. Borgmann's example is the layout and aesthetic quality of office software that mimics the terminology and functional elements of the non-digital desk-top – including the use of the term "desk top". For Borgmann this reflection of the non-digital world in information technologies suggests a dependence on the material where, "The actual world will always be the school of experience and the storehouse of material for more or less virtual pleasures."[45]

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[43] Avra Michelson and Jeff Rothenberg, "Scholarly Communication and Information Technology," *American Archivist* 55 (1992): 295-301, cited in Borgmann, 195-196.
[44] Albert Borgmann, ibid., 196.

Despite these frailties digital technologies are not unsustainable over time. Early research and testing of digital records preservation suggests that keeping digital records requires ensuring the data or objects are readable, which in turn requires attention to migration to new formats to ensure the data can be read. The challenge in this context is sustained awareness and economic support to ensure that digital objects are maintained – unlike their non-digital counterparts they cannot be consigned to a storage closet for rediscovery and use years later. Thompson's proposed circulation of goods from transient to rubbish to durable would not apply itself easily to digital objects, whose retrieval from rubbish could not be guaranteed without migration efforts to new media.

The digital patina projects outlined in this chapter suggest that some sectors are responding to a wish for digital objects to have traces. This response is part sentimental, part economic advantage and certainly part ominous social incursion in the case of the public use of RFID tags. The latter has resonates with concerns for the use of RFID tags in surveillance, where the coded tag tracks my own activity over time and or compiles data on my activity. There is no obvious surveillance motif in the digital patina projects outlined; however this may be more a reflection of the absence of social analysis in the projects. All forms of patina, digital and non-digital, reflect evidence of human contact – digital patina however alone has the potential to personalize the trace in association with an individual and sustain the coded trace over time.

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[45] Borgmann, ibid., 199.

Part II: Digital Things and Memory's Privileged Time

Among the thematic focal points in material culture studies is the consensus that materiality plays a critical role in the human expression of memory. Regardless of their value attribution, valorized or discarded, material objects have the potential to cue imagination and memory, and may themselves act as representations of memory. Objects are part of a common table around which human engagement with the past is negotiated, crafted, remembered, and stored for future use.[46] How does this attachment to materiality find a place in digital media? A question not fully considered in the context of material culture studies is how object lessons are to be continually derived from objects in the digital realm – the question is then, does the apparent virtuality of digital media diminish the *thingness* of things?[47] What is considered past or even material in this context? Does our increasing use of digital technologies distance us from this materially triggered sensibility? Will digital objects carry the same connections to a group unconscious?

Vinegar Traces?

The search for a digital sense of timeboundedness will ultimately have to compete with our own real expectations of digital media's frailties, software and hardware material dependencies, and lingering

[46] The notion of a common table is taken from Darin Barney's reading of Hannah Arendt in "The Vanishing Table, or Community in a World That Is No World," in Andrew Feenberg and Darin Barney, editors, *Community in the Digital Age. Philosophy and Practice.* (Toronto: Rowman & Littlefield, 2004), 31-52.

attachments to a sense of pre-eminence about non-digital objects. Few works associate a sentimental attachment to digital objects at least of the order attributed to the non-digital. One such ode to the fixity and security of everyday non-digital objects is found in David Levy's *Scrolling Forward*. In a chapter entitled "Meditation on a Receipt" Levy argues for the value of a cash register receipt (a small strip of paper) from Steve's Deli and Catering for something purchased on October 29 1997. Though admittedly not the Magna Carta or Rosetta stone, the receipt represents for Levy something in great abundance (not unlike digital media), taken for granted but highly representative of a culture, a historical moment, and a personal story. Levy lays claim to the sacred in material objects and documents in particular, proposing they carry,

> "...a protest against the passage of time, against change, and against human mortality. The very fact that we have *tried* to hold our voices and our message fixed in stone or in some other medium is surely a testament to a powerful longing within us."[48]

His argument seems at first a sentimental ode to the incidental paper in our lives, but develops to consider the complexity of digital "things" or "objects" and their fragility over time compared to the relative simplicity of abundant, common paper records. Levy finds credence in ascribing some material qualities to digital objects, citing their complex split identity formed by with a visual readable version and the code

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[47] The term "thingness" is inspired by Will Straw's use of the terms in Will Straw's "The Thingishness of Things".

behind the visual.[49] Still within this materiality is a key limitation for Levy, the digital object's close and necessary relationship to manufacturing technologies, "...requires an elaborate set of technological conditions – hardware and software – in order to maintain a visible and useful presence."[50] For Levy digital objects represent a new material terrain, but one that continues to call on the material and symbolic existence of other non-digital objects. Is it possible we do not yet have sufficiently encoded social practices for accommodating these objects? How will digital objects sustain their own life-cycle and evolve with accompanying values over-time? Levy's paper receipt is an old media reminder of the ways in which materiality – even in its digital form – is deeply contextual, and fixed in time and place.

In *The Social Life of Information* co-author Paul Daguid tells the story of having used the archival records of a 250-year-old American business, including correspondence dating from the American revolution. Daguid describes his experience of using these records with a comfortable familiarity, relishing the romanticism of using old wood containers and dusty letters. When another historian joins him at the table Daguid notices the colleague not only does not wear a mask (as most do to protect from the dust), but carefully sniffs each of the documents.

Daguid explains that the colleague was a medical historian studying 18th century outbreaks of cholera. When the disease appeared in a town all the letters would have been disinfected with vinegar to prevent

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[48] David M. Levy, *Scrolling Forward. Making Sense of Documents in the Digital Age.* (New York: Arcade Publishing 2001), 189.
[49] Levy, ibid., 138.

the disease from spreading. Evidence of a vinegar scent on the remaining evidence of life in the town, such as archival records, would also reflect the appearance of cholera.[51] This unconventional use of the paper's scent as evidential source focuses on the physical condition of the paper as object, rather than its information content. Daguid's moral of the story is that material objects, like the paper letters, reveal incidental traces in addition to whatever information/evidence for which they have been preserved. These indicators are not strictly speaking patina but suggest that all objects, including paper and other traditional material objects have the potential to convey incidental trace evidence about past use – attributes not yet available to use in digital objects.

Digital Transcendence

Where some works suggest a sentimental loss of value in the digital, there are equally strong messages about the ability of the digital to transcend all impediments. The rhetoric surrounding the evolution and continuing development of digital technologies suggests material considerations are secondary to the digital's production of a transcendent sublime. Among the most compelling recent analyses of our cultural tendency to view the digital as transcendent is Vincent Mosco's *The Digital Sublime: Myth, Power, and Cyberspace.* Mosco demonstrates how the rhetoric surrounding digital technologies depicts them as history-ending sources of near-mythic power, as repositories

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[50] Levy, ibid., 152.
[51] John Seely Brown and Paul Daguid, *The Social Life of Information.* (Boston: Harvard Business School Press, 2000), 173-174.

populated by stories that help us transcend the everyday.[52] Citing James Carey, Mosco further reminds us that digital technologies have inherent to them the promise of something new, consistently surpassing what came before, invoking "...the same sense of profound possibility...".[53] In this context little that is deemed old or simply not "new" is of less value.

More specific writing on digital technologies and their representation of the past has tended toward relying on the notion of remediation, suggesting that each new media form reflects something of its predecessors.[54] In addition to this reflexive mirroring, digital technologies also provide access to notions of the past through visual reconstructions of historical experience (as in virtual models of living history sites) or in compilations of records and artefacts (as in virtual exhibitions). According to Will Straw, the limitless nature of digital storage capacity provides a venue in which to reconstitute otherwise inaccessible things from the past, recontextualizing disparate things together with added meaning and value.[55] Straw uses the example of a website offering replicas of old perfumes, a commercial venture that also serves to bring together an otherwise ignored collection of objects. The attention to digital storage and memory capacity is a significant point, recalling Frances Yates' early work on memory as the space in

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[52] Vincent Mosco's *The Digital Sublime,* (Boston: MIT, 2004), Chapter 3, "Cyberspace and the End of History," explores the end of history themes populating discourse about digital technologies, p. 55-84.
[53] Mosco, ibid., 13.
[54] David J. Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, Mass: MIT Press, 1999) considers in detail this notion, described in detail on page 19.
[55] Will Straw, "Embedded Memories," in *Residual Media*, Charles Acland editor, (Minneapolis: University of Minnesota Press, 2006). Citation based on draft available in May 2005 from the author.

which vital information was stored, "...in the ages before printing a trained memory was vitally important".[56] Unlike human memory, potentially recalling at random with further potential for error, digital memory stores offer the potential for digital re-collections of disparate things within a context of meaning and interpretation.

There is however a downside to digital re-collecting. Re-collections made possible by digital technologies, where the collection depends on depictions of material things, also have the potential to decontextualize or detach from a meaningful associated context. Albert Borgmann argues that digital representations of cultural objects, such as art collections for example, have the potential to detach from their context or "foundations", as in the example of the contents of the National Gallery of London (and other museum collections) available to any desktop in digital form.[57] This contextual meaning provides the object with a sense of timeboundedness measured in human experience. Borgmann's argument is however less persuasive as the purpose of digital representations of art collections is not to replace the experience of seeing a work or series of works in person.

Memory's Privileged Time

There are also voices suggesting that whatever the promises of digital technologies, their material emergence in our lives marks a turning point in how we experience and express timeboundedness. Andreas Huyssen's *Twilight Memories: Marking Time in a Culture of Amnesia* is

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[56] Frances Yates, *The Art of Memory* (Chicago: University of Chicago Press, 1966), xi and 4, also cited in Albert Borgmann, *Holding On to Reality: The Nature of Information at the Turn of the Millenium.* (Chicago and London: The University of Chicago Press, 1999), 168.

one such work on the nature of memory, time and culture and it related to the digital. Huyssen characterizes the engagement of our need for the past and the encroachment of digital technologies as a period of "Twilight Memories", a period in which generational memories fade with passing time and the speed of technological change. Twilight is that time between day and night,

> "...that moment of the day that foreshadows the night of forgetting, but that seems to slow time itself, an in-between state in which the last light of the day may still play out its ultimate marvels. It is memory's privileged time."[58]

Huyssen proposes we are now in this privileged time, reflected in a paradox of waning interest in history and concern for amnesia, together with a " ...memory boom of unprecedented proportions ."[59] National identity, cultural and collective memory, heritage and memory projects, memorials, anniversaries of key 20th century events all point to a new obsession and yet ambivalence about memory. For Huyssen, this obsession with memory reflects the "... ideology of progress and modernization and .... the fading of a whole tradition of teleological philosophies of history." Not to be mistaken for fin-de-siècle syndrome or simply another symptom of post modern malaise, Huyssen views obsession with capturing the past as, "...a sign of the crisis of that structure of temporality that marked the age of modernity with its

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[57] Borgmann, ibid., 5.
[58] Andreas Huyssen, *Twlight Memories: Marking Time in a Culture of Amnesia.* (New York: Rutledge, 1995), 3.
[59] Huyssen, ibid., 5.

celebration of the new as utopian, as radically and irreducibly other."[60] Attention to memory, to reconceptions of the past is a way of slowing down processing (rather than being primarily a vital and energizing antidote) to,

> "... resist the dissolution of time in the synchronicity of the archive, to recover a mode of contemplation outside the universe of simulation and fast-speed information and cable networks, to claim some anchoring space in a world of puzzling and often threatening heterogeneity, non-synchronicity, and information overload."[61]

For Hyussen, our need to historicize, remember, memorialize, connect to the material as form of memory is about resisting the rupture, disconnect, and uncertainty of digital technologies. The more we engage digital technologies the more our sense of temporality is affected – in Huyssen words,

> "...the memory boom is a sign of contestation: a contestation of the informational hyperspace and an expression of the basic human need to live in extended structures of temporality....It is also a reaction formation of mortal bodies that want to hold on to their temporality against a media world spinning a cocoon of

[60] Huyssen, ibid., 6.
[61] Huyssen, ibid., 6-7.

timeless claustrophobia and night-marish phantasms and simulations." [62]

The threat underlying Huyssen's argument is that digital technologies will leave nothing to remember and nothing to forget. As we struggle against forgetting, Huyssen argues our efforts become more and more *museal*, crafting old urban centres reminiscent of old times, museum villages and "real" life experiences, retrospectives of recent eras, all in an effort to resist "....the electronic totalization of the world on data banks...".[63] This notional musealization of private and public life echoes Baudrillard's "...panic-stricken production of the referential, parallel to and greater than the panic of material production...," where simulations preserve and control experience to disguise our agony and anxiety.[64]

If digital technologies reinforce this malaise by increasing our disengagement with the real, they may also be a venue for reconciling and understanding a sense of the past in the digital. Vivian Sobchak finds a reconciliation of digital technologies and the past in her analysis of *Quicktime* applications, suggesting the software (which allows for viewing film footage as a small visual screen) is reminiscent of American artist Joseph Cornell's shadow boxes. Both provide the viewer with a square boxed-in smaller frame in which to observe something, reconstructing a confrontation between past and present, by combining bits and pieces of a collective or personal past.[65] Vivian

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[62] Huyssen, ibid., 9.
[63] Huyssen, ibid., 14.
[64] Jean Baudrillard, "The Precession of Simulacra," *LitMUSE*, translated by Sheila Faria Glaser 1981. (litmuse.maconstate.edu/article.php, cited June 22 2005).
[65] Joseph Cornell (1903-1972) described as a recluse, was an independent artist in New York. He created shadow boxes, collages, and forms of assemblages of objects,

Sobchak's ode to *QuickTime* digital movies compels us to see these digital objects as a new form of reliquary, not unlike " ...the fragment, the souvenir, the talisman, the exotic...", each holding a series of images "...that create a remarkable confrontation between past and present."[66] Sobchak's analysis casts a warm nostalgic glow around the computer as container of memories. Aided by the random and free-flowing poetry of the database casting below the surface of the screen to "...an elusive and vast absence, a sea of memories shifting...in the interstices" of what is available visually on the screen.[67] Sobchak's nostalgic, even romanticized vision of the digital is a narrative about technological metadata, about the material yet immaterial bit streams supporting the formats of so-called objects on the screen. Sobchak calls attention to this conflicted new materiality of the digital, a complex, multidimensional unfixed and fluid thing, fixed to the eye for a moment in time, bound by defining code or metadata and further confined to its object-source – fragile hardware and software. Sentimentality aside, Sobchak's ode to *QuickTime* is a playful combination of old and new materiality, remediating the comfortable sense of fixed shadow boxes in digital form. This nostalgic journey however affirms and fixes a bounded sense of time to the digital application, joining it to a non-digital materiality fixed in time. Sobchak's ode to *QuickTime* is about defining a sense of time within the digital as complex multidimensional context.

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said to combine the "...formal austerity of Constructivism with the lively fantasy of surrealism." (Biography of Joseph Cornell www.ibiblio.org cited January 31 2005).

[66] Vivian Sobchak, "Nostalgia for a Digital Object," in *Memory Bytes*, edited by Lauren Rabinovitz and Abraham Geil, (Duke University Press, 2004), 306.

[67] Sobchak, ibid.

The emergence of patina for digital objects suggests a variety of interesting possibilities for further study. Eric Paulos' continuing research at Intel labs now explores a variety of ways in which RFID tags can be used as a method of digitally marking public spaces – there are fewer references to patina in the new projects but the interest in marking human activity digitally remains central. Among the projects is "Urban Atmospheres", described as a way of "...exploring how our everyday objects and public places can be augmented in meaningful and playful ways.[68] "Urban Atmospheres" looks at providing a digital map for urban areas thought of as "in-between spaces" – those spaces we pass through from one place to another. Paulos describes this work as an intersection of social and mobile computing fields, where all landscapes are subject to the digital markings and mapping. How do these largely social and cultural interests in marking time and human interaction digitally also have implications for public surveillance – and accumulation of personal data in public spaces? How does the pre-conditioning of tracking use (with metadata coding to digital objects to ensure use is tracked) lend itself to strengthening the apparent frailties of digital media? What possibilities might this coding provide in leaving something akin to the paper-based vinegar trace? Imagine that future research on the emergence of computer viruses in the late 20th found a form of metadata along with data that revealed more about the virus creation, its expansion, and eventual detection. Does this digital coding of a predisposition to the past - this digital patina - act as a coded trace revealing not scent but data about the digital object in question?

[68] Eric Paulos Intel Research Laboratory @ Berkeley. http://berkeley.intel-research.net/paulos (consulted August 30 2005).

Finally how does a digital patina lead us to a better understanding of how new media evolve, beyond the theory of remediated media?

Chapter 4 – Conclusions About New Media and Digital Time

Digital technology's compression of time (a shortened trajectory to a digital past) and space (in compressed forms of digital objects) is often cited as a distinguishing characteristic of post modernity.[69] This characterization tends to favour attention to time – usually expressed as attention to the past – as a compensatory mechanism used to soften the apparent blow of too much digital media. I propose that the digital patina as a concept suggests something different and does not exclusively support a nostalgic reflex. The digital patina is instead a compelling digital incursion, or *way in*, to a sense of digital timeboundedness. It is a way of calling attention to the importance of timeboundedness in both non-digital and digital forms, and the ways in which digital media express a sense of time.

Patina does however have its drawbacks. Like patina in non-digital objects, the digital patina is about a surface meaning requiring closer investigation. For the information technology developers of digital patina, this meaning is about reinvesting the digital with traces of use over time – and indeed this work has implications for ensuring personal privacy in public spaces if RFID tags become a common form of distributed patina. However beyond these surveillance-like intentions the applications do invite digital technologies and the new media that use them into what Huyssen calls, "...extended structures of temporality...".[70] In sum, digital patina uses the metaphor of patina

[69] Barney, "The Vanishing Table", 33.
[70] Huyssen, ibid., 9.

and tracking the past as a form of binding the digital to a human sensibility of time.

What does the framing of the digital patina and its resonance in material culture suggest about a possible media theory of patina? Has our view of emerging digital technologies focused too exclusively on remediation as the key to how new media evolve? Is remediation itself a concept limited by its own time-bound frame, expressing a material basis to the way we attend to time? This thesis has introduced digital patina applications in the context of material culture studies, arguing that a key characteristic of the digital patina is what it says about time, rather than the media or social traces that came before.

It is tempting to cast the digital patina as yet further evidence of the power of remediation, and of the persistence of our own attachment to non-digital materiality. Digital patina can indeed be viewed as yet another indicator of our accelerated retrieval of the past not unlike retro fashions, collectable toys, and newly "olde" urban centres. And it can easily be cast as another reflection of the often-cited malaise of post-modernity, that anxiety about a sense of personal or common rootlessness, rupture, and displacement. As time and space are compressed, so is our patience and capacity to conceive of digital "things" as resonant and meaningful over time. In this context the digital patina is then a comfortable metaphor from the more certain materiality of solid objects transposed to a new digital reality. If we accept this as the sole lesson of the digital patina we might call it a memory-based soft landing into the digital realm in an era in which we cling to a valorized past of incidental and monumental treasures, of

trinkets and mementoes, antiques, and junk, and of cues to a past identity.

There is considerable academic and popular discourse supporting such a perspective, each lamenting an aspect of loss of meaning and ambivalence in continuing engagement with the digital. There is no shortage of voices decrying the digital's destruction of meaningful engagement – as there is scepticism for how much we can attach ourselves meaningfully to digital and new media. Information theorists such as David M. Levy, or John Brown and Paul Daguid, material culture theorists such as Douglas Mao, and even popular television shows such as *The Antiques Roadshow* and *Clean Sweep* each offer their own odes to a non-digital materiality, claiming mere shallow remediation at the hands of new media. Brown and Daguid's *The Social Life of Information* is favourable to digital technologies but draws our attention to the unique culture of life associated with incidental paper objects or things. Citing Harold Innis' distinction between time and space biased media, Brown and Daguid suggest digital media have the potential for both space and time bias, but only if their ability to be "fixed" or sustained over time is secure. This notion of "fixity" is ultimately a source of frailty for new media, because new media is presumed to be unable to compete with the reliable immoveable fixity of non-digital traditional media.[71] For Brown and Daguid this fixed quality in non-digital media is not a limiting antiquated quality but something necessary for new media and communication purposes – and something missing in the fluid-biased world of digital technology.

[71] *The Antiques Roadshow* was first produced in the U.K. by the BBC but has North American franchises syndicated. *Clean Sweep* is an American production on TLC (The Learning Channel).

Digital or electronic documents too subject to the fluidity of frequent change may not for example be regarded as legally authentic or reliable and thus compromised in their use. The result is while new (i.e.: digital) media hold promise, only traditional non-digital documents currently have the necessary qualities to be valued over time.[72]

American television shows such as *The Antiques Roadshow* and *Clean Sweep* nourish our fetish with material culture from opposing ends, highlighting what is assumed to be our important relationship with non-digital materiality. While *The Antiques Roadshow* valorizes our clutter with sentiment or promised monetary value, *Clean Sweep* separates people from their domestic clutter with the assistance of trained organizers. Participants are urged to separate emotion from materiality – thus the show routinely dispenses with photographs, correspondence, diaries, wedding dresses, sporting and musical memorabilia, and childhood toys in a ritual of household cleansing. The message is to be rid of the clutter, but hold on to the memory. Add to this the litany of household improvement magazines, organizer stores, and "scrapbooking", and what results is a confused and complex relationship with stuff. At the core of these pursuits is however the view that non-digital materiality, however burdensome, establishes a comfort area of personal reflection in materiality. Amidst this popular discourse of attachment to non-digital things, are we capable of attaching to the digital, if only as a way of expressing a sense of our own timeboundedness?

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[72] John Seely Brown and Paul Daguid, *The Social Life of Information,* (Boston:

It is difficult to find academic writing that attributes sentimental or evidential value to aspects of digital technologies, including the possibility of digital objects leaving the equivalent of a sensory trace. One exception is Sobchak's piece about *QuickTime* discussed in Chapter 3. Her reflex to resist changes to *QuickTime*'s software (an inevitability in an industry favouring frequent upgrades) hinges on her connection to the materiality of the shadow boxes – and perhaps reflects a nascent anxiety about the relative absence of historical or source traces in digital technologies. Her attachment is interestingly to a form of materiality (the Cornell boxes) that expresses the passage of time through visual wear-and-tear – unlike the digital applications on her screen. It is also likely that Sobchak is remediating more than technology in her article. In thinking about how older forms of technology are remediated in newer forms it is likely that writers also carry forward a remediated sentiment, attachment or set of emotive expectations associated with the technology. Sobchak's ode to *QuickTime* is an interesting turn, replaying a reflexive attachment to non-digital materiality amidst the digital, somewhat like replaying an old song on new technology.

Concern about our own identity in something past and a sense of belonging is not a nostalgia-driven private matter alone, but has implications for the definition of the public sphere and civic life. Michael Rowlands cites the concern with where we belong in relation to technology and things as resonating in Arjun Appadurai's suggested production of locality.[73] How will we conceive of these material

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Harvard Business School Press, 2000): 173-174.

[73] Michael Rowlands, "Heritage and Cultural Property", in *The Material Culture Reader,* Victor Buchli, editor, (Oxford, New York 2002), 105.

connections triggering memory and identity through an engagement with digital objects? I could not help but wonder if our urgency to collect and value old things, much like the *Antiques Roadshow*, will have a digital equivalent in the future. Will the digital bit stream constitute a material object of personal or other value over time? Will the term antique itself persist among a proliferation of pristine self-renewing digital objects? Will a famous email be preserved privately and brought forward for evaluation, and as highly valued as traditional paper-based correspondence? Imagine a former US civil servant with access to the White House email systems during the first Bush administration appearing in twenty years with a digital copy of a famous email. The email would show the controversial single line "... well done..." speculatively sent to Oliver North commending his falsification of evidence to Congress. Would our *Roadshow* evaluator be able to date the object by a system of signs, much as patina ascribes meaning to three-dimensional objects? Will it show wear-and-tear that is meaningful or will it simply be unreadable at all because its supporting metadata, hardware and software on which it was based are gone?

A closer consideration of the issues in conceiving of a digital patina reveals a complex mixture of concern for social traces, and notions of the past fused with how media evolve over time. Obsolescence alone compels the argument that an encoded form of ageing, a kind of digitally coded aptitude for patina, will be necessary to capture forms of social traces and human use over time. The frail and uncertain nature of digital technologies and their reliance on media supports for use

suggests a digital patina is less a value attribution than a necessity to preserve digital objects. Creating a digital object that remembers traces of use requires careful coding to receive the user input. Is this a corruption of the illusion of freely defined personalized memory or a safe social gesture ensuring our digital objects continue to carry our interest and passion for the past? Does the value investment in coding objects to receive a patina unduly disrupt a sense of the past, and a more accurate form of ageing? There have been suggestions that Michelangelo's Sistine Chapel might have had an ageing process built in, a pre-established sense of timed decay as part of the work – something all too skilfully removed in the restoration.[74] If all materiality has a predisposition to decay, perhaps digital objects simply require a different means of decoding the decay than traditional non-digital objects.

Despite a range of shortcomings, including the need to plan ahead and code ahead of time a platform for receiving the history of use (or patina), digital patina remains an interesting and deliberate act to encode materiality of human engagement with the digital. This encoding may indeed be a requirement for a theory of new media patina, where tracking use and human interaction requires a precondition to capture information. Without this precondition, all evidence of when, where and how digital objects are used would not necessarily be retained. Consider for example the time and date attached to email functions. This tracking of time is a form of metadata, coded in as a digital predisposition to maintaining time bound information. Loss of this data, as a function of migration to a

[74] Svetlana Boym, *The Future of Nostalgia,* (New York: Basic Books, 2001), 46.

new application or data mishandling, results in little or nothing relating the information to a specific time – and perhaps more importantly the sense of timeboundedness attached to the communication. Digital patina is then a compelling way of ensuring new media pay attention to the necessity of a discernible temporality – even if it requires planning ahead to ensure the media can track and maintain evidence of use.

This requirement to plan ahead in order for digital technologies to reflect a sense of time further turns our attention to the power of timeboundedness in new media. Time is a powerful tool, expressing itself as both a prevailing abstraction and a socially constructed experience.[75] How do we engage and measure a sense of time – not in the sense of time-keeping, but in how we conceive and define this abstraction and experience? Elizabeth Grosz's *Time Travels: Feminism, Nature, Power* (2005) refers to the tendency to understand and refer to time as "...two trajectories, one virtual, the other actual, one which makes the present pass, and the other which preserves it as past."[76] While we accumulate experience over time our sense of time tends toward generalized notions of past and present, with each defining and maintaining the other. A sense of *the past* is not the same as an appreciation or awareness of history, but is a generalized sense of all that is not current or "now". How are these trajectories defined in the digital? Does the tendency toward mutually defining trajectories trigger a need to harness the past in digital form by calling it "patina"-

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[75] This helpful reminder that time is both abstract and constructed experience is from "Reconceptualizing Organizational Time with the Concept of 'Affective Spacetime', by Gladys L. Symons, presented to the 3rd Transdisciplinary Forum "Transforma #3: Zeit, Raum, Agency/Time, Space, Agency," Magdeburg, Germany, July 15-17th 2005. Unpublished paper provided by the author.

[76] Elizabeth Grosz, "Introduction," in *Time Travels: Feminism, Nature, Power,* (Durham and London: Duke University Press, 2005), 3.

something we associate with non-digital objects? Grosz goes on to suggest that there is a tension between human mortality, the limited frame in which we exist, and the continuous, uncontrollable movement of time. The digital patina may then be a new media reflection of this tension, of the human tendency to apply a timeboundedness to digital objects, using a known metaphor from material objects to things which are material but clearly of a different nature.[77] The digital patina presents further questions for notions of digital time. How are Grosz's trajectories affected by the assumption of compression of both space and time in digital media? If "digital time" compresses the passage of time, is the past newly defined by the click of a mouse or the changing colour of a hypertext link? Is there a form of digital time attuned to the expectation of compression in digital media?[78] Digital patina applications suggest digital time compresses notions of the past, forcing the trajectories of present and past closer together – in this context the past may be the brief time spent in using a digital application rather than the *long duree* implied in a traditional sense of the past.

Digital patina projects suggest promising history of use but one defined by a compressed sensibility of time and what constitutes history. In these projects a history of use is akin, socially, to the exchange of text messages or email messages – the defining point is not time per se as in a *longue duree* of history but of communication through and about digital objects. The digital patina is then less about a past focus but an extended present urged on by the need to communicate – the

[77] Grosz, ibid., 3-4.

messages left in the layer of use are not so much about memory or legacy but about simple use – the passer by to a public space, the best dessert in town, or use of a website in passing. Patina in its digital form is less about *a matter of time* than about being *in passing*, about moving by and through leaving traces quickly on the digital bit stream. Digital patina is then a measure of digital time, exposing the human tendency to seek out a bounded temporal bias regardless of the media.

The projects considered bear striking similarity to historical notions of patina, where each small gesture, each act of use contributed to the overall speculative accumulation of evidence of use. Like weathered copper or the dented chair, digital patina is the trace evidence, in digital code, of a series of small fleeting moments. The *digital* sense of patina differs in its compression of notions of time, of specifically what is considered past in the abbreviated life-cycle of digital technologies. Ascribing digital code to track and accumulate evidence of use of an object may be about a concern for the past but this is not at the core of the projects described. These projects are no more about historically minded technologies than all historical projects are about retrieving and restoring a nostalgic idyllic sense of the past.

As a way of seeing the relationship between the past and digital technologies, patina is an interesting venue, a place of symbolic and material commerce able to convey our anxiety about losing touch with time and a sense of timeboundedness – all more visually evident in non-digital media. The common table we may be seeking is not a

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[78] References located based on searches conducted January 31 2005: BBC Press Office, "BBCi homepage gets a multicolour facelift" www.bbc.co.uk/pressreleases/2002.

resurrection of material objects and nostalgia but a common time table where we are familiar with and have easy access to a visual sense of temporality. This visual sense of time, of the way things bear witness to the passing of time or the absolute immediacy of something "new" is invisible or alternatively expressed in new (and specifically digital) media. Among the key ways in which digital media impoverish reality is the lack of a sense of timeboundedness – and perhaps the digital patina is one way in which we express a need to have a visible temporality something akin to our chipped, flawed, decaying non-digital things.[79]

I have assumed that digital objects do constitute a form of materiality – an issue not sufficiently described in the readings on material culture selected here but a possible question for further consideration – for this reason I have also not dwelled on technical indicators of digital use and wear-and-tear or decay. Ultimately the focus of this exploration has been to locate a place in which to consider our relationship with things and specifically with old things. Digital patina as experiments with evidence of use and decay on otherwise pristine digital objects do not reflect nostalgic motives. Where nostalgia is defined as the need to rebuild something lost or a reflection of longing, these projects do not seem to invest in longing or loss specifically.[80] These projects do fulfill

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[79] Darin Barney suggests that digital technologies impoverish reality (and not enhance experience) digital technology is a context in which the « ...world of things is systematically evaded, and so conspires more readily with commodity than with community. » Darin Barney, "The Vanishing Table, Or Community in a World That is No World," in *Community in the Digital Age. Philosophy and Practice*, Andrew Feenberg and Darin Barney, editors, (Toronto: Rowman & Littlefield, 2004), 32.

[80] Svetlana Boym defines two types of nostalgia, restorative nostalgia reflecting *nostros* proposing to rebuild a home lost, and reflective nostalgia, dwelling in *algia*, or longing and loss as a means of remembrance. In Boym, *The Future of Nostalgia,* (New York: Basic Books, 2001), 41.

Innis's contention that communication technologies are biased towards either the integrity of space or time. If digital technologies have the potential to express a bias to both space and time, the digital patina adds an altered sense of time suitable to the digital frame. Digital patina claims to ensure social traces on the digital over time, but in doing so conceives of time as an abbreviated moment in the life of the digital object. Svetlana Boym's characterization of the internet and its relationship with space-time suggests a more intractable view, where the digital has no trace or texture,

> "The internet is organized in a radically spatial manner; it is data centric and hypertextual, based on simultaneity, not on continuity. Issues of time, narrative and making meaning are much less relevant in the Internet model. Computer memory is independent of affect and the vicissitudes of time, politics and history; it has no patina of history, and everything has the same digital texture."[81]

While indeed time and space bias are less relevant to the internet model, the digital patina projects provide for some forecasting of a digital texture, albeit one that is variably visible to the eye. Digital texture is a complex matter, dictated by how digital objects exist apart from or in the absence of the condition of their creation, in Boym's view, there are no versions or drafts but only the final "rigid operating functionality"[82]. Despite the availability of memory in electronic form,

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[81] Boym, ibid., 347.
[82] Patrick Bazin, "Reconfigured Memory" in *The Future of Memory*, ed. Giulio Blasi (Bologna: Brepols Turnhout, 2002), 21.

Boym's proposes a form of amnesia by dematerialized digital media, where the digital is strictly immaterial and the digital "objects" themselves static. The digital patina may be a form of resisting this amnesia, even if it is pre-coded, a deliberate disposition to trace, age and track use. Digital patina has at its source a sensibility about continuity and the passage of time – however compressed to an abbreviated moment.

There is a temptation to buy into the digital patina as a restorative measure to digital technologies seemingly textureless form. If it compresses time to single moments of passing through, it also retrieves itself in situating digital objects in a context of meaning and a relationship with users. Capturing digital traces also runs counter to the purposeful amnesia associated with new technologies. Vincent Mosco's *The Digital Sublime* argues that forgetting older technologies in favour of something new, particularly as it relates to digital technologies, is at the core of the powerful myth associated with the digital as transcendent. Mosco likens the amnesia about the old and the anticipation of the new to what Armand Mattelart (2000) called, "the ideology of redemption through networks".[83] We are compelled to buy into the rhetoric of redemption by a political economy with technological visionaries promising something better in the new, because renewal makes a good story, and that transformation in the form of something vanguard is rarely uninteresting. Our propensity to digital amnesia is a hope for the ultimate transformation, hoping as

[83] Armand Mattelart's *Networking the World, 1794-2000*, cited in Vincent Mosco's *The Digital Sublime*, 118.

Mosco suggests, "The end is preferred to more of the same; the transcendent to the routine; the sublime to the banal."[84]

While the digital patina might pose a challenge to this amnesia there is equal possibility it will persist in sustaining the myth that digital technologies surpass the banal of material life – and most specifically the material decay of non-digital objects. Digital patina has the potential to encode a sense of the past but in doing so reinforces the digital's transcendent and mythic "promise of the sublime", beyond real-time patina, wear-and-tear and everyday decay.[85] Digital patina is a conflicted concept, pushing back at amnesia and promising something transformative of time, space and social relations.

In Heather Menzies' *No Time,* she describes the relevance of the history of rail lines to understanding the ways in which digital technologies allow for disengagement from the present. Digital technologies, like forms of transportation, allow us to experience space and time in a new way.[86] For example, in the evolution of rail lines the increased speed of trains made experiencing the view less feasible, turning passenger attention to reading and other options. In Menzies words, "As Marshall McLuhan averred, there are psychic and social consequences when the experience of daily life becomes the almost split-personality act of being present and not present at the same time."[87] Digital technologies allow us to transpose ourselves across space and time, with now the possibility of digital patina providing an accelerated sense of the past

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[84] Vincent Mosco, ibid., 118.
[85] Ibid., 3.
[86] Heather Menzies, *No Time. Stress and the Crisis of Modern Life.* (Vancouver: Douglas & McIntyre Ltd., 2005), 107.
[87] Menzies, ibid., 110.

reflected in a social trace as digital code. New media may not be defined by their remediated characteristics but by the ways in which they define and communicate a sense of time through the coded traces of human interaction. If we pay attention to the way new media express time – to the changes in colour on the screen, to the multiple data fields available behind the visible screen, to the changing nature of migrated data, could this be evidence of a way in which new and digital media in particular express their own time-bias?

The digital patina's significance is not its association with a trace of human intervention but as a way of characterizing time and more specifically a concept of the past. When asked if something was lost in the accelerated experience of digital technologies, Canadian scientist David Suzuki responded simply, "...a sense of time. An epochal sense of time as duration. Reflection on one's existence."[88] Montreal poet and educator David Solway, in an interview with Heather Menzies, echoed this altered sense of time, characterizing cyberspace as a,

> "...great video arcade of time... everything glittering in the moment. But the glitter is encapsulated in the immediate, in what Yeats called the "glance". Everything is a function of glances, as opposed to the gaze, which lingers. He was worried even then that we were moving out of the culture of the gaze, where we linger on things that exist around us because they are inherently beautiful and valuable in themselves, into the culture of the glance, in which we only perceive

[88] Menzies, ibid., 116.

instantly and then forget as we move to the next glance."[89]

Is the digital patina's sense of the past as *passing through* akin to this glance? This exploration of the digital patina has implications for additional study. Among the areas for further consideration include the relationship between digital memory (as reflected in patina or coded objects) and surveillance uses of the technologies. When is patina merely social trace and when is it the focal point of a surveillance enterprise? How does the open source software movement track and maintain use and modification by users? Are these examples of a functional use of digital memory? What are the values associated with types of digital objects, such as elements of on-line games (a sword used by a successful player might be more highly valued qualitatively and quantitatively than others). Do these objects by necessity have patina? Finally, what is the role of authenticity where monetary or social values are assumed in association with a digital patina? Will there be a comparable digitally coded predisposition to an authentic patina?

Michael Thompson's *Rubbish Theory* closes with an interesting question, asking how we reconcile the contrasting interests in a compulsion to capture the connectedness of everything and those who feel no such urge or compulsion. Why do some find comfort in certainty and others the erosion of certainty? I have proposed the digital patina is a conceptual experiment that does provide comfort to some, in the form of a material sensibility about digital objects and a sense of the past. It is a fallible concept thinly disguising an anxiety about the

[89] Menzies, ibid., 189.

digital's frail connection to continuity and to a stable future. It is ultimately an interesting example of Michael Thompson's contention that rubbish is retrieved in a series of small acts, leading to the notion of a valued market. Digital patina is a small step to retrieve the digital to a future valued purpose.

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