Emancipatory Digital Archaeology

By

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Abstract

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As archaeologists integrate digital media into all stages of archaeological methodology, it is necessary to understand the implications of using this media to interpret the past. Using digital media is not a neutral or transparent act; to critically engage with digital media it is necessary to create an interdisciplinary space, drawing from the growing body of new media and visual studies, materiality, and anthropological and archaeological theory. This dissertation describes this interdisciplinary space in detail and investigates the following questions: what does it mean to employ digital media in the context of archaeology, how do digital technologies shape inquiry within archaeology, can new media theory change interpretation in archaeology, and can digital media serve as a mechanism for an emancipatory archaeology? To attend to these questions I address digital media created by archaeologists as digital archaeological artifacts, understood as active members of a network of interpretation in archaeology. To give structure to this understanding I assemble three object biographies that identify the digital archaeological artifact's context, the authorship of the artifact, the inclusion of multiple perspectives involved in its creation, and evaluate the openness or ability to share the artifact. The three object biographies that constitute the body of this work are a digital photograph taken of a teapot at Tall Dhiban in Jordan, a digital video of an unexpected excavator participating at Çatalhöyük in Turkey, and a 3D reconstruction of a Neolithic building excavated at Çatalhöyük within the virtual world of Second Life. In these object biographies I weave together narrative, imagery and rigorous, theoretically informed analyses to provide a reflexive investigation of digital archaeological artifacts. Drawing from this research, I advocate a critical making movement in archaeology that will enable archaeologists to use digital media in an activist, emancipatory role to highlight inequity, bring the voices of stakeholders into relief, de-center interpretations, and to make things and share them.

To Daniel Eddisford,
this tornado loves you.

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Acknowledgements

The decorations adorning the atrium of the University of California, Berkeley's Archaeological Research Facility strike me as slightly macabre. The polyester "snow" is strategically covering the fake archaeological excavation in the corner, dripping from the plants that are always neglected, and lining the framed photographs of graduate students doing outreach with children. It's the beginning of December, and the semester is winding down around me, the students finishing their finals and getting ready for the holidays. Though the strung lights and nutcrackers are a bit much, the atrium holds an airy loveliness that is lacking in so many academic buildings. The stately red brick and windows retained from when this was an outside area of the building, the fantastic Paleolithic mural covering the west-facing wall, and the strict geometry of the earthquake-proof girders bracketing the walls, coming together in a transparent pyramid-shaped roof all come together in a place that is the heart of the department. In this atrium I've attended functions honoring many of the professors, receptions after talks, convened meetings with advisors and other graduate students, taught undergraduates how to plot artifacts in an archaeological drawing, and even taught the history of the building, its status as a frat house and the subsequent occupants, each living in the space and remaking it as their own. It is the appropriate place for nostalgia, for remembering and acknowledging the previous occupants of this building, and how I got here, and how this dissertation came to be.

My committee members, Ruth Tringham, Meg Conkey, and Nancy Van House have generously and enthusiastically opened their lives and research to me, and I cannot imagine my graduate career without their wisdom, humor, and indulgence! I have no small amount of awe for these pioneering women in academia who fought relentlessly for recognition of their research in the face of normative patriarchy. My advisor, Ruth, stood with me and kept pushing me to be more reflexive, to challenge my own preconceptions, and to have ridiculous amounts of fun. Meg was always ready with incisive comments that exposed uncritical thinking and fostered introspection and enlightenment. I deeply enjoyed my long conversations with Nancy Van House at various coffee shops around Berkeley, and always came away delighted and inspired by our shared digressions and passion for photography.

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I have learned just as much, if not more outside of the brick walls of the Archaeological Research Facility as I have within. My mentors in the field, Roddy Regan, Lisa Yeoman, Michael House, James Stewart Taylor, Freya Sadarangani, Shahina Farid, Cordelia Hall, David Mackie, and Gareth Rees taught me so much and put up with the ridiculous American with big ideas and a big

mouth. To all of my friends, colleagues, stakeholders, and stake-wielders in the field, I miss the starry skies, the campfires, the cold, the hot, the beer, the antics, the storytelling, and your company. May we all be gainfully employed, somehow.

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Chapter One: Introduction

> "In fact, simulacra do not re-present anything (not even themselves); they are acts, events, and happenings that take place on the surface of things with a consistency all of their own. (Doel and Clark 1999:266)

While I was writing this dissertation I had the good fortune to be helping Margaret Conkey scan her voluminous library of papers after she retired. Over the fifty years that Conkey had practiced archaeology she had accumulated articles, correspondence, grant applications, old magazines, sketched cave art—all conceivable forms of ephemera relating to her work. I agreed to help her digitize what we could of the collection. I spent many afternoons over the department's copier, figuring out the best way to scan oddly sized pages and mimeographed copies bound together with rusty staples. Much of this work involved mutilating the originals in some way, cutting off spines and taping small notes to larger pieces of paper so they would conform to the copier's standards. The brutality involved in the digitization of analog materials struck me as a strange and slightly distasteful affordance of the process of remediation. This stark materiality stuck with me as I was writing object biographies of digital archaeological artifacts. The yellowed pages, thick with marginalia, were corporeal expressions of Conkey's vocation. Their uselife was visible in the tears and ink-stains, in the traces of outdated technology used to print the words and bind the pages. How much of this history would be preserved when the articles were scanned, processed through optical character recognition, key-worded and sorted into neat, skeuomorphic "folders" on a "desktop"?

Digital archaeological artifacts, objects created by archaeologists using digital media to describe, record, and interpret the archaeological record, are not devoid of materiality. Digital media—Conkey's scanned documents—are cultural documents that both help construct "some outside referent" (Manovich 2001:15) and are "acts, events, and happenings" (Doel and Clark 1999:266) themselves. The numerical representation that produces vivid digital photographs and interactive virtual worlds does not remove these objects from physicality or reality nor does it exclude them participation as active participants in a network of interpretive meaning. Yet digital archaeological artifacts are often used transparently, in a way that decontextualizes the specific developmental path and limitations within the medium. Archaeologists often integrate technology developed for other purposes and specialties to help interpret the past and little regard is paid to existing theory developed around these technologies, or such introspection comes at a much later date. The use of visualization methods such as photography, videography, and virtual reconstructions are seen as auxiliary to the main project of archaeology, a supplemental, supporting "bonus" rather than as a central and vital tool for understanding the past.

In this same pattern, archaeologists have begun to use the internet and digital media to organize and distribute archaeological information without considering the implications of this new format. There are a few notable exceptions to this practice, such as Ruth Tringham's formative work on remediation and Rosemary Joyce's experiments with hypermedia (Joyce and Tringham 2007). A more exhaustive review digital in archaeology is contained within the central chapters of this dissertation but it is worth noting that while engagements with new media technology are increasing within archaeology, there is little archaeological engagement with the growing body of new media theory. It is within this interdisciplinary space that I pose the broad, central question of this dissertation, what does it mean to employ digital media in the context of archaeology?

The exploration of this question necessarily involves many additional, more specific lines of inquiry. First, how do digital technologies shape inquiry within archaeology? New technologies have

been quickly integrated into archaeological investigation while remaining undertheorized. For example, photography, quickly adopted by archaeologists as an ostensibly transparent means of recording, has only relatively recently come under scrutiny (Guha 2002; Molyneaux 1997; Russell 2006; Schneider 2007; Shanks 1997), and is for the most part still unproblematically presented as a silent reinforcement of an interpretive text, rather than being embedded in a grammar and ethics of seeing (Sontag 1977). The rapidly changing technology of digital photography emphasizes photography's place in archaeological recording as being "produced through a complex of socially mediated actions" (Bateman 2005) and the medium has exploded with the introduction of on-site personal photography, the ease of sharing of images and the growing ubiquity of digital cameras. Yet literature regarding formal archaeological photographic practice does not reflect these practices nor has it incorporated any idea of changing archaeological vision through the remediation of digital technology. It is important to understand that the use of digital media objects and technologies is a theory-laden practice. That understanding enhances our engagement with the existing scholarship and criticisms of the genre.

Secondly, can new media theory change interpretation in archaeology? Further, can the creation of digital objects within archaeology expand our methodological narrative? The use of new media formats to present archaeological information to the public has been explored by various archaeologists (Joyce and Tringham 2007; McDavid 2002), yet there have been comparatively few attempts to investigate new media theories with respect to the interpretation of the archaeological record. While creating a digital edition of the Cotton *Mappapmundi*, an Anglo-Saxon map of the world, Martin Foys (2007) considers the concept of reading a tapestry as hypertext. He identifies the linkages between Jay David Bolter's (1991) discussion of hypertext in the "late age of print" and the theologian Anselm's comments regarding pre-print devotional study (Foys 2007). These linkages serve as a starting point for an investigation of the creation of interpretive schemas for documents (and artifacts), that reveal "aspects of pre-print texts that do not necessarily align with the dominant characteristics of print culture, and so have remained obscured and/or unnoticed" (40). By investigating alternate narratives and methods of representation in archaeology, can we resituate archaeological questions in productive ways?

Finally, can digital media serve as a mechanism for an emancipatory archaeology? In their chapter regarding feminism and pedagogy in archaeology, Meg Conkey and Ruth Tringham (1996) support the concept of decentering authority in archaeology while in the classroom, and position archaeology as crucial to contemporary cultural politics. Further, they identify the popular media as serving the "very same controlling agents that have fostered patriarchal, essentialist, authoritative thinking" and assert that for this reason an "explicit engagement with the media is even more crucial to a feminist pedagogy" (233). While there have been discussions about the use of digital media to record archaeological excavation as part of a reflexive methodology (Brill 2000) and as a way to phenomenologically explore a place (Tringham, et al. 2009; Witmore 2005b), there has been relatively little discussion regarding the potential for digital media to serve as an opportunity for archaeologists to form independent narratives (for the beginning of this discussion, see Joyce and Tringham 2007). In a recent book, *Archaeology and the Media*, the archaeologist in each chapter is cast as a critical, yet passive interpreter of archaeological narratives produced by television, film, and the video game industries (Brittain and Clack 2007). With the tools of new media, archaeologists can inexpensively create their own media products, and share them instantly on the internet. In this way, archaeologists can circumvent the popular media to transparently present their own stories. Better yet, these same technologies provide a means to co-creatively construct the past with the active participation of stakeholders. Rosemary Joyce and Ruth Tringham (2007) raise the legitimate

concern of unequal access to digital resources, but argue that technological access quickly reaches beyond the first adopters to benefit women and disempowered groups (330-331).

With these questions in mind, I explore the possibilities of an interdisciplinary dialogue between archaeology and new media in a series of chapters that center on the tangled relationships entwined around and within digital archaeological artifacts. As an organizing concept, the chapters are a series of object biographies of digital archaeological artifacts, namely, a photograph, a film, and the representation of a building in a virtual world. Though the technologies used to create these artifacts are hardly discreet, disambiguating the context surrounding each is a productive venture to confront the questions posed by my dissertation. The format of object biographies is one familiar to archaeologists and brings attendant associations of concepts of materiality that are useful to explore, as too often digital archaeological artifacts come with presuppositions of temporality and ephemerality. First, however, I situate these object biographies by elucidating my theoretical and political grounding to give better shape and context to my argument.

While investigating the interdisciplinary space between New Media and Archaeology I have found a productive conversation in which many theorists, occasionally unaware of one another, discuss aspects of materiality, remediation, and networks of meaning in ways that are valuable to furthering understanding in both fields. In the two chapters following this introduction I will describe this conversation and consequently the theoretical grounding of this work. These voices come from four loose topical categorizations: that of the expanding interest in materiality, new media and visual studies, epistemic justice and feminism. It is not my intention to give an exhaustive history of any of these hefty topics, as that would be wildly outside of the purview of this dissertation. Yet several of these voices speak to each other in compelling ways.

Within the topic of materiality, I look both to socio-cultural anthropologists and to archaeologists, especially those who have exhaustively grappled with "things" as their primary research topic, expressed through the form of object biographies. One such example is Igor Kopytoff's oft-cited chapter (1986) about the cultural biography of things that formalized and extended the questions that archaeologists had been asking of artifacts since the beginning of the profession. A number of archaeologists have specifically taken these questions to extend and elaborate their studies of artifacts. While there are several instances where object biographies have informed archaeological research, of particular interest are Janet Spector's examination of an awl (1993), Ruth Tringham's life history of a house (1994), and Cornelius Holtorf's ancient monuments (1998) and pot sherds (2002), which are unique studies encompassing aspects of material remains on multiple scales. More elaborate takes on the subject include that of Carl Knappett, in that he explicitly engages with the technology of photography to inform his object biographies. Following Allan Pred's conceptualization of "living creatures, natural phenomena, and humanly made objects" as having life histories and of following a continuous path through time-space that intersects with one another (1984:281), Tringham's (1994) innovative approach to reconstructing events surrounding a prehistoric house in Opovo was an early exploration of materiality and narrative in the archaeological record.

Anthropological and archaeological accounts are complimented by research on emergent technologies in media studies, and by science and technology studies. For example, Jonathan Crary (1994) positions the *camera obscura* as central to our understanding of changing visuality and modernity, Ken Hillis (1999) extends Crary's argument to virtual reality environments. Bruno Latour uses the examples of the Berliner key (2000) and door grooms (1992) to "do words with things" and

understand how these things interact with us as actants. In turn, many of these theorists draw upon foundational work in visuality and photography. The interaction between Susan Sontag, Roland Barthes, and John Berger regarding photography, vision, and meaning-making is particularly illuminating. Baudrillard's early writings (1996) on structuralism are certainly important, but it is his later discussions (1994) of the hyperreal and the interaction between media and meaning that contributes a provocative, and at times incendiary voice to our interdisciplinary conversation.

Situating the researcher in the complex web of digital object biographies is a necessary and I would argue, political act. It is not my intention to separate the theoretical from the political, and indeed they are deeply intertwined within my research, yet organizational clarity calls for a chapter devoted wholly to the political nature of this research. I position my research with respect to cyberfeminist studies and draw from emancipatory practices and the growing interest in epistemic justice within a subset of archaeologists. Within this chapter I will also draw attention to the necessity of open source publishing and the complexities of applying Creative Commons licensing to archaeological data and interpretive works, especially within the realm of personal and professional obligations. Expanding from this stance, I also query media making in archaeology as a do-it-yourself practice in the realm of the Maker subculture and the current social networking paradigm.

After establishing the theoretical and political framework on which this dissertation is built, I work with these underlying concepts through three object biographies. In each instance, I have created the media in question through a process informed by both archaeological and new media practice. By intensively examining each of these objects and their place within their attendant network of past and present relationships I will bring these objects into a meaningful conversation about digital media practice in archaeology. In telling these stories as a narrative I will also demonstrate the productive relationship between object biographies and network analysis as well as depart from the formal and highly ritualized language of dissertations to make a complicated topic more accessible to multiple audiences.

The digital photograph that is at the center of the first object biography was shot almost as an afterthought, yet it is perhaps the punctum of this dissertation. When I describe my dissertation to academic or general audiences, the strongest reaction comes after I state that an entire chapter is about the digital photograph of a teapot. Yet this photograph exhibits the deeply ambiguous nature of archaeological site photography, the situated, political practice of new media making, the chimeric essence of digital media, and establishes the *longue durée* of archaeological vision. Indeed, while it is a convenient explanatory device, it is disingenuous to state that I am writing the biography of a singular object as the manifestations of this photograph of a teapot are multiple and still forthcoming. In this I hope to de-center the object even as I reify it with an in-depth discussion of the complex network of relationships that surround digital media making within archaeology. Further, this discussion will concretize the moment that this dissertation occupies within a rapidly changing landscape. The camera that the photograph was taken with is already outdated and archaeological practice is surging forward with experimental visualization technologies. This in-depth examination will provide a watermark in archaeological image-making, a stable reference in our otherwise undocumented and undertheorized experimentation with technology.

The second object biography moves from the intensely utilized form of media of photography within archaeology to a more rarified form of documentation, videography. While filmmaking technology is becoming easier and more inexpensive to use, the full integration of

videography into archaeological practice is exceedingly rare. As such, writing about archaeological filmmaking is also scarce. When archaeologists write about film, it is generally about the portrayal of archaeology and archaeologists in the popular media, and not about films made by archaeologists themselves. I will outline this history within the context of my short film about Nevriya, a cook at the site of Çatalhöyük. Through this film I will query the political nature of archaeological vision, and the complexities presented by the growing ethic of Creative Commons and Open Access sharing in non-Western contexts as well as the feasibility of do-it-yourself media-making in archaeological practice. In contrast to the ubiquity of the photograph of the teapot, this film about Nevriya has been intentionally kept from wide distribution on the internet, respecting the wishes of the woman being filmed. Instead, the film was shown during an annual community outreach event in Turkey, reversing the pervasive trend of archaeological film shot for Western scholarly audiences.

Moving from the rarified realm of archaeological filmmaking, I will examine the well-trod media of digital 3D reconstructions in archaeology. As I have written in my article, "virtual reconstructions of the past have been compelling for archaeologists as a method to capture the interest of a public who wanted, in their perception, to relive the past as accurately as possible" (Morgan 2009:471). These reconstructions have also become increasingly cheap and easy to make with the ubiquity of 3D modeling software, including powerful, free tools such as Blender and Google Sketchup. As such, it has become standard procedure on many sites to model not only architectural features but also individual artifacts and soil horizons. Yet many of these reconstructions are not accessible to the general public beyond static representations. The third object biography is about the life and death of the virtual reconstruction of a structure called Building 79 (B79) in the online world of Second Life. While unique in the extent to which in-world interaction with architectural elements and fellow avatars is possible, Second Life is a closed, proprietary, for-profit enterprise. For this reason, while Second Life allowed an unprecedented, interesting tool to think about archaeology with, the reconstruction of Çatalhöyük, of which it is a part, ultimately "died" as a result of the for-profit nature of Second Life. Still, the life history of B79 illuminates the physicality of digital objects and their meaningfulness as both interpretive devices and visualizations that are more accessible to a wide audience. The introduction of individual agents in the form of avatars promoted individual interaction with archaeological interpretations, group discussion and long-distance collaborative reconstructions. In the case of B79, I collaboratively reconstructed it with the field archaeologist in charge of the excavation of the building. Avatars also suggest an enticing gaming element available and relatively unexplored for archaeological reconstructions. Detailing the context and history of B79 in Second Life and at Çatalhöyük illuminates the permeability of "real life" and the archaeological imagination.

These three object biographies move through a very broad swath of archaeological media use, albeit within the realm of digital technology. Photography, videography, and virtual reconstruction share a reliance on visuality that has been critiqued as privileging this form of transmission over other senses such as touch or smell (Tringham, et al 2009). However, this emphasis on visuality, digitality and other practical and historical relationships between these three media formats affords a certain amount of comparability and transferability between them that is useful for a cohesive political and theoretical approach to digital media for archaeologists. These objects are mutable and act transgressively, inviting interference through their unstable qualities.

The exploration of the relationship between new media and archaeology requires a thorough investigation of the various ways that new media formats are used in archaeology, the creation of additional new media objects explicitly in the pursuit of the research in this dissertation, and an

evaluation of their effectiveness in transmission of information. New media obscures the lines between education and art, medium and message and while this obfustication is one of its strengths, the evaluation of these processes can be difficult. But just as technologies such as Global Positioning Systems (GPS), Geographic Information Systems (GIS), Carbon-14 (C14) dating, and web authoring have been critically evaluated in regard to their utility to archaeology, the host of social technologies that comprise new media should be similarly addressed. Even as this dissertation was being researched and written, social media have quickly augmented the dissemination of archaeological information and archaeologists are pushing the boundaries of new media to search for meaning. Through the exploration of this problem I hope to outline a set of best practices for archaeology in new media. My research will hopefully lower the entry point into technology for archaeologists, help archaeologists think about interpretation in new ways, and give chronological depth to a digital media practice that is often only concerned with immediacy.

Chapter Two: How to understand digital artifacts in archaeology

> The surprising conclusion is that objects are important not because they are evident and physically constrain or enable, but often precisely because we do not "see" them. The less we are aware of them, the more powerfully they can determine our expectations by setting the scene and ensuring normative behavior, without being open to challenge. They determine what takes place to the extent that we are unconscious of their capacity to do so (Miller 2005:5).

One of the structuring principles of this dissertation is that digital artifacts, that is, digital media objects made by archaeologists, need to be understood as active members of a network of interpretive meaning. This active membership in the construction of meaning must be emphasized as digital objects are often imagined to be ephemeral or insubstantial, existing somewhere "in the cloud." To understand the relationship between an artifact or an archaeological site and its digital simulacrum, we need to understand that these objects are substantial in their own right. While they have different qualities and affordances, the digital object can be understood and studied not just as a reflection, a snapshot, or an echo of its real counterpart, but as an artifact with its own attending network of meaning. To this end, this chapter describes the understanding of materiality generally and within archaeology, adding the background of Visual Studies to aid in interpretation of digital materials, considers the misperception of digital media's immateriality, and finally, grounds digital materiality within archaeology. By working through the post-disciplinary spaces of Material Culture Studies and Visual Studies, I provide a structure for understanding the digital objects at the center of this dissertation. The case studies contained in chapters four, five, and six contribute to a more nuanced understanding of digital materiality, as specific object biographies of digital objects in archaeology are nonexistent. When taken in concert, this theoretical background, the subsequent emancipatory methodology, and the case studies provided open up space in archaeology to evaluate digital media and to exercise it theoretically.

Materiality

A growing attention toward a "theory of things" has formed into the study of Material Culture, a "diffuse and relatively uncharted interdisciplinary field of study" (Tilley 2006:1). Though certainly diverse, the field has been particularly fertile, with "an impressive volume of research activity, and a flood of books, edited collections, review articles, and papers devoted to this field" (Tilley 2006:1). I do not intend to provide an exhaustive overview of this literature, nor a background of the field, as that has been provided previously (Tilley 2006; Hicks and Beaudry 2010) and would be outside the scope of this dissertation, but understanding the parameters of current work in material culture will help to foreground my study of digital materiality. From this extensive literature I have highlighted the work of several theorists that I explore independently, noting overlaps and intermingling of ideas. I employ the terms *Materiality* and *Material Culture Studies* interchangeably, though they have been deployed in the service of many different objectives. I also use the terms 'thing', 'object', and 'artifact' interchangeably, though various definitions have been given for the terms. In some terminology, a 'thing' is a term "that unlike 'objects', 'artefacts' and 'materiality'…carr(ies) minimal theoretical baggage" (Henare et al. 2007:5). Alfred Gell, in his study of the 'art-object' in anthropology, posits that "the 'things' of which I speak may be understood to be real, physical things, unique and identifiable, not performances, readings, reproductions, etc" (1998:13). Daniel Miller also defines artifacts that exist "as a physically concrete form independent of any individual's mental image" (1987:98-99). Finally, Tim Ingold distinctly defines the terms as such: "Artifacts: objects thought to be made rather than grown; Objects: completed forms that stand over and

against the perceiver and block further movement; Things: gatherings of materials in movement, as distinct from objects" (2012:439). In contrast to these definitions that exclude so-called 'reproductions' or things that are not 'apparently concrete', I argue that digital objects both have material form and are necessary to frame as material things. Perhaps encouragingly, I find the previously provided distinctions to be of minimal use in my discussion of materiality and digital artifacts/objects/things, as I am sympathetic to the stance that humans and objects have agency, and are co-constitutive. The following sections will consider the views of several ke theorists on this domain of inquiry: Daniel Miller, Alfred Gell, Marilyn Strathern, Bruno Latour, and Tim Ingold.

Daniel Miller

In 1987, Daniel Miller investigated "the relationship between society and material culture" as the understanding of material culture at that time was "rudimentary in the extreme" (3). He blames this lack of academic attention to material culture on the rise of industrial production and distribution of goods that is "vast in extent, complexity and diversity compared to any previous era (3). In his *Material Culture and Mass Consumption* (1987), Miller outlines an approach to material culture that has been foundational to most subsequent studies, drawing in elements from Hegel, Marx, Munn and Simmel to contextualize his argument. When there are studies of material culture within social anthropology, Miller identifies their "tendency to perceive objects as being reflective in a relatively passive sense" instead of objects and people being mutually constructed (96). Importantly, Miller notes that the properties of an object's materiality are contextually and temporally contingent and that these associations complicate interpretations of these objects. Miller develops his approach to material culture over more than two decades to incorporate ideas from Bruno Latour and Alfred Gell regarding agency (2005:11) and eventually addresses the internet (Miller and Slater 2000). Overall, Miller has developed the study of material culture more than perhaps any other scholar, and much of the subsequent work in the field interacts with Miller's foundational texts regarding materiality. He has also fully developed the methodology of the object biography, a topic more fully discussed later in this chapter, by examining cell phones (Horst and Miller 2006) and the sari (Banerjee and Miller 2003).

Alfred Gell

In *Art and Agency*, Alfred Gell identified the need for an "anthropological theory of visual art" (1998:1). He wanted to move away from evaluating so-called "primitive art" by aesthetic or strictly utilitarian concerns and focus on the "social context of art production, circulation, and reception rather than the evaluation of particular works of art" (2). Forming this anthropological consideration of visual art, Gell moved from a strictly imagined definition of "art-objects" as "sign-vehicles" that are strictly for representational purposes to emphasizing a holistic view of "agency, intention, causation, result, and transformation" (6) in understanding these art-objects. He broadens his definition of art-objects sufficiently to incorporate most *things*, arguing that these things have agency, not as "'self-sufficient' agents, but only 'secondary' agents in conjunction with certain specific (human associates)" in a kind of second-class agency (17). Gell develops his argument in respect to automobiles and a child's interactions with a doll (as well as animal traps, see Gell 1996), further reinforcing his broad definition of "art-objects" and the applicability of his theory of art to things that most would consider mundane—Miller's "invisible objects". Further, and importantly, Gell points out that "human agency is exercised within the material world" (20), making objects a critical part of interaction, without which he argues that there would be no communication at all. Gell recognizes several important agents in the object's network of meaning; identifying these agents is of particular interest to my analysis of digital objects. The object itself is identified as an *Index* in the

Piercean sense; the index is "a natural sign, an entity from which the observer can make a causal inference of some kind, or an inference about the intentions or capabilities of another person" (13). The index, "by virtue of being a manufactured thing" is made by the *Artist*, and is therefore an index of this maker (23). As Gell notes, "art objects lead very transactional lives" and being made by the artist is only the first step in their uselife (24). The subsequent *Recipients* are also important agents, as they translate the object into their own meaningful context. Finally, the object indexes the *Prototype*, or the idea or original representation of the object. These agents are important to disentangling digital materiality and will be revisited in the concluding chapter of this dissertation.

Important critiques of Alfred Gell's approach to art-objects in anthropological study have emerged in the time since the publication of *Art and Agency*. In particular, Howard Morphy finds two major points of contention with Gell's approach: that Gell's theories have a difficult time "coming to terms with complexity" and that his definition of the central focus of anthropology is too narrow (2009:6). He argues that in giving objects agency Gell "obscures the role of human agency in artistic production and fails to provide a theoretical basis for understanding how art can be a mode of action" (6). Interestingly, Morphy identifies the possibility of "agentive objects existing in cyberspace and in the realm of robotics and artificial intelligence" yet excludes other objects from the role of agent (6). While Gell's arguments could certainly have been developed further, Morphy makes the critical failure of perspective when he writes, "What human beings think an object is capable of doing needs to be separated from that which it is actually known that objects can do," (6) effectively removing the ethnographer from the realm of human beings as an arbiter of knowledge about the "actual" capability of objects. Robert Layton also provides a critique of *Art and Agency*; Layton disputes Gell's move away from aesthetics and finds his reliance on Peircian abduction, wherein the conclusion is not guaranteed by the premises, weak (2003). Yet Layton supports Gell's positioning of agency being derived from "a position in a network of social relationships" and recognizes that we transact in a material world, in the "objects, traces, and leavings that we generate during our lifetime" (458). Both Morphy and Layton want to distinguish art as a separate category of object; this is perhaps why anthropologists who do not specialize in art find Gell's work incredibly useful while his critics are primarily anthropologists who study art (Morphy 2009:5). Sadly Gell died of cancer shortly before publication of *Art and Agency* and could not engage with the critiques and further develop his theories.

Marilyn Strathern

In her discussion of the Melanesian and European understanding of events and cargo culture, Marilyn Strathern discusses the idea of the artifact or performance as "an image," and that these images "contain events" (1990:25). These "images" are "not reducible to the coding explanations that accompany (them)" (35). Strathern elaborates on the case of the Sabarl axe, an axe with a triangular shape caused by the angle of the blade and haft and "commemorates the support that kin gave in a personal life" (34), the meaning of which is enacted by performance, assemblage of other artifacts, or the spoken word (36). Material culture, or "images" are "reflected self-knowledge" for the Melanesians (36). Strathern then expands on the relationship of socio-cultural anthropology to material culture, primarily that before the late 1980s, material culture was seen as "*merely illustration*" of cultural frameworks (38). Material culture has proven problematic to understanding Melanesian culture, as "an axe 'explained' as the elbow of exchange partnerships is re-located within a framework which occludes both other frameworks and its significance as a synthetic image in itself…the whole perception is now the object plus its explanation" (39). Importantly, Strathern extends her concept of the artifact to performances and events, and "to talk about people using an event the way they may use a knife, or creating an occasion the way they create a mask" (41). Her

conceptualization of the gift as producing social relations was taken up by other socio-cultural anthropologists, including Alfred Gell. Strathern places material culture back into the oeuvre of socio-cultural anthropologists by foregrounding its importance explicitly—objects that contain events and must be attended to within the conceptualization of culture and society.

Bruno Latour

Latour traces the rise of modernity as the beginning of what he calls "asymmetry", or the separation of humans from 'nonhumanity' including "things, or objects or beasts" (1993:13). He queries this "modernity" along both spatial and temporal lines and offers to "regroup contemporary elements along a spiral rather than a line" leaving a future "in the form of a circle expanding in all directions" wherein "the past is not surpassed but revisited, repeated, surrounded, protected, recombined, reinterpreted and reshuffled" (75). For Latour the dualistic categories of "nature" and "society" are false and limiting, and for there to be symmetry it must be attained through the study of "quasi-objects," after Michel Serres. Quasi-objects are between the two poles of "nature" and "society," combining the "soft" elements of society and the "hard" parts of nature (55). These are the "missing masses", the objects that social scientists have ignored, despite the missing weight of their absence (Latour 1992).

The two most evocative examples that Latour uses to illustrate the agency of these objects are the door minder and the Berliner key. When the door minder (a device that automatically closes doors) at the La Halle aux Cuirs at La Villette in Paris "went on strike", causing a sign to be posted "The Groom Is On Strike, For God's Sake, Keep The Door Closed" Latour seized the opportunity to interpret the minder as one of the "missing masses" that brought together "labor relations, religion, advertisement, and technique" in this unassuming device (1992:153). We have delegated the action of closing the door to this object so that we do not have to think about closing the door nor do we depend on another human to do so, yet when the door minder goes on strike, the power of these objects becomes immediately visible. Latour (1992) also describes the Berliner key, an oddly-shaped key with two key ends instead of one. This key insures that the door will be locked behind the occupant of the room, as it disallows its removal from the keyhole until the key is pushed entirely through the door, out the other side, and then turned, locking the room (174). The key has been inscribed to remove the choice of locking the door from the holder of the key, unless one breaks the door. Latour describes an archaeologist attempting to understand the key, coming to many incorrect conclusions regarding the ritual function of the key, or its reflection of the supposed nationality of the maker (2000). Yet the key does not "'express', 'symbolise', 'reflect', 'reify', 'objectify', 'incarnate' disciplinary relations, they make them, they form them" (19). In this manner, the key "assumes all the dignity of a mediator, a social actor, an agent, an active being" (2000:19).

Latour then develops the idea of objects being active agents through actor-network theory, or ANT (2005). Latour contrasts ANT with work done by the "sociologists of the social" who "glide like angels, transporting power and connections almost immaterially," while scholars who approach actor-network theory must "trudge like an ant, carrying the heavy gear in order to generate even the tiniest connection" (2005:25). A good ANT analysis should allow the object/actors to be stronger than the analyst (30). To perform these analyses, Latour identifies four "sources of uncertainty" that must be addressed. The first source of uncertainty is that there are not 'groups' as such but only 'group formation'. The second source of uncertainty is that that action is not performed by actors, who are "moving target(s) of a vast array of entities swarming toward it" (46). The fourth source of uncertainty are the epistemological difficulties with scientific 'facts', which make 'risky accounts of our research that can "easily fail" (133), and, importantly, that objects have agency. Ultimately, ANT

is inclusionary—Latour seeks to include objects as an active part of the social sphere. The affordances of objects "authorize, allow, afford, encourage, permit, suggest, influence, block, render possible, forbid", actively interacting with humans instead of "serving as a 'backdrop' for human action" (72). Latour identifies several occasions that makes these objects more visible; when there are innovations, through distance, breakdowns, and using archives to identify "the state of crisis" in which the objects were born and counter-factual histories of the objects (80-82). Developing his ideas from ANT, Latour then explores the idea of *dingpolitik*, experimenting with the things in the political sphere, using the question to ask "What would an object-oriented democracy look like?" (2005a:14). To answer this question, he 'assembled an assemblage' for an exhibition, "a fragile and provisional pandemonium" as proof that "politics is no longer limited to humans and incorporates the may issues to which they are attached" (40-41).

Tim Ingold

In his approach to materiality, Tim Ingold further disrupts the divide between nature and society; in particular he queries the designation of artifacts being things that are made and not grown (2000). A living thing is formed from genetic material that specifies its shape and features, but the perception of an artifact is that "form is applied from without, rather than within", implying the existence of a surface that must be transformed into another shape (51). Yet there are objects that explicitly deny this dichotomy; Ingold uses the example of a beehive as an artifact that is "grown" from the actions of non-humans. The intentionality of the bees is seen as a "process that goes on within nature" while humans enact an ideal upon nature (52). This what Ingold considers to be the mistake of the anthropologists and archaeologists when discussing material culture; material and culture do not overlap or intermingle, the form and not the substance is attributed to culture (53). In this way, Ingold reinforces the necessity of going beyond the study of the surface of the object to the study of materials and their properties. To emphasize this necessity, Ingold describes weaving a basket out of fibrous plants as an analog to the bee hive; while "the flint knapper chips away at the surface of stone, the carpenter carves and chisels the surface of the wood…the basketmaker does nothing to the surface of her fibrous material…the surface of the basket is not so much transformed as built up" (55). The final form of the basket is not born whole from the mind of the maker but "comes into being through the gradual unfolding of that field of forces set up through the active and sensuous engagement of practitioner and material" (57).

Ingold continues his investigation of materiality through the critique that the "ever-growing literature in anthropology and archaeology that deals explicitly with the subjects of *materiality* and *material culture* seems to have hardly anything to say about *materials*" (2007:1). He makes the suggestion that instead of speaking to each other at conferences that the anthropologists who were interested in "material composition of the inhabited world (could benefit) by engaging quite directly with the stuff we want to understand" (3). He foregrounds the difficulties in sorting things into artifacts and natural phenomena, or as material versus immaterial objects, finally eschewing the term materiality altogether, stating that it is an illusion (7). Studies of material culture have focussed too much on "consumption rather than production" while Ingold is concerned with transformation and fluxes, an attention to things as they constitute the entire world. Materiality, in the course of time, loses to the material when objects degrade to their constitutive parts (9-10). In that previous theorists of materiality have attributed agency to objects, Ingold situates this as an imaginative, magical action, citing the work of Peter Pels (1998) in characterizing the agency of objects as *animist*, that things contain a soul, or *fetishist*, that "the spirit that enlivens them is not *in* but *of* matter", acknowledging the power of the materials (12). Importantly, he states that "bringing things to life, then, is a matter not of adding to them a sprinkling of agency but of restoring them to the generative

fluxes of the world of materials in which they came into being and continue to subsist" (12). This world of materials is not a fixed reality, but a constantly unfolding and regenerative environment (14). The attributes of things are not an essential list of traits, but are "processual and relational" (14).

Responding to Ingold's critique of Materiality, Christopher Tilley objects to a limited focus on the "brute" materials and argues that materiality enables us to understand the meaning and significance of materials to people and sociopolitical relations (2007:17). Tilley re-emphasizes the need for understanding materials in relation to people, that they are "implicated in social acts and events and the stories of people's lives, in both the past and the present" (18). The concept of materiality is useful to situate materials in relation to objects, "landscapes, persons and their doings (to develop) a holistic and conceptual theoretical and interpretative framework (18). Carl Knappett typifies Ingold's approach to materiality as "deeply asocial" and likens it to Lemonnier's desire to study the properties of materials and actors independently, in contrast to Latour's approach in studying the composite created by humans and objects (2007:20-21). In response to Ingold's desire to return objects to the "generative fluxes of the world of materials" (Ingold 2007:12), Knappett wonders if the concept of networks would be useful, as network thinking encourages a focus on connections as well as entities (Ingold 2007:22). Daniel Miller takes issue with Ingold's "dualism of his own creation, between substantive concern with the material processes through which objects pass and of which they consist, and some kind of mentalist imagination and conceptualization of objects" (Miller 2007:24). Miller further critiques Ingold's stance as being out of touch with ethnography, as the idea of materiality is not a static concept across cultures, using the example of Hindus and Buddhists to illustrate the ideas of immateriality that ethnographers must come to terms with (25). Ingold responds to his critics, arguing that people are deeply implicated in his material world, as "complex bundles constituted by the flows and transformations of materials across the interface between their bodily substances and the media that surround them" (2007a:31). At Knappett's suggestion of networks, Ingold substitutes the idea of *meshworks* that are not "interconnected points but of interwoven lines…every line is a relation, but the relation is not *between* one thing and another" but are instead "a line *along* which materials flow, mix and mutate" (35). Things are not entangled in relations, but each thing is an entaglement in itself (35). Ingold ends his response by stating that he intended to "demonstrate that the world of materials is not only a world we can think *about* but one that we can think *with*" and that the aim of the study of materials should be framed within an observational practice, grounded in experiential material-based data (36).

In tracing the thoughts of Miller, Gell, Strathern, Latour, and Ingold, I have provided a limited context for the study of materiality and material culture. Within this context there are several different stances regarding materiality and what the study of materiality implies for objects and humans. Gell allows that objects have agency, albeit secondary agency provided to them by the humans they interact with. Latour allows objects full participation in a social world that is interconnected by networks of meaning. Ingold prefers to conceptualize meshworks in contrast to Latour's networks, adding an appealing aspect of untidiness to what can be oversimplified with simple lines connecting objects. Each of these authors has engaged explicitly with a single object, sometimes several different objects at different times to demonstrate the power of material objects to construct meaning. I will engage further with the concept of object biographies later in this chapter, as my three case studies of digital objects relies heavily on this previous work.

Archaeological Approaches to Materiality

Building on previous work from these theorists who have engaged with materiality, I now turn to more explicitly archaeological approaches to the subject. This is a somewhat artificial barrier, as archaeologists have been deeply implicated with material studies arguably for the duration of the existence of the field. Indeed, Tim Ingold's research does not hold strict boundaries between anthropology and archaeology and most of the responses to his polemic about studying materiality were from archaeologists, as it was published in the journal *Archaeological Dialogues* (Ingold 2007). Still, this separation allows me to draw attention to the particular role that archaeologists have in their engagement with materiality. It is not possible to fully explore the literature regarding materiality within archaeology; indeed it can be difficult to draw boundaries around the study of materiality within archaeology especially with Ingold's approbation to attend to materials and material sciences. Rather than define the stances of individual archaeologists, I will provide a brief overview of groups engaging with materiality: the University College London school of material culture studies/the phenomenological perspective, (Buchli 2007:181), the symmetrical archaeologists and the object biographers.

Materiality, the Phenomenological Perspective

The University College London school of material culture studies was founded by Daryll Forde who started a series of courses on the history of material culture; these courses were taken over and embellished by Peter Ucko who incorporated more archaeology, bringing in Nicholas David, Ruth Tringham, Barbara Bender, and Michael Rowlands. Barbara Bender and Michael Rowlands later took over this course and brought in Daniel Miller and Christopher Tilley (Ruth Tringham, pers comm). Christopher Tilley, in his long-term exploration of the phenomenological perspective in archaeology, has placed objects as active agents interacting with an active landscape. As Tilley has produced the bulk of the phenomenological perspective, I will focus primarily on his work. Tilley believes that things, places, and landscapes should be regarded "as agents which actively produce (social) identity" (2004:31). Making connections between ourselves and the world is the way we produce human meaning (2004:31). In Tilley's work there is a move away from hypothetical case studies and vague theorizing to interpreting archaeological landscapes within a theoretical framework. He disambiguates the theoretical point of view which is that "it is obvious that people do encode metaphorical meanings into things which would themselves have no meaning" but from the methodological point of view "things once created work themselves to reproduce or transform the social contexts in which they are encountered and move" and that they are "active rather than passive and dialectically related to their social conditions of existence" (Tilley 2000:76). Tilley's (2004) *The Materiality of Stone* explored "the multiple ways in which prehistoric social identities were created or sustained, reproduced or transformed through the agency of stones" in England (2004:217). In his study of megaliths, he comes to some of the same conclusions as Tim Ingold, in that a sense of place is "fluid and flowing" and transcends distinctions between 'nature' and 'culture' (2004:220). Indeed, though Tilley wrote a critique of Ingold's *Against Materials* article, Tilley concedes that he agrees with Ingold and that perhaps "the differences between his position and mine may be more apparent than real" (Tilley 2007:19). In his chapter, *Phenomenology and Material Culture*, Julian Thomas (2006) explicitly ties together Ingold and Tilley's work, using Ingold's example of weaving a basket and Tilley's phenomenology of landscape as examples of the phenomenological approach to material culture. Olsen criticizes the phenomenological approach in general and Tilley's approach in particular as a "domesticated and quite harmless approach" (2007:593).

Symmetrical archaeology

Bjornar Olsen (2003) traces a history of archaeologists' engagement with things; that during the early days of archaeology, "archaeologists were in love with things" but as social science turned away from material culture, the "new" archaeology refocussed on artifacts as a means to study past cultures but having no agency in and of themselves (89-90). In post-processual archaeology the textual analogy became important but Olsen argues that "material culture is in the world and plays a fundamentally different constitutive role for our being in this world than texts and language (2003:90, see also Olsen 2006). Olsen calls for a "defense of things" wherein archaeologists defend the subaltern objects that have been sidelined and ignored (100). Following Serres and Latour, Bjornar Olsen, Michael Shanks, Chris Witmoor, and Tim Webmoor espouse what they call a "symmetrical archaeology" (Olsen 2003, 2007, 2010; Shanks 1998, 2007; Witmore 2006, 2007; Webmoor and Witmore 2008). Symmetrical archaeology is "founded on the premise that things, all those physical entities we refer to as material culture, are beings in the world alongside other beings, such as humans, plants and animals (Olsen 2003:88). This symmetry between people and things is revealed in decay and ruin, wherein the boundaries are dissolved as "people and the realm of the social become material, and the object world, nature, acquires a history (of different relations with people)" (Shanks 1998:22). The practice of symmetrical archaeology does not privilege the past over the future, highlighting "unbalanced and dualistic relationships" such as those between "science and popular superstition, between professional and popular archaeology" to achieve a consonance between these dualisms (Shanks 2007:590-591). The four major attitudes of symmetrical archaeology are "process, creativity, mediation and distribution" (591). The past and the present are co-constructed through an iterative process. While Witmore (2007:547) claims that symmetrical archaeology is of wide import with "repercussions across the whole of the discipline of archaeology", it is unclear the impact on archaeological practice that it has had since its advent[1].

Object Biographies

As different approaches to materiality have emerged from both within and without archaeology, many have found it useful to explicitly engage with ideas regarding materiality in the creation of object biographies, an exploration of what is usually a single object, or a prototypical example of that object. Igor Kopytoff (1986) identifies the strict separation of people from things as a Western trope and suggests that similar questions can be asked about objects that are asked about people. For example,

> "What, sociologically, are the biographical possibilities inherent in its "status" and in the period and culture, and how are these possibilities realized? Where does the thing come from and who made it? What has been its career so far, and what do people consider to be an ideal career for such things? What are the recognized 'ages' or periods in the thing's 'life,' and what are the cultural markers for them? How does the thing's use change with its age, and what happens to it when it reaches the end of its usefulness?" (1986:66-67).

Kopytoff then uses the example of a Suku hut in Zaire to exhibit the complex relationship between social relations and the appropriate use of decaying vernacular architecture. An appropriate or inappropriate use of the hut in one of its many stages of use conveys information about the owner of the compound, the person staying in the hut, and the relationship between this owner and the guest. In this way, "biographies of things can make salient what might otherwise remain obscure

[1] Their jointly authored book, Archaeology: The Discipline of Things (Olsen, Shanks, Webmoor, Witmore 2012) was not available in time for consideration in this dissertation.

(1986:67). While Kopytoff[2] was framing these cultural biographies from an economic point of view, archaeologists have taken the idea of object biographies to explore ideas about archaeological artifacts and architecture. Ruth Tringham cites Allan Pred's theory of the production of place and his recognition of the life-histories of objects as an appropriate means of interpretation as she examined the houses at Opovo (1994; 1995). In contrast to the approach of processual archaeologists, Tringham studied the house as "an individual, as a dynamic entity whose every month of life is significant for the men and women who act in and around it" (Tringham 1995:98). Michael Shanks further complicates the object biography by framing the artifact "as a multiplicity, an historical and heterogeneous assemblage" (1998:24).

Explorations of an artifact's life-history have since become a popular theme in archaeology and has been used widely across temporal and spatial ranges of sites. Still, these Object Biographies tend to be somewhat isolated analyses. Chris Gosden has made an effort to connect these life-histories within assemblages, to broader landscapes and changes in populations. Gosden expands upon the work of W.J.T. Mitchell (1996) in asking "What do objects want?", in his attempt to "take the desires of objects seriously at an analytical level, as these are already taken seriously in everyday life" (Gosden 2005:196). He examines the so-called Romanization of Britain through the analysis of the form of objects, the effect of objects, and their genealogy and source (198). In particular Gosden examines Roman architecture, fibulae, and pottery to query the identity and internal logic of Romano-British culture, finding that instead of a homogenizing period of Romanization, material culture was markedly diverse in variety, fluidity and regional difference (209). Carl Knappett explicitly places objects within a network of meaning wherein humans and objects are not separate, but are both actants, "nodes in complex technological networks" that include "modems and motorways" (2002:98; see also Knappett 2004). Knappett employs Latour's Actor-Network Theory in conjunction with sociological network analysis, citing three methodological advantages: networks "force us to consider relations between entities", are "inherently spatial, with the flexibility to be both social and physical," and can "incorporate both people and objects" (2011:10).

Ultimately, object biographies must move within larger networks (or Ingold's meshworks) to derive meaning on multiple scales. Yet successful object biographies are more than a linear account of an artifact, told as an independent narrative or within a larger context. Jody Joy moves the object biography out of this linear account to that of a non-linear relational biography that consists of "a series of connected jumps as the object becomes alive within certain clusters of social relationships and is inactive at other points in time and space, undergoing a series of different lives and deaths" (2009:544). Joy seeks to "re-create the drama of prehistoric object lives" by approaching artifacts in creative ways, yet provides a fairly standard biography of the Portesham mirror, an artifact from the British Iron Age (2009). Though the Portesham mirror is now accessioned in the Dorset County Museum, this is not regarded as a worthwhile episode in its series of lives and deaths. I argue that successful object biographies are necessarily reflexive, incorporating both the author's experience of the artifact as well as a multimedia account to integrate multisensorial information about the object.

The field of Material Studies/Materiality provides "a rock-solid, firmly grounded field for interdisciplinary enquiry" (Hicks and Beaudry 2010:2). This post-disciplinary *material turn* calls to mind the *visual turn* that has emerged from cultural studies, with similar "thematic interests and theoretical concerns - representation, semiotics, ideology, agency, identity, memory, production and consumption" (Hamling and Richardson 2010:10) While few have crossed the boundaries and explored these two post-disciplinary areas of interest in concordance, digital materiality can occupy a

[2] See also Appadurai 1986.

productive space in this complex dialogue. Indeed, while Visual Studies has been critiqued for its focus on visuality with an apparent disregard to other properties of objects, Materiality can correct this sensorial imbalance, especially when the work of Tim Ingold and Christopher Tilley is attended. Further, Visual Studies makes "an important contribution to the study of material culture in helping to understand the operation of non-textual forms of communication and the nature of experience in the encounter between people and things" (Hamling and Richardson 2010:11).

The Visual Turn

Along with the growing critical attention by Barthes and Sontag, visuality[3] became a topic of inquiry in a number of fields, most notably in anthropology, sociology, and art history. Each field has developed its own narrative regarding the historical trajectory of the awareness of the visual within the confines of the individual discipline, each remaining largely in isolation until the synthesizing efforts of visual studies in the late 1990s and early 2000s. Even in isolation, similar developments mark each field, and each became more cohesive in the 1970s and early 1980s, at the height of the excitement regarding post-modernism reaching the social sciences. Taken as a whole, this increase in attention to visual images comes as a reaction to the perception of an increase in visuality in modernity. Visual images are seen as "dominating" oral and textual media and thus "our culture is an increasingly visual one" (Mirzoeff 1999; Sturken and Cartwright 2001:1).

Alternately defined as this increase in visuality[4] (Crary 1990) and as the increase in academic attention surrounding visuality, the visual turn is a much-debated concept at the center of the burgeoning field of visual studies. Martin Jay pinpoints the visual turn as occurring on April 30th, 1988, with the Dia Art Foundation's 'Discussions in Contemporary Culture' and the subsequent text *Vision and Visuality* (Jay 2002). Whatever the lineage, visual studies or visual culture emerged as a field in a confluence of disciplines, technology, and theory, but with an underlying urgency of interpretation as the variety of images being created seemed to expand exponentially. While determining the veracity of the claim of an increase of visuality is beyond the scope of this chapter, the perception of this increase is important to highlight, as it is an underlying assumption that supports the creation of specific methodologies to tackle what is seen as a crisis of information overload in everyday experience.

First identified as a sub-field in 1975 by John Collier, visual anthropology initially concerned itself with the visual production of anthropological knowledge, then expanded in the 1980s into studying visual systems and visible culture, in effect "both produc(ing) visual texts and consum(ing) them" (Morphy and Banks 1997:1-2). Sol Worth explains this change of focus as a shift from visual anthropology to the "anthropology of visual communication", the key of which being the "scientists' use of the camera as a tool to collect data about culture, and studying how the camera is used by members of a culture" (1981:190). By the 1980s, with several periodicals being published, the production of a number of popular ethnographic films, and the establishment of several graduate-study academic programs, visual anthropology was growing in popularity and visibility (Ruby 1996). Large strides forward in the simplification of video editing and photography alleviated

[3] For discussions of the term "visuality", see (Mirzoeff 2006 and Crary 1990).

[4] Mitchell has since refuted the use of his phrase, "pictorial turn" as a unique moment in the modern era, but that it is "a diagnostic tool to analyze specific moments when a new medium, a technical invention, or a cultural practice erupts in symptoms of panic or euphoria (usually both) about the visual" (2002:173) and that the "supposed hegemony of the visible in our time is a chimera that has outlived its usefulness" (174).

technological hurdles in ethnographic documentation (Henley 2000). Still, even with all of these developments, "Mead's concern (…) to advocate a more respected status for the visual approach in a 'discipline of words' we are now a quarter of a century later, pleading for more attention by anthropologists to the explosion of the visual in contemporary cultural representations (Marazzi 1999:391). The production and consumption of ethnographic film still dominates visual anthropology discussions, with large debates regarding the production and dissemination of these films, however a greater examination of the ethnographic film process has helped highlight performance and materiality in anthropology at large (Ruby 2000:256). As part of his look forward in visual anthropology, MacDougal argues for "an intellectual foundation for visual anthropology by enabling a shift from word-and-sentence-based anthropological thought to image-and-sequence-based anthropological thought" (MacDougall 1997:292). To this end, Julianne Newton created a system of symbolic notation for photography, in essence a visual shorthand for analysis (Newton 1998). While her ultimate aim is to establish appropriate behavior for taking visual data, this system of shorthand connects the symbolic within photography with a symbolic language that can be used to annotate performance viewed live. Increasingly anthropologists are studying and adopting new technologies for digital dissemination, the foremost of these being the world wide web (Pink 2001). Indeed this is considered one of the "ways forward" in visual anthropology, and to be among the various possible new directions after thirty years of existence as a sub-field (Pink 2006). It is with this in mind that I will outline the growing attention to visuality in the fields of anthropology and sociology, then sketch an outline of Visual Studies that will enable further contextualization of the study of digital artifacts as visual, material objects.

Visual Anthropology

Visual anthropology, continually cast as a problem child within the wider field of anthropology (MacDougall 1997), is the anthropological study of visual images and culture and the production of such. Broadly involved in photography, ethnographic film, virtual and scientific imaging and now dance, material studies, and other performative culture, visual anthropology is "as much concerned with the presentation and consumption of anthropological knowledge as with the production of that knowledge" (Banks and Morphy 1997:1). Visual anthropology traces its history to early ethnographic films and photography, yet has traditionally been met with resistance for a variety of reasons, ranging from economic to equipment-related training and difficulty, to an ethical ambiguity associated with ownership of visual representations. The literature is rife with complaints of marginalization from the beginning of the sub-field's distinction, such as Piette's statement, even as late as the 1990s "it is evident that photography is not highly valued in social and cultural anthropology as a basis for information or a research tool, whereas such other disciplines as geology, archaeology, and astronomy or even medicine have an indispensable tool in photographic images and use them according to well codified methodology (1993:157). Margaret Mead's introduction to *Principles of Visual Anthropology* implores enthnologists to move beyond the "pencil and notebook" to incorporate photography and video into their practices, citing "gross negligence" and the significant loss of information otherwise (Mead 2003). Several anthropologists including Mead (Boas, Griaule, Bateson, Spencer, Haddon) had been early users of film and photography as ways to document "disappearing" cultures and practices, but such projects were often seen to be too expensive, too specialized, and potentially harmful to the filmed subjects (Mead 1975). While there was some early attention to filmmaking, there were "virtually no programs, publications, or regular meetings on ethnographic film or visual anthropology" until the Program in Ethnographic Film was established, which eventually became the Society for the Anthropology of Visual Communication in 1973 (El Gundi 1998:460).

Visual Sociology

During the 1970s, while visual anthropologists were focusing on film, sociologists were continuing to develop photography within the empirical paradigm of their field[5] (Harper 1998 : Pink 2001). "Visual sociology is both practically and intellectually related to visual anthropology," (Tomaselli 1996:19) in their coming together for various meetings in the 1980s and 1990s and trading analyses. While the origins of visual sociology could be traced back to John Collier's, *Visual Anthropology: Photography as a Research* Method, or back to Dorothea Lange's 1930s era photographs, or even the muckraking photographs of the 1890s, Curry uses the establishment of the Society for the Anthropology of Visual Communication in 1972 (1984:15).[6] The official journal, *Videosociology*, was the first of several attempts at visual sociology journals, including *Studies in the Anthropology of Visual Communication* (1974-1980), *Studies in Visual Communication* (1980-1985), *Visual Sociology Review* (1986-1991), *Visual Sociology* (1991-2002) and *Visual Studies* (2002-current). This procession of journal titles attests to an ongoing remodeling of the definition and goals of visual sociology since its inception.

In the early years of the sub-discipline, a sociological photograph was considered different than documentary photography in that it was "theory-laden" and that photography "serves sociologists to illustrate those wrongs that exist and serve perhaps to stimulate ameliorative action on the part of the viewer" (Campbell 1983:9). Further, photographs were taken as "exact images of things" and served as "direct physical traces of objects, as firsthand eyewitness accounts" (10) by many sociologists, with the marked exception of Howard Becker (1986), who noted their construction by the photographer. Sociologists used photographs to encounter, illustrate, and understand social problems such as gender inequity (Goffman 1979; Synnott 1983), transient workers (Harper 1982), and historical inequity in labor relations (Margolis 1985). Many remained within this framework, with little self-reflexivity and a belief in the objectivity (or irrelevance) of images within research. However, some visual sociologists have developed critical approaches to images, and while progress within the field was slow moving throughout the 1980s and 1990s, the 21st century has seen rapid development in theory and practice. Still, most research is performed within "a traditional qualitative framework rather than adopt(ing) ideas emanating from postmodern critique" (Prosser 1998:115).

While the desire for an empirical grounding still underscores many visual sociological research interests, there is a growing prevalence for giving studies with a postmodern influence equal time. Semiotic analysis exists in both empirical studies and in postmodern critiques in visual sociology, but is treated somewhat differently in each venue. This reflects a more general schism in visual sociology, alternately characterized as between qualitative and humanistic studies (Chaplin 1994) and between symbolic and empirical interpretive schemes (Harper 1998). At its extreme, Douglas Harper situates postmodern critique as "the greatest challenge to visual sociology" (1998:36) but that this selfsame critique makes visual sociological methodology more creative and rigorous, to "fashion a new method based on the understanding of the social construction of the image and the need for collaboration between the subject and the photographer" (2005:747).

[5] Visual sociologists were also extensively exploring visual art, and they were indeed the leaders in applications of postmodern thinking to sociological visual subjects, but that is outside of the scope of this review.

[6] Alternately, visual sociology could be seen as one of a host of reactions against functionalist sociological thought.

Visual Studies

Visual Studies, is itself a confluence of art history, cultural studies and literary theory (Elkins 2003:4), and I will further conflate it with Visual Culture, which stems from 1950s England and 1990s United States, respectively. The differences between these three fields have become obscured over time, and I will be using the term Visual Studies for the purposes of this review. While there are forty years between the founding of the various fields, the growing prevalence of Visual Studies and Visual Cultures academic programs can be traced to the visual or pictoral turn of the late 1980s. Interdisciplinary to its core, visual culture is "a new field for the study of the cultural construction of the visual in arts, media, and everyday life" that draws from art history, anthropology, film studies, linguistics, and comparative literature through the lens of poststructuralism (Dikovitskaya 2005). "Rather than being a single discipline, Visual Culture Studies is a hybrid, an inter- or multi-disciplinary enterprise formed as a consequence of a convergence of, or borrowings from, a variety of disciplines and methodologies (Walker and Chaplin 1997:1). Within this broad definition, the exact parameters of visual studies are hotly debated.

A 1996 questionnaire in the journal *October* elicited opinions regarding what was then the emerging field of visual culture (Alpers, et al. 1996) and James Elkins summarizes the responses to the questions as characterizing visual culture as "disorganized, possibly ineffectual, illegitimate, and even misguided extension of art history and other disciplines" and quotes Rosalind Krauss as proposing that "visual studies is really only training students to become better consumers" (2003:18). W. J. T. Mitchell situates the field of visual culture as an instance of Derrida's 'dangerous supplement,' disrupting traditionally defined disciplines with an ambiguous interdisciplinary stance, indicating an "incompleteness in the internal coherence of aesthetics and art history" and that it "opens both disciplines to outside issues that threaten their boundaries" (2002:167). Further, Mitchell confronts the myths of the new hegemony of visuality in modernity and other pervasive fallacies in the field. In their introduction to the comprehensive series, *Visual Cutlure: Critical Concepts in Media and Cultural Studies,* Joanne Morra and Marquard Smith posit that "asking the question 'What is Visual Culture Studies?' *in any given instance* is always more valuable than finding an answer to it" within any piece of literature that intends to use visual culture as a means to an end (emphasis theirs, 2006:11). Visual studies is more defined by "a lack of interest in several subjects—older cultures, formalism, and canonical works of art" (Elkins 2003:17) or as "as a tactic, rather than an academic discipline" (Mirzoeff 1999:11). The parameters are open to interpretation (and, it follows, critique) by each individual researcher who desires to work within the paradigm.

The benefit of struggling for disciplinary definition is a much more nuanced approach to methodology, though the number of essays regarding what visual studies could be or what it is seems to exceed the number of cultural studies specifically performed within the corpus of visual studies. Backgrounded by such a diverse array of disciplines, visual studies encompasses work on feminism (Jones 2003), sexuality (Horne and Lewis 1996), ethnicity (Doy 2000), and disability (Thomson 1997). The broad range of work or "sheer disarray" apparent in the field makes these analyses possible, or in the words of Elkins, "too easy" in that "the scattered subjects and untheorized choices of methods make it fairly simple to generate texts and unrewarding to compare one study to another" (2003:63). Indeed, in my survey of visual anthropology, visual sociology, and visual studies, very few of the researchers engage with qualitative or quantitative methodologies that would serve to further instantiate their claims.

In this brief review of the visual turn I hope to highlight potential avenues of interdisciplinary space between visual studies and material culture studies. Using techniques gleaned from an intensive engagement with both fields can reveal a productive approach to digital artifacts. For example, while understanding the place of a digital photograph of a coffee pot in Jordan in Chapter Four, I employed a qualitative and quantitative approach to assessing the visual content of the photograph. I provided the context of the photograph and traced the network of meaning surrounding the photograph with a non-linear object biography. Following Ingold, I argue that material culture studies do need analyses of the materials of objects, and one of the crucial materials of digital objects is the interaction with visual culture. Visual studies provides the toolkit for understanding the visual impact of digital objects, while materiality grounds that understanding, breathing life into our analyses.

Understanding the materiality of digital artifacts

"Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts…A graphic representation of data abstracted from banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding." William Gibson, Neuromancer (1984:69)

Early conceptualizations of the internet and digital media were distinctly disembodied; fantasies of leaving flesh behind and ascending to a plane of pure information was a common trope in science fiction, cyberpunk, and early proponents of virtual reality (Bolter and Gromala 2003). Hayles ties the erasure of embodiment in cybernetic posthumanistm to the liberal humanist subject, as the "liberal subject possessed a body but was not usually represented as being a body" (1999:4). This idea of the material becoming immaterial is echoed in early reactions to digital photography, that the "real" was jeopardized by the reproducibility and easy manipulation of these images (see Chapter Four). Virtual reality was also seen as a break from the "real." Jay Bricken, an early virtual reality enthusiast, stated, "VR is not a physical simulation…throw away the constraints and you're in something that's a bigger space than physical" (Quoted in Woolley 1992:21). Digital media is seen in contrast to the material world; while the material world "carries weight—aura, evidence, the passage of time…authority, knowledge, and privilege", digital media is characterized as "immediate, surface, temporary, modern, popular, and democratic" (Witcomb 2007:35). This misconception of the immateriality of digital media is reified in the prevalence of "cloud-computing", wherein information is not stored on a local device, but accessed and manipulated over the internet. This vision of whisper-thin, fast and invisible computing was recently disrupted by a series of photographs by Connie Zhou. These photographs depicted the massive interiors of Google data centers, filled with blue lights, tubes, wires and servers that dwarfed the humans that stood near them for scale; the physicality of these places "where the internet lives[7]" was inescapable. Even Daniel Miller (2005:7) is stymied by the apparent immateriality of digital media when he asks, "is an ephemeral image, a moment in a streaming video, a thing?…I haven't the least idea" (2005:7). Digital media, unlike Miller's example of immateriality—non-existent fashion movements and objects not existing in the archaeological record (Miller 2005:20-21)—is corporeal, though multiple.

[7] http://www.google.com/about/datacenters/gallery/#/

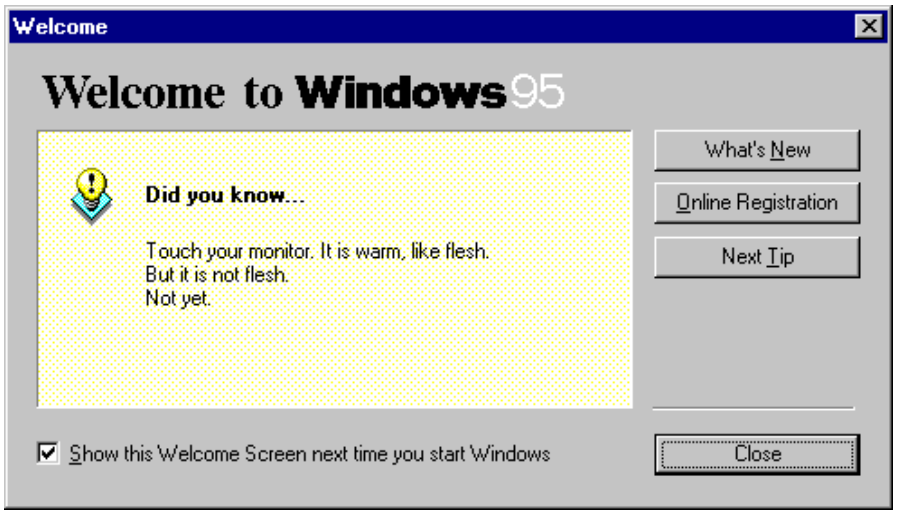


Figure 2.1 From http://windows95tips.tumblr.com, by Neil Cicierega

> *What would it mean to talk about materiality in an era in which simulations are everywhere around us?"*
> N. Katherine Hayles (2002:21).

The materiality of digital artifacts is expressed as an assemblage, in that while the numerical code that comprises the digital artifact (Manovich 2001:27) could be extracted, these bits and bytes must be viewed in a mediated form, whether that is a computer screen or a paper print-out of 1s and 0s that represent the pixels in the image. Taking again the example of digital photography, characterized as lacking any kind of materiality (Edwards 2002:74), it is possible to trace what seems to be intangible. This can be characterized as the "tactile fallacy" or "the assumption that electronic objects are immaterial" because we cannot touch them (Manoff 2006:316, citing Kirschenbaum 2005).

The file created by the digital camera as it digitizes the light, the photograph, is written to the memory in the camera. This information can then be transferred to the memory in a computer, and copied, manipulated, or printed out. In this way, the materiality of the digital photograph can be construed as "an emergent property" that interacts with an assemblage, depending on "how the work mobilizes its resources as a physical artifact as well as on the user's interactions with the work and the interpretive strategies she develops—strategies that include physical manipulations as well as conceptual frameworks" (Hayles 2002:33). The remediation of the digital artifact through a process that is not immediately transparent to non-technologists has led to the conceptualization of the computer as a "black box" that conceals the mystery of remediation or as a "window" that becomes invisible as a mediator of digital media (Bolter and Gromala (2003). In her book *Artifacts*, Christine Finn examines these invisible mediators through the collectors of "vintage" computers and their affinity for the materiality of old technology, finding it more aesthetically appealing and the "idea of a brown-housed, green display more fun, perhaps more ironic than their tangerine iMac[8] (2001:127). These older computers have more gravitas, and "the computer is a part of their personal material culture as much as it is the material culture of a distinct region of northern California" (2001:127). The tropes constructed with these vintage computers are intimately involved in historicizing the apparently ahistorical digital age; the deliberate use of outdated graphics and modes of

[8] Which is, over a decade later, an iconic antique computer in itself.

communication cite a growing body of collective digital history that was once primarily the purview of technologists and is now becoming widespread throughout the online world.

Studying materiality of digital archaeological objects brings together the post-disciplinary fields of Material Culture Studies/Materiality, Visual Studies, and the burgeoning field of New Media. The perceived immateriality of digital media is evocative of the shift within UNESCO to safeguard "intangible heritage", away from "a focus of the individual object, and onto the narratives, practices representations, systems of knowledge, and broader socio-cultural contexts within which such objects were originally embedded" (Malpas 2008:15). This approach, from arguably the most important international cultural heritage institution, asserts that heritage "is embodied in people rather than in inanimate objects" (Logan 2007:33). This definition of intangible cultural heritage once again reinforces the separation of material culture and humans, yet it was a necessary expansion of the interpretation of cultural heritage to protect ways of life as well as monuments. Reconciling this apparent disjuncture would require the full integration of human and object rights, a step perhaps too radical even for the most fervent advocates of material culture. The figure shown above, from a Tumblr blog that provides humorous and yet insidious "tips" from the old operating system, Windows 95, suggests that you touch the monitor, as it is "warm, like flesh". This nod to retro-computing mixed with a ghost in the machine, with an all-too-human computer breaking the object/human divide was an instantaneous hit (meme) on the internet.

Finally, Rodney Harrison urges archaeologists to "develop a new archaeology for an increasingly virtual world…to develop new methods which allow us to address ourselves to virtual material cultures" (2010:336). The acceptance of agency for objects is certainly not a universal concept, even in archaeology, the field that has the most dedicated and longterm attention to things. Digital artifacts are deemed unfit for archaeological archives, untested, impermanent, too subject to format changes that remove the ability to remediate their subject matter. Yet as we integrate digital artifacts into our interpretive schemes, further our cyborgian entanglement with personal technologies, it has become imperative to understand their place and meaning in our meshwork of archaeological interpretation.

Chapter Three: Contextualized digital archaeology

> A little over a year ago, I spent a night in Hama. That day, Dan, Melissa and I were checking out sites in western Syria for potential projects and had gotten ridiculously lost in the mountains. The mountain towns were lovely, friendly and felt refreshingly relaxed. But it was late, and we were all tired, starving, and indecisive – a potentially lethal travel combination. We crashed in our hostel and then went out to get felafel. It ended up being the best felafel I've had in my life. Then we wandered the streets. It was the beginning of June and dead hot during the day, so most folks came out at night to socialize. At first it seemed like it was a shibab-dominated scene–boys were everywhere. But there were women around as well, enjoying the night air. We walked by the famous waterwheels – great, groaning, wooden dinosaurs that are monumental in scale and lit up like a carnival. The splashing water cooled the sweltering night, a miracle of relief in the desert breeze.
>
> I hadn't expected much out of Hama; it was a way-point in a misshapen quadrangle between Damascus, the coast, and Aleppo. But more than the groaning waterwheels, or the dark, cobblestone maze of the old city — the people of the city. The women. Or, one woman. There were a group of ladies on the street just wearing hijabs without a full veil, only slightly older than me, chatting and eating ice cream. I smiled at them, well, because I don't generally see a lot of women while traveling in the Middle East and I miss their company, if only on the street. It's a strange and lonely feeling when you recognize it.
>
> The women hesitated, smiled back, and then one lady grabbed my arm. I wasn't actually all that surprised by it, as I've become accustomed to displays of sisterly affection and warmth from a wide swath of amazing Middle Eastern women, but what came next did surprise me–she wanted me to have a bite of her ice cream. I didn't really get it at first, but even after several demurrals, she insisted. We shared a melting bite of ice cream, laughed, hugged, and went on our way into the night.
>
> So tonight, as the protests in Hama rage on, I'm thinking of her. Solidarity with people who are yearning, aching, struggling to be free. Always.
>
> Colleen Morgan, Middle Savagery, 2 July, 2011

Digital archaeology is inescapably embedded in a political context. Consider the blogging guidelines for the undergraduates excavating at Dhiban, Jordan during the 2009 season: "(The Dhiban Project Blog) is likely to get broad coverage from a number of online sources. Accordingly, we cannot "scoop" the Jordanian government on any major finds from the field, nor can we disparage our hosts (the king, government reps)." The remediation of excavations through imagery, video, text, and virtual reconstructions requires a conscious editing process, made explicit in the above case at Dhiban where an overt effort was made to remove political commentary from the experience of Midwestern American undergraduates experiencing life within a rural Muslim population for the first time. In this way, the implicit agenda in digital representations of excavations differs little from analog representations of archaeological interpretations. While archaeology has a deep tradition of visual representation in the form of illustration and photography, this representation is only beginning to be examined critically (Guha 2002; Perry 2009). Added to the growing awareness of political dimensions of analog representation is a new consideration—the widespread distribution that is enabled by digital media and the internet. Beyond these critiques and beyond even the seemingly apolitical practicalities of representation for archaeologists working in the 21st century contexts, digital media can vastly contribute to a reflexive, politically engaged, activist archaeology. Yet there has been little consideration of the politics or ethics involved in digital archaeology. In this chapter I discuss the contexts of digital archaeological practice and situate my work within a larger field of feminist archaeology, with reference to emancipatory archaeology. In examining the often neglected "real-world" context of digital archaeology as well as archaeology within the digital realm I do not intend to create a dichotomy between "real" and "virtual" worlds. To fully explore digital archaeological objects, we must establish a strategy that highlights the ethics

and responsibilities of the archaeologist in creating digital media as interpretive tools. This strategy is very much at the heart of this dissertation and will be considered in the following chapters.

Digital archaeology and political engagement

Interrogating the practice of archaeology has been a crucial element of feminist archaeology (Wylie and Conkey 2007); not limiting practice to studying ideas of gender in the past, feminist archaeologists identified archaeology as a "highly-constructed form of knowledge-seeking" (Roberts 1993:18) and encouraged reflexivity, multi-vocality and advocacy. Making this explicit, in 1997 Margaret Conkey and Joan Gero (1997:429) set out specific starting points in "doing" feminist archaeology, briefly, 1) increasing the visibility of researcher agency in knowledge production, 2) less hierarchical organizations making decisions about non-reversible archaeological activities, and 3) "to admit ambiguity an partial or situated knowledges in its analyses," finding value in "the indeterminate, the nuanced, and the specific in new narrative and historical cognitive frames." Many of these elements that were introduced and developed in feminist archaeology were later were deployed as components of post-processual archaeology (Hodder), then elaborated in indigenous and emancipatory archaeologies (Duke and Saitta 1998).

Digital archaeology can be employed to address each of Conkey and Gero's points, as Ruth Tringham in particular has demonstrated in over a decade of research and publications (Wolle and Tringham 2000; Tringham 2000; Tringham and Ashley 2001; Tringham 2004) but perhaps most explicitly in her collaborative article with Rosemary Joyce, *Feminist Adventures in Hypertext* (2007). In this article Tringham and Joyce make the argument that multivocality, the second of Conkey and Gero's discussion points, "can be realized more fluidly in such multilinear narratives than in traditional linear texts" and that "historical boundaries between researchers and others can be blurred by using the possibilities of digital technologies to give access to more data and to tools to present original interpretations of data," providing a "heterarchical interpretive universe" (329). The article also forwards the possibility of "advanc(ing) a liberatory project to engage specialist and non-specialist understandings of the past" (330). In this Tringham and Joyce move to an activist, public archaeology stance, wherein digital archaeology can be used to improve transparency and interactivity of archaeological interpretations. While much of digital archaeology is indeed created to present archaeological information to "the public," very little of it is critically constructed or theoretically informed. By experimenting with hypertext, Tringham and Joyce have provided a little-followed example and a rare artifact—a theoretically and methodologically rigorous presentation of archaeological data with digital media. Other theoretically informed examples of integrating digital media follow Actor-Network Theory (Webmoor, Whitmore) or phenomenological approaches (Krysta). Discussion of these approaches is contained in chapter two.

Apart from Tringham and Joyce's discussion of digital archaeology as a liberatory project, the digital realm has been largely absent from discussions of emancipatory archaeology. Characterized as a reflexive, politically engaged, activist approach, emancipatory archaeology borrows from feminist archaeology, indigenous archaeology, and Marxist archaeologies of class (Duke and Saitta 1998). While it is possible to engage with digital archaeology's potential for political action from a strictly feminist perspective, the work of emancipatory archaeologists undeniably resonates with my contextual and production-based examination of digital object biographies. As previously stated, digital archaeology is not emphasized in the emancipatory archaeology literature, but gleaning insights from "an ethical and socially responsible archaeology" (Saitta 2008:267) is undeniably profitable to aid in outlining a program for an ethical, socially responsible, politically aware praxis in

digital archaeology. Randall McGuire defines emancipatory political archaeology as one that "challenges the secret writings that hide and justify injustice," is "truthful about its political content and confronts power and oppression, develops "a heritage tourism that benefits and advances the interests of local peoples rather than the profits of multinational corporations," reveals "how racial groups have experienced oppression and exploitation in shared pasts," helps "descendants reclaim their dignity, legacy, and rights" and "transcends bourgeois interests to include working-class communities" (36). This radical transparency, deep community engagement, and commitment to social justice developed out of what McGuire defines as Marxist radical praxis that "necessarily involves three goals: to know the world, to critique the world, and to take action in the world" (38).

High-minded goals of emancipatory and liberatory archaeology aside, it is truly informative for digital archaeology to take another cue from McGuire, asking "Archaeology for whom?" (Mcguire 2007) or digital archaeology for whom? In research very much committed to a more emancipatory approach to digital archaeology, one of the defining questions should be, more emancipatory to whom? Digital archaeology's constituency, when even considered, is almost always assumed to be male, white, western users of technology, a broadly defined "public" for whom digitality is an obvious boon. In defining the specific contexts in which digital archaeology is performed and highlighting the power imbalances among the participants I hope to speak to both Conkey and Gero's charge to increase my (the researcher's) visibility in creating interpretive digital artifacts and McGuire's radical transparency. I have created these objects in very specific contexts, and will elaborate upon these contexts more fully in the individual artifact chapters, but here I will generalize—while I work in the Middle East in the Old World, many of these injustices are endemic in archaeological practice. This is certainly not a comprehensive list of stakeholders; I have chosen to identify particular parties that are intentionally or unintentionally disregarded during digital archaeological practice.

Workmen

The roles of director, digital documentarian, graduate student, and student may become confused on academic excavations, but there is one role on site that is kept separate from all of these - that of local stakeholders, specifically, those who work on the site as manual laborers. This is particularly true in the Middle East where there are often large numbers of workers drawn from local populations. This is a traditional organization of work that was established early in the colonialist/imperialist practice of field "expeditions" and has continued unchanged for the most part. These workmen are employed in a variety of positions, often for relatively unskilled labor such as heavy lifting or sieving. Local women may be employed to cook and clean in the local dig house. While there is wide regional variety in the form of funding options, relative education levels and religion, willingness on the part of site directors to enskill or incorporate the local population, there is still a prominent separation between non-local site participants and locals. This separation and accompanying power and authority imbalance is pervasive throughout all social interactions and tasks appointed on site, but is made startlingly visible in the documentation of activities on and off the site.

This power imbalance made visible though site documentation has remained unmentioned throughout most of the history of archaeology as a discipline, though a growing interest in visual media in archaeology, particularly archaeological photography, has emerged through more recent publications. Ashish Chadha's (2002) critical historiography of Sir Mortimer Wheeler's visual record of excavations in India revealed that "the formalistic syntax of the visual discourse that Wheeler employed was deeply embedded in the disciplinarian ideologies of the colonial project, the scientific

project and the military project" (379). While Wheeler proscribes using human figures as scales while taking photographs of large features, he himself never appears in these images, always using "the nondescript workman/woman, the subaltern, who plays the dual role of the human epistemic marker and the ethnic marker - an anthropological motif crucial to the visual representation of colonial archaeological projects" (389). The use of the subaltern laborer as a human scale emphasized that "the past is discovered by colonial authority" but remains unknown to the laborers" who are "incapable of discovering it themselves" (389). While they are the ancestors of the inhabitants uncovered by archaeological endeavor, their experience of the past is mediated through a colonial project. These laborers are always attired in native robes while doing medial labor, "disciplining the body of the primitive native" as becoming both a symbol of the otherness of this project and the colonial domination over current and past history.

Similarly, Nick Shepherd's (2003) examination of the John Goodwin photographic archive of photographs taken in sub-Saharan Africa during the 1920s to the 1940s reveals often nameless African workers who were central participants in the excavations of the site yet remained unmentioned and uncredited outside of Goodwin's personal papers. Shepherd attempts to attach names to these uncredited laborers using these personal papers, often finding incredible, endemic racism. He connects the slippage between archaeologist and worker to larger "disciplinary habits of self-representation and the elision or effacement of labor," correctly identifying site reports as "the presentation of a *fait accompli*, an exercise in the removal of agency" rampant with passive constructions and the removal of identity. Finally, following the notion that archaeological knowledge is constructed, Shepherd suggests reframing the photographs through digital editing, moving figures "on the margins or crouching in the shadows" into the foreground or "even better - stands behind the camera, becom(ing) the framing consciousness behind the photograph" (350).

With the growing ubiquity of digital cameras, especially cellphone cameras, the framing consciousness of digital photographs is increasingly workmen on site. These photographs are not included in the archive and are thematically radically different than those taken by the site photographer or by student participants. These photographs remain relatively unexplored and yet are a key component of changing representational practices on site. While I will discuss the photographs more in-depth in the next chapter, it is a method of entry for disempowered participants in archaeological excavations to capture and represent the aspects of sites that are important or interesting to them, providing a counter-narrative to traditional site photography, characterized by Shepherd as "a class of imagery from which coworkers and assistants are edited out, along with extraneous items of equipment, signs of camp life, collapsed sections and misplaced artefacts, in fact, any signs of production or failure" (350). Understanding the production of these extra-archival images and integrating them into site interpretation or enskilling workmen in "higher" archaeological methods such as digital recording provides entry points into skilled labor that is applicable beyond the edge of the trench.

Non-academic archaeologists

The power imbalance on excavations in colonial contexts can be mapped directly onto lines of local/nonlocal and subaltern/colonial power in representations that highlight the subaltern status of laborers on site. This representational violence exists in both professional and academic archaeology as a form of erasure of the individual excavator in the archaeological record. Often this erasure is performed by the archaeologist providing the interpretations as a matter of course. It is worth quoting in full from an unpublished Theoretical Archaeology Group meeting paper:

> In terms of the excavation work that we carry out, we cannot find the words, and this is literally speaking, to describe to you how painful the process of cutting ourselves out of an archaeological imagination is? Or describe what a dangerous shattering of subjectivity there is in drawing and interpreting where you and others made something, but without you? And yet everything else is sectioned, planned and given a context. Do you know what it is like to always focus the camera in the shadows that reside after you deliberately push a colleague out of the frame, making them wipe out their footprints and pick up their work tools in the process of leaving. What kind of archaeology are these forced experiences for and who is it for? Why are we so professional about creating an archaeology devoid of us? (McFayden et al.. 1997)

In contrast to the deliberate use of laborers as scales, excavators are asked to remove all traces of the excavation process, in effect erasing themselves from the archaeological record as meaningful contributors to the production of knowledge. As McGuire has written, attempts to "transform the social context of our discipline are not new" but have mostly fallen along gender and race lines while "the class structure of archaeology has remained largely a hidden issue" (2008:99). He argues that "fast capitalism" has transformed the class structures in archaeology, removing the apprentice, journeyman and then master progression to exploit an academic and professional proletariat without the relative security of a better position in the future. The early colonial days of large teams of presumably unskilled laborers is mirrored in the devaluation of archaeological field skills. The craft of field archaeology is not valued as much as intellectual labor and is underemphasized in college education, leading to a general deskilling of the archaeological labor force and inferior archaeological practice (128).

The division between intellectual and physical work in archaeology is identified as one of many "rips in archaeology" by Michael Shanks and McGuire (1996), who suggest elaborating the notion of craft in archaeology into alternate practices and restructuring traditional site hierarchies. However, the particular position of the field archaeologist, laboring for low wages and minimal recognition yet often having the best understanding of the stuff of interpretation, the raw materiality of archaeology that is subsequently cooked into interpretive schemes that are divorced from and unrecognizable to the experience of the field archaeologist is elided in Shanks and McGuire's conceptualization of a holistic storytelling endeavor. While the deskilling of field archaeology in the United States has continued to the extent that adequacy in field methodology is assumed after a single field school and graduate students (and professors) can be chronically bad excavators who pass on methods as unquestioned field knowledge, even when the methods employed are inappropriate to the context in which they work. The situation in the United Kingdom is marginally better with the development of single context archaeology which was performed in open-air trenches, with "the emphasis on excavating units (contexts) in plan, rather than with box sections and balks (giving) greater responsibility to the excavator because no sections remained to provide a control over what had been removed" (Berggren and Hodder 2003:424). Berggren and Hodder state that this led to "a routine that could be so codified that relatively unskilled excavators could use it" (424) though it is debatable whether this was a widespread deskilling or the incorporation of an apprenticeship situation wherein these relatively unskilled laborers were trained up to meet better recording standards.

There is a growing non-academic digital workforce in professional archaeology ranging from GIS specialists to illustrators who have moved from analog to digital methods for site interpretation and reconstruction. These workers are in an intermediary position between field archaeologists and project directors, taking information from descriptions provided by the excavators to produce visual representations for the publications of the project directors. These interpretative objects are produced for reports or publications and are often uncredited, similar to the labor of archaeological

photographers. They are generally opaque, stand-alone objects, with little commentary on how the final model or image was achieved and by whom. While field archaeologists often take digital site photographs, they are generally uninvolved with other technological interpretive action such as digital filmmaking or illustration and reconstruction work. Though again, with the barriers to technological knowhow becoming lower and training in digital methods are beginning to appear in university methods courses, many field archaeologists are becoming conversant in interpretive technologies. Working behind a computer is seen is an advancement after many years of low pay and poor working conditions. Conversely, students of digital methods classes are becoming highly specialized, skipping archaeological field training at the expense of learning how to excavate and see the archaeology that they are interpreting visually.

At the time of writing this dissertation, Summer of 2011, the state of professional archaeology is dismal on an international scale. The global economic downturn has eviscerated the profession, with massive layoffs and under and unemployment rates among archaeologists shockingly high. Sadly, a truly emancipatory digital practice among professional archaeologists might encourage acquiring skills in digital methods to increase chances of employability in other professions. Still the integration of digital skills with archaeological fieldwork can provide gratifying to fieldworkers who can directly translate their interpretations into digital formats for visualization or publication.

The technologically disempowered

> *The network society is creating parallel communications systems: one for those with income, education and literally connections, giving plentiful information at low cost and high speed; the other for those without connections, blocked by high barriers of time, cost and uncertainty and dependent upon outdated information.*
> The United Nations Human Development Report (1999:63)

Broad participation in the creation and consumption of digital artifacts is limited by what has been called the "digital divide," or unequal access to the internet. While this term was originally applied to delineate the ownership of computers and internet connections with those who did not possess them, it has become a dynamic concept, used to describe differential access to broadband, access to older technologies as opposed to newer ones, a multidimensional disparity that highlights differences between men and women, the young and elderly, mainly dependent on relative wealth (World Information Society Report 2007:21). Pippa Norris identifies three distinct aspects to the digital divide, that of the "global divide," referring to "the divergence of Internet access between industrialized and developing societies; the "social divide" between the information rich and poor in each nation; and the "democratic divide" between "those who do and do not use the panoply of digital resources to engage, mobilize, and participate in public life" (Norris 2001:4). The digital divide is a multi-scalar issue. Digital outreach in archaeology often falls short, failing to identify and bridge the digital divide in these multiple scales. To combat information poverty, digital outreach in archaeology must identify and address the relative technological divides in the lives of their stakeholders.

An excellent example of multiscalar outreach is the work of Carol McDavid on the Levi Jordan Plantation Website. During her work on the Levi Jordan Plantation archaeological excavation in the late 1990s, Carol McDavid identified the digital divide amongst stakeholders in the community of Brazoria, Texas as well as a broader, online community and takes up the issue of the democratization of digital outreach after creating a website for the public about the excavation. She specifically examined the democratic structure of the organization behind the website as well as the format of the website itself, attempting to make the content as widely accessible and egalitarian as

possible (McDavid 2004:166). The content of the website was provided jointly by the archaeologists working on the project and community members, who "began to feel that they, as project participants, had more of a vested interest in the website and, more generally, in the (Levi) Jordan archaeological project" (167). In this way, the website drew participants and a descendent community to the archaeological project, not the other way around. McDavid also held workshops in schools and libraries to help members of the community who had not used computers before access the internet. McDavid deemed the website a success; however her experiences with inactive online forums and disinterest in the website's subject matter led her to caution that the internet itself does not necessarily help democratize archaeological discourse, and urges archaeologists to "encourage interactivity from the ground up" (179). Indeed, the website currently lays fallow, much of the html and websites broken, superceded by the state park website on the archaeological site.

In the decade that has passed since McDavid's work on the Levi Jordan Plantation archaeological site, much has changed in the technologies that are available to archaeologists, the availability of online resources to a wide audience, and the ways that this audience uses the internet. Much of the audience that McDavid was trying to reach are now available on Facebook or Wikipedia; no longer is it necessary or desirable for archaeologists to build stand-alone websites about single archaeological projects. Nevertheless, there still exists a substantial digital divide in each of the categories that Pippa Norris has defined: global, social and democratic. In the countries where I conducted the research for this dissertation, Jordan and Turkey, there is still a substantial digital divide when compared to the United States. In rough numbers, Jordan has increased their internet usage from 2.7% in 2000 to 27% in 2008 and Turkey had a similar increase, from 3.8% in 2000 to 34.4% in 2008[1] (World Bank, accessed 2011). This, however, is dwarfed by the 75.9% of people in the United States using the internet in 2008 (ibid). I will discuss the particular social milieu surrounding internet use in Turkey and Jordan in coming chapters, but there is still the issue of the democratizing power of the internet.

While access to the internet is still limited in some regions of the world, it is quickly becoming ubiquitous through access to cell phones and lower financial barriers to equipment and service. Though people are overcoming the global and social divides separating them from internet access, the question of the democratic divide remains. Even if there is general access to digital tools, will people use the internet for democratic or emancipatory action? Face with a generalized optimism about the future of democracy on the internet, Matthew Hindman took a skeptical stance. In his 2008 book, The Myth of Digital Democracy (2009), Hindman notes the lack of an integrated internet and the digital divide, but also examines the numbers of people who are actually writing, reading, and commenting on blogs and political websites. Similar to McDavid, Hindman found that while there may be content on the internet that would keep users better informed regarding their local community and political situation, many do not choose to access this information. Further, Hindman argues that existing political and economic structures prevent these voices from being broadcast through the manipulation of search results and linking hierarchies (2009:16).

Since the publication of Hindman's research, social networking media has become the focal point of online interactivity and large-scale online organizing has changed the political landscape, even in countries which are traditionally technologically disadvantaged. While credit cannot necessarily be given wholly to social media for the political changes during the Arab Spring, and increasingly Europe and the United States, the ability to use social media to share and organize

[1] These figures are also somewhat inaccurate as they count existing internet connections, not cell phones or internet cafes.

people on a large scale has been instrumental in fomenting and forwarding the expression of political belief. During 2010 and 2011 there have been examples of both political revolution using social media and extreme oppression using the same. In the case of the Iranian Green Revolution, protesters used Twitter and other social media sites to organize, but this organization was extremely limited by the government's control of the internet (Morozov 2009). In this manner, social media and digital technology has thus proven to be democratizing and emancipatory, while also potentially the tool of the dominant political paradigm.

In this context, a digital archaeology that is emancipatory and multi-scalar in approach can best serve technologically disempowered stakeholders. Knowing what technology is most used within a community, whether it is cellphones, internet cafes, or full broadband access is important in terms of the scale and complexity of digital objects, sometimes simply making digital photographs available at a smaller, more downloadable size can considerably improve accessibility on networks with slower speeds. While McDavid might have had considerable difficulty attracting attention and discussion to her websites a decade ago, stakeholders have a much lower barrier to access with the integration of archaeological content into social networks. "Liking" an archaeological project on Facebook can also demonstrate solidarity, a sense of civic engagement, and a platform to access archaeological information from archaeologists themselves, rather than through the mass media. Letting an archaeological conversation or content become part of an emancipatory effort or archaeologists themselves participating in broader activism can also improve the emancipatory connection with digital content. Certainly, a measure of skepticism to the emancipatory and educational aspects of digital content is a healthy response, and a Twitter conversation does not necessarily substitute for a community open day or direct action on the part of archaeologists. Still, reflecting the substantial gains in worldwide internet access, bridging the digital divide and encouraging connectivity within archaeology can well supplement other outreach efforts.

Digital archaeology and epistemic injustice

Digital disempowerment speaks to the heart of epistemic injustice, which Miranda Fricker disambiguates from distributive unfairness (such as varying degrees of access to information and education) as a "wrong done to someone specifically in their capacity as a knower" (2006:1). The concept of epistemic injustice has primarily been used by indigenous archaeologists and those who are interested in indigenous archaeology. Still, it is a powerful concept to contextualize practice in terms of what Fricker calls testimonial injustice and hermeneutical injustice. Testimonial injustice, wherein "the basic idea is that a speaker suffers a *testimonial injustice* if prejudice on the hearer's part causes the hearer to give the speaker less credibility than he otherwise would have" (Fricker 2006:3) and the accompanying *testimonial justice* wherein this "prejudice is detected and corrected for by reflating the degree of credibility to compensate for the initial impact of prejudice" (4) are visible within the relations of each of the above constituencies. When the observations of workmen and field archaeologists are taken into account and they are enskilled with the means to interpret archaeological remains, or they are credited with authorship in reconstructive efforts, the credibility deficit can be exacerbated with digital technology. Considering the digital counter-narratives presented by disempowered participants in archaeological research, reflated by credibility but have to both provide correctives and an example forward.

While there has been little discussion of ethical and political dimensions in digital archaeology, this is hardly the case in interdisciplinary new media scholarship. A certain degree of technological determinism is rampant, but this is countered by feminist scholars taking on what has been constructed as a western, androcentric field. One of the most prominent and foundational voices

has been Donna Haraway who disrupted what she sees as "deepened dualisms of mind and body, animal and machine, idealism and materialism in the social practices, symbolic formulations and physical artefacts associated with 'high technology' and scientific culture" (Haraway 1991). She proposes "reconstructing socialist-feminist politics is through theory and practice addressed to the social relations of science and technology, including crucially the systems of myth and meanings structuring our imaginations" (163). Though a staunch and excellent critic of technoscience, Haraway suggests a strategy of engagement with technology, in that it is no more alien to feminist thought than the nature goddess myths long embraced by second-wave feminists and that a cyborg identity as a "powerful infidel heteroglossia" is a way out of totalizing theory and the fear of technology (181). This engagement with technology is further bolstered by research cited by Tringham and Joyce (2007) of women and disempowered groups being "among those specially benefiting from the potential democratization represented by a decentralized medium" (331; see also Harcourt 1999b; Hawthorne and Klein 1999).

Mei-Po Kwan (2002) investigates geographic information systems or GIS from a the stance of feminist geography, questioning whether it is inherently a positivist, masculinist technology or if GIS can be used in feminist geographic research "not to discover universal truth or law-like generalizations about the world, but to understand the gendered experience of individuals across multiple axes of difference" (648; see also Curry 1998). She notes that her own research and that of several contemporary academics "suggest the possibility of scale and context-sensitive GIS-based feminist research" (651). Kwan's conclusions match Haraway's support for engaging with technology, in this case GIS, to address issues that are important to feminist research while still remaining aware of the power of GIS to impact the lives of people, especially those who are not similarly empowered to perform comparative research.

A common thread connects many of these feminist critiques of digital technology—that of the need to critically engage with the technology; to learn how to use the technology in order to empower marginalized people. As Haraway writes, feminists must participate in "earth-transforming challenges to the views of the masters" by reconfiguring and putting technology "back to work for life and not death" (1991:4). A similarly explicit charge to master, remake, reconfigure and remix can be found in the "Maker" or "new craft" culture. As Lev Manovich (2007) notes, the concept of the remix has dominated the beginning of the 21st century, with the term brought out of hip hop culture and applied to visual projects, software, literary texts, and many other forms of media. While aspects of remix culture have been co-opted by corporate culture and monetized, this has been countered by a burgeoning Maker culture, characterized by DIY projects that create clothing, food and other items typically mass-manufactured and bought from large chain stores (Minahan and Cox 2007). With a growing economic crisis and a sense of betrayal by major financial institutions, a resurgence of the Arts and Crafts movement and the DIY ethic has become increasingly attractive to a broad swath of people. This impulse is also fed by the growing ubiquity and rapid decrease in price and relative increase of visibility of technology that aids making and sharing various forms of media. In their examination of the Stitch'nBitch women's knitting movement, Stella Minahan and Julie Wolfram Cox find "both a local and global phenomenon in which the production and consumption of gender, technology and society collide" (2007:6). Women knitters organize online to meet locally to talk and knit and exchange knitting patterns and tips both on and offline, building community through craft. Though much of the 21st century Maker movement has focused on traditional forms of craft such as knitting, the DIY ethic extends to computer hacking and media-making, aided by inexpensive equipment and massive recycling projects wherein computer parts are

cheap or free. Archaeologists have long participated in this kind of adaptation, re-use, hacking and remixing, motivated by lack of materials or money (Tringham 2009).

Another manifestation of the intertwining of DIY and digitality is "edupunk." Jim Groom, frustrated by the limited capabilities of educational and professional software content management systems coined the term edupunk in May 2008 to encompass an alternative methodology of using social networking sites and other internet resources to build a distributed, interactive and flexible platform for teaching, research, and collaboration. I extend his definition into the archaeological realm with an explicit engagement with the excavation archive and public outreach. Edupunk for archaeologists involves a research stance of overt public engagement, an interventionist ethic to disrupt and interfere with a consensus view of the past. At the heart of the movement is the Do-It-Yourself, or *Maker* ethic, defined by cultural critic V. Vale as incorporating mutual aid, financial minimalism, anti-authoritarianism, and black humor. I would add to this an invitation to participate, refine, and deconstruct. Ruth Tringham calls this reinvisioning of the past a process of "radical remediation," following New Media artists and performers (Tringham 2007).

When combined with feminist practice, the Maker/DIY approach to digital archaeology encourages direct participation in media-making by all participants in the archaeological process, not just a single media specialist. As the subsequent chapters will demonstrate, democratized digital archaeology has a direct link to greater multivocality in the interpretation of the site, and greater accessibility to different experiences of archaeological place. While specific examples will be provided in the text of the object biographies, a short introduction to integrated participatory digital media making and outreach as actually practiced is informative to this discussion of praxis. Technology and social media are rapidly changing; so much so that it is difficult to thoroughly examine let al.one integrate innovations into research quickly enough for meaningful results. While the number of academic publications regarding social media is growing, within academic archaeology there are still relatively few contemporary publications for comparative citation. I separate these technologies along lines that are by no means impermeable; blogging can be integrating with photo sharing in the form of photoblogs, Twitter and Facebook updates could arguably be microblogging or compared to instant messaging, and participation in virtual worlds could be viewed as an elaborate form of instant messaging, the creation of digital movies or as taking part in a video game. It would not be possible to cover all of the instances of archaeologists using social media, but a review of the earliest or best instances of archaeologists who are creating these media rather than relying on professional services will provide criteria for further elaboration. More discussion of best practices with sharing and licensing will be provided in the conclusion.

An integrated approach to digital outreach, one that mixes text, photos, video, and public accessibility to "real archaeologists" has been used by institutional entities supporting archaeology, archaeological projects, and individual archaeologists in varying forms and intensities. These multiple scales of implementation make comparative analysis more difficult but still informative, especially in the relative efficacy of messaging from each entity. Indeed digital media can have a flattening effect, wherein the outreach performed by one person who is highly productive and dedicated can eclipse the digital footprint of larger entities who lack the direction or dedicated resources to spend in keeping an active online presence. Institutional entities also often lack authorship in their outreach, devaluing the content both for the online information consumer and the author. While the coming chapters will describe and compare aspects of these various forms of digital outreach, I will provide a brief review and relative assessment in view of the topic of this chapter—political contextualization of digital work.

Presenting digital archaeological objects through social networking

There are many ways to present archaeology through digital outreach. Some archaeologists or institutional entities will pick one or two media venues and develop their outreach strategies around a single platform. Most recognize the utility of a multifaceted approach, though newer social media platforms allow the combination of strategies more easily. Each media platform has its own community, strategies and commitments and vary in the extent to which they integrate with other platforms. To illustrate, I will begin with the platform of blogging. Blogging, writing short entries within the framework of a simple online publishing scheme, is a simplified descendent of the personal web page that requires no knowledge of HTML or domain registration (Lister et al.. 2009:268). While the form originated in text and hypertext, there is an incredible diversity of blog form and subject matter. Generally, blogs provide text commentary, links, and multimedia that supplement or at times replace the text. The main text-based platforms at the time of this dissertation are Wordpress, Tumblr, and Blogspot, all of which have eclipsed the once popular LiveJournal, which has gone downhill ever since its acquisition in by a Russian corporation. Within these word-based platforms lies the ability to embed links and multimedia, augmenting and illustrating the prose. One example is the vlog or video blogs that focus entirely on the video performance of the blog author, and these can be either integrated into a blog format with other entries that are textually based, or stand alone as hosted on Youtube.

Since the first instances of blogging 30 years ago, the short form of digital self-publishing has split, metamorphosed and adapted to wildly different uses. While still incunabular and unstable as a creative genre, blogging remains a means to instantly self-publish content—perhaps this being the defining characteristic of a rapidly fracturing format. Some blogs incorporate photographs or graphics as a means to illustrate concepts contained within the written body of the work, though some have eschewed words entirely, containing only visuals as a defining trait. A few publishing platforms cater to this type of expression, with Flickr being the most popular. Originally conceptualized as a personal image archive, users of Flickr see it as "a social site, a place for sharing images" (Van House 2007:X). Many users of Flickr see their uploads as a form of self-expression contributing to a narrative (ibid), similar to word-based blogging. A simplified, more recent photo sharing platform is the smart phone application, Instagram. To a certain extent, Instagram has eclipsed Flickr, offering instant lomographic/retro filters for photographs taken on smart phones. The photographs are also marked with a location and photographs that you have taken and your contacts are intermixed, emphasizing a collective narrative. While many of the photographers using Flickr have DSLRs and therefore take the time to digitally alter the images using software such as Photoshop, Instagram carries a more instantaneous quality. More about these photo-sharing platforms will be discussed in chapter three.

Another interesting variation on the short form can be found in microblogging on sharing platforms such as Tumblr, Twitter, Facebook as well as a myriad of other websites. While it would be beyond the scope of this dissertation to cover all of these, I will briefly discuss and situate the three websites mentioned above as they have been involved in the creation and propagation of archaeological digital artifacts discussed in later chapters. Tumblr bridges the amorphous divide between text and photo blogs in microblogging form. While longer text-based writing is certainly present, Tumblr specializing in gathering and remixing digital ephemera. Similar to Instagram, your contributions are intermixed with those of your contacts, creating a larger collective narrative. Dissimilar to Instagram, most of the content on Tumblr are found objects; images, text, videos and music that are not created by the user collecting the digital objects. Users can "reblog" other content, or repost content created or found by other users with no threats of copyright infringement

or ownership. Reblogging posts is flattering to the original user, and reblogging also allows the person who reblogs the content to further comment on the content. Users can also "heart" content, which shows approval, but does not redistribute the original content. This amounts to a constant, manicured stream of digital content determined by the user's contacts and the user herself, who curates different content providing contacts. It is not dissimilar to a radio station employing DJs that play certain genres of music, but who introduce new songs that fit within that corpus.

A more ubiquitous and stripped down version of the short form, or microblogging, is Twitter. In contrast to Flickr and Tumblr, Twitter has been the focus of more academic attention. Seen progressively as a social, commercial, academic, then political venue, Twitter relies on 140 word updates, but allows linking to images and to other websites. Conversations, comments and themes are organized by hashtag, which can be shared and commented upon generally by any Twitter user. Within the archaeological community Twitter has been used as a quasi-outreach based platform, with both announcements regarding archaeological news and conferences, but also as a conversational tool between archaeologists interested in digital media.

Finally, combining many traits of various publishing platforms, social networking sites like Facebook, Google Plus, and the late Myspace and Friendster combine microblogging and photoblogs together into a "stream" wherein users can view their content alongside those of their contacts. While classic forms of blogging are still popular and can be integrated into these social networking sites, the amount of people using Facebook eclipses all other forms of online usage. As published by the Pew Internet Research Center in August, 2011, 65% of online American adults use social media. Using a social networking platform, archaeologists can combine outreach efforts with personal online presence, while reaching a broad audience.

Archaeologists have had a long engagement with the internet, occupying the first public newsgroups (alt.archaeology), learning HTML to build basic websites, and editing archaeology entries on Wikipedia, and finally running social networking sites dedicated to archaeological interests. While the majority of archaeological content on the internet is still not authored or overseen by the archaeologists who were involved in the original excavation, there is a growing emphasis on digital literacy at universities with archaeology degree programs and an marked increase in conference papers, dissertations, and journal articles addressing various aspects of digital media and archaeology. William Caraher (2008) marks the beginning of archaeological blogging in the late 1990s, with the later "great expansion of archaeological blogs" beginning in 2002. In the decade since that time, archaeological blogs have come and gone, multiplied and diversified, experimenting with a range of formats. In 2011 my blog, Middle Savagery, hosted a month-long blogging carnival that solicited contributions to weekly questions in anticipation of the Blogging Archaeology paper session at the Society for American Archaeology hosted in Sacramento, California. During this blogging carnival, archaeologists contributed to discussions regarding best practices for digital archaeologists, not just in data formats and correct key word annotations, but the ethics and politics of being a public intellectual. The blogging carnival brought together archaeological bloggers of all kinds, with contributions from Twitter and commentary on Facebook. Social networking sites and online publishing platforms are used widely by archaeologists, but with relatively little engagement with existing theory on visual or digital media. While the previous chapter attempts to rectify this situation, I will finish this chapter by outlining a best practices with a rigorous, reflexive, political and contextual methodology for digital media.

Conclusions

How is a politically formed, theoretically informed piece of interpretive digital media created? Taking a cue from Conkey and Gero's (1997) suggestions regarding how to "do" feminist archaeology, I suggest four points on how to "do" digital archaeology. The first point draws directly from Conkey and Gero's perscriptions in calling for "increased visibility of researcher agency in knowledge production" and absolute attention to authorship. As the creator or co-creator or remediator of digital archaeological objects, it is important to fully disclose not only interpretive decisions but to understand the creation of these objects as a reflexive action, ripe with authorial intent. Secondly, digital media allows for the inclusion of multiple perspectives and Conkey and Gero's second point, "less hierarchical organization." On its surface, inclusion in the process of digital media object creation does not seem to be a difficult task, however much of the work is done far away from the excavation, far away from "the trowel's edge." Third, there needs to be a serious evaluation of sharing, openness, and transparency associated with each project, agreed upon by all members of the project. If archaeological information cannot be shared, it should be for a stated and definite reason. Finally, careful attention needs to be paid to the multiple contexts that digital objects inhabit and the affordances and accommodations that arise with creating objects in this network of meaning. Each of these points bears expanding, but it is also important to note that they are used consciously, explicitly and in concert with one another.

Authorship

Authorship in archaeological interpretation has its own body of literature that I will reference as appropriate. In terms of digital archaeology, authorship can range in meaning from embedded information in media to citational difficulties when referencing blog posts and Facebook groups. In this case, the topic of blogging can be instructive. While there are a few anonymous archaeology bloggers, most find it extremely difficult to write about their work or topics that are close to them without revealing their identity. As the formerly negative attitudes toward blogging change, most archaeological bloggers are open with their identity and use their blogging activity to promote their work. Being a public intellectual has the advantage that bloggers may give credentials with which to back up their arguments, especially in light of the copious amounts of misinformation that can invade discussions of archaeological topics. To give an example, Johan Normark, an archaeology graduate student from Linnaus University, took on the arguments of a vocal minority who believe that the world will end in 2012. He found this battle to be informative but exhausting. Yet he was able to stem the tide of those who would use archaeology to perpetuate conspiracy theories. Similarly, Rosemary Joyce, a storied professor of archaeology from the University of California, Berkeley disputed the news media's characterization of Neanderthal remains as evidence of "gay cavemen" by citing extensive research. This refute was then reported in the media, an instructive corrective and a stunning example of the power of authorship in being the loudest, most informed person in the room.

In the case of visual media, authorship can be less obvious, especially if watermarked images are cropped or metadata is stripped from the object. 3D visualizations complicate this topic further, wherein the finished result can be a collaborative effort among several archaeologists. This is further complicated by Barthes' position of co-authorship of visual media, that of the maker and the viewer being co-authors of the meaning of the object. Indeed, digital objects can be more explicitly co-opted through remixing of the meaning, or repositioning and re-contextualizing the object to illustrate meanings that can directly contradict the original author's intent. Tringham cites Bolter and Grusin's concepts of Respectful Remediation and Radical/Revolutionary Remediation regarding this

potential for re-contextualization of archaeological interpretations as "part of the de-centering — nothing is sacred; the construction of knowledge is essentially collaborative and cumulative" (Tringham et al.. 2007). Indeed, re-contextualizations of interpretations can bring new interest and perspectives to a topic that many would see as dry and unengaging. A good internet citizen would preserve the authorship chain by linking back to the original creation and providing a citation, but this is the exception rather than the rule. A progressive approach to digital archaeology would not only embed the digital object with appropriate authorial metadata but also an interesting and accessible interpretive context—a solid foundation to inspire creative re-use and sharing.

Though I have provided a strong argument in favor of transparent and reflexive authorship of digital objects, it would be remiss to ignore the anonymizing potential of the internet for political action in archaeology. With the increased visibility of individuals who participate in the role of the public intellectual on the internet, there are several instances where it could be desirable to remain anonymous. While it can certainly be argued that there is no such thing as true anonymity on the internet through the various methods of tracking individual ISPs and through the small and self-selecting pool of archaeologists who participate on the internet and their research interests, some archaeologists use tactical anonymity for information sharing in risky contexts. For example many prospective graduate students and recent Ph.D.s use anonymous wikis to update their fellow position-seekers regarding the process of selection and hiring. Using wikis in this way can combat the opacity of academic process for the traditionally disempowered and disenfranchised candidate pool. In another example, a high-profile academic archaeologist maintained a veneer of anonymity to translate and share information regarding a government coup that not only brought misery to the citizens in the country but also destroyed years of research and directly affected the cultural heritage in the country. Anonymous participation by informed citizenry can certainly contribute to the emancipatory power of the internet, albeit at a cost of devalued information that is not backed by known scholarship. Multivocal interpretation in digital archaeology only really works when the tenor and pitch of the voice can be correctly assessed.

Inclusion

The creation of digital media objects, while certainly informed by many opinions, is often performed in relative seclusion, far away from the excavation trenches, by specialists who are highly trained in computer techniques but can sometimes lack general archaeological skills. It is an unfortunate side-effect of the growing specialization in archaeology, but one that can be remedied through direct action. Democratizing digital object creation has the benefit of both opening up archaeological interpretation to multiple voices and teaching traditionally disempowered populations skills that can translate into increased self-expression and greater job opportunities. Before the prevalence of digital technology, film and photography shot on site would have to be saved and then processed at a later date, sometimes by professionals with no connection to the project or to archaeology in general. With the increased portability of high-powered computers and the growing ubiquity of the internet, digital processing can be done on site by archaeologists participating in the excavation process. I will expand on the benefits and difficulties of this process in later chapters, but I will illustrate with a brief anecedote: After shooting digital video of one of the primary archaeologists involved at Çatalhöyük, Roddy Regan, he told me that he'd been videoed hundreds of times and had never seen a single bit of the footage.

Greater inclusivity in the creation of digital archaeological objects can be characterized as falling along a spectrum. While some of the equipment involved can be expensive and breakable, surely the equipment can be trusted with people who are trusted to excavate the archaeological record.

Mistakes and accidents happen, but they also happen with the most trained of digital specialists and should not be an excuse to keep media-making equipment out of the hands of everyone on the excavation. It is not uncommon for site archaeologists to take their own digital photographs, but the media is then often taken out of the archaeologist's hands to be processed and catalogued by a media specialist. This is also on sites with better practices—often the photographs taken by archaeologists are not catalogued at all, but dumped into generalized folders for later sorting by the project director. Training in digital methods should be applied site-wide and should follow the process from beginning to end, that is, from the creation of the digital object through curation, to remixing and remediation. During this training there should be an emphasis on the possibilities of narrative structure in photographs, that is, using photographs to tell a story about the excavation. Also, all digital media should be accounted for as part of the larger site archive. Including lower-quality cameraphone photographs and video in the archive can lend unexpected insights to the archaeological process. As Jonathan Bateman notes, photography on site can be generally divided into formal excavation shots and personal, social shots but blurring the two can provide "immediate and thoughtful engagement with the people around" (Bateman 2005:196). Using digital recording can be a means to bring site participants together, rather than delineate social roles within the excavation.

Openess/Transparency/Sharing

Along with training the entire field crew in digital recording methods and maintaining an inclusive archive, the digital objects created during archaeological investigations should be shared as widely as possible. While there are certainly instances where sharing knowledge is not desirable, for instance when the pursuit of archaeological knowledge clashes with tribal beliefs (Kansa et al. 2005), sharing should be the "default" for archaeological knowledge, especially when the majority of projects are funded directly or indirectly through public resources. Repositioning sharing as a central goal during all stages of research can substantially improve the public profile of the project and increase the chance that the information will be conserved (Tringham 2009). While this kind of cloud-consciousness of archaeological information certainly cannot be replace the archive, making it easy for stakeholders to share, copy, appropriate and remix digital archaeological objects can make them more appealing for personal curation, in effect, "crowd-sourcing" the archive. Much of the content on the web is used in this fashion regardless of copyright and availability, but making the copyright for text, photographs and other digital objects clean from the outset emphasizes the willingness to share the content as widely as possible. Additionally, it can speed the publishing process if such permissions are clearly granted from the outset. Even further, designating an open copyright expresses the creator's knowledge and willingness to engage in a very public debate over rights in the digital age.

Explicit designation of copyright through Creative Commons, an alternative copyright that allows the creator of the work to designate how the work can be shared, has grown in use in archaeology. Founded in 2001, Creative Commons aims to "build a layer of reasonable copyright on top of the extremes that now reign" (…) "making it easy for people to build upon other people's work" (Lessig 2004:282). Some archaeologists are willing to assign a Creative Commons copyright to online content, but it is rarely used in print, and difficult to indicate for some digital works, such as 3D reconstructions. Archaeological knowledge production is collaborative; making this production explicit by engaging with copyright and the sharing of ideas at the outset of a project adds transparency to the process. The inspiration for Creative Commons stemmed from the Open Source movement and the Free Software Foundation, both founded by Richard Stallman in the 1990s. Stallman had worked as a hacker in a lab at MIT, developing software before there was extensive

software licensing. When software started shipping with nondisclosure agreements, Stallman saw this as deeply antisocial, that it was "the first step in using a computer was to promise not to help your neighbor" (18). The Free Software Foundation has since had a tremendous impact on the computing world, even if many people who now use computers do not realize the intellectual and spiritual debt that Internet culture has to Richard Stallman. Deeper than the commitment to licensing creative content under the Creative Commons, the principles of the Free Software Foundation require that the source code for software is fully disclosed and fully modifiable by all who use software licensed under its aegis.

While some archaeologists are marginally aware of Creative Commons licensing, many archaeologists, myself included, exclusively use proprietary software. The software often is the industry standard and there are not necessarily good alternatives to use. In 2011, common proprietary software includes ArcGIS, the extremely popular global information system software suite, costs USD 1500 for a single-user license and Microsoft Access, an overwhelmingly popular database software costs USD 99 per license. More specialized software such as Autodesk costs 4000 for a single license and yet increasingly interpretive projects and publications call for visualizations that require the detail and complexity that expensive proprietary software can provide. Whether they are students or professionals, archaeologists generally do not have the money to purchase the sophisticated software with expensive licensing, so the copies are often illegitimate, and can stop working at any time. While it would be imprudent to identify specific individuals, archaeologists generally have thousands and sometimes tens of thousands of dollars of illegally downloaded software to perform everyday tasks and do not hesitate to publish results and visualizations gained from using this illegal software. Whether or not the archaeologist has a philosophical commitment to Open Source and Creative Commons, it is in their interest to prevent the catastrophic data loss that is possible with proprietary formats and illegitimate software. To this end, L-P Archaeology has developed their own database software called ARK, which is open source and available for archaeologists to download. Sadly, much of the proprietary software that archaeologists use has not been replaced by similar open source software. Even in cases where there are free alternatives such as Open Office, archaeologists do not feel like they have the time to learn something different and worry that the results will suffer. Obviously a more formal study of software use among archaeologists would be required to make steps towards correcting the issues surrounding Open Source software, data formats, and preservation standards. Still, there are many places for archaeologists to fit into the Open Source and sharing spectrum, whether it involves Creative Commons licensing for photographs or developing specialized software — supporting these efforts would benefit our collections, our connection to our stakeholders and the longevity of the archive.

Contextualization

Digital artifacts are by nature multiple. In his seminal work, *The Language of New Media*, Lev Manovich put forth five principles in which new media is different from old media. While these principles are imminently debatable (as has been shown by much of the subsequent literature, by others and Manovich himself), he specifically cites the materiality of digital media in the qualities he describes as digital media's numerical representation and modularity, qualities that enable this media to exist in multiple places, multiple states, and with inconsistent qualities. For example, a digital photograph of a teapot, the subject of my first object biography, existed as a numerical sequence as a RAW file on my Nikon DSLR, then was downloaded onto a laptop, then another copy was modified in Adobe Lightroom, then this JPEG copy along with the RAW file was backed up on an external hard drive. The photograph was uploaded to the internet as a photograph on Flickr where it was accessed 136 times as of October, 2011, then printed out and displayed on a wall in Dhiban,

Jordan, then another copy was printed for Dhiban's former mayor at his request, where it presumably now hangs in his reception room. There will be a copy of it in the digital version of this dissertation, at a much lower resolution than the original RAW file. The photograph exists in multiple places, in multiple forms, where it serves multiple purposes. This multiple nature complicates digital media creation, and it is easy to lose control of the object. Copies of my photograph could have been downloaded from Flickr, and the Dhiban Archaeology and Development Project has used it on their website, but with my consent, as the photograph was licensed under Creative Commons. This loss of control is difficult for archaeologists to come to terms with, and can present difficulties when working in countries that require full disclosure to the government before any public outreach can be performed.

Just as the digital artifacts occupy multiple contexts, they are often created in very specific contexts that usually remain unexamined. I discussed several of the stakeholders that are often ignored while creating archaeological digital media at the beginning of this chapter, but there is also a lack of reflexivity in the specific context of the artifact's creation. A digital photograph or video presumably requires the presence of the initial creator of the digital media, but later iterations of modifications in Photoshop do not require an on-site presence. This is particularly common and apparent with virtual reconstructions, where most of the creators involved probably have not excavated the archaeology that they are reconstructing. Just as the principle of modularity affords the potential for digital media to be reused, sometimes without the knowledge or consent of the original creator, this same principle can allow the creator of the digital media to disconnect the media from the original context and recontextualize it in a way that is unrecognizable to the surrounding community. Worse, the object is not made accessible to the community or discussed in any way.

The creation of digital media should contain the willingness to consider the context it was made and disseminated in, with the emphasis in bringing it back to the place and people where it originated. A few crucial questions should be asked in the process of this creation: What does media-making mean in the area you are working in? What does it mean that you, in particular, are making the media? Should you consult Human Subjects review before creating the media, or before disseminating the results? What does the digitality of the object afford? Finally, what is the political and socio-economic context of this media? Following the points that I have introduced leads to the creation of mature, robust and actualized archaeological digital media that can be subjected to peer review, used for tenure-track promotion material, and contribute to an emancipatory archaeology.

Chapter 4 – Tempest in a digital teapot

But isn't a photographer who can't read his own pictures worth less than an illiterate?
(Walter Benjamin, 1968)

It was hot, but that was not unusual. We woke up at the first call to prayer to be on site at sunrise. I would trudge through the dimly-lit streets of the village, up to the ancient tell, and sit next to my trench until I had enough light to see my paperwork. The cut limestone went from dull gray, to a rosy pink, then that brief and magical moment called the golden hour, when the archaeology would become clear and beautifully lit and I would rush around trying to take the important photos of the day. Then the light would become hard, white-hot, and often over 100 degrees. By lunchtime all of the crisp angles of the limestone would disappear into a smeary haze, hardly worth bothering with a camera. Photographs of people were impossible too—everyone was dusty, hot, irritable, half in shadow under hats, scarves.

I picked up my camera and climbed out of the Mamluk building I was excavating, on my way down the ancient tell of Dhiban and back up the neighboring tell of the modern town of Dhiban. As I walked between the Byzantine, Roman, Nabatean and Islamic piles of cut stone, a faint trace of smoke made me hesitate, then come off the winding goat path. Two of our workmen, self-identifying members of the Bani Hamida bedouin, were stoking a small fire on the tell. While making fires on the archaeology was certainly not encouraged, the local community had been using the tell to socialize for a long time. I greeted the men and they invited me to sit and have qahwa, a strong, hot, sweet, green coffee served in many of the local hospitality rituals and customs. I refused once, then twice, then looked over my shoulder at the vanishing backs of my fellow archaeologists, on their way to breakfast. Then I accepted a cup. But first, I pulled out my camera and snapped a photo.

Figure 4.1 The teakettle on Tall Dhiban

The kettle is unremarkable—small, black, slightly battered, set in a glowing pile of twigs on top of a high ridge. Limestone boulders surround the small pot, and a trained archaeological eye can see that some of the rocks were dressed, originally cut to sit in the wall of a home, an animal pen, a

church, a mosque, or a field wall. Indeed the stones would have been part of each of those structures, used and reused over the millenia of habitation on the tell. The rocks have been used once again, this time to ring a small, illicit fire to boil water for coffee. Set in the dun, thistle-covered landscape of Tall Dhiban, the image of the tea kettle is a nexus of meaning with connections between traditional hospitality, representation, digitality, and the history and the social life of the archaeological digital photograph.

On first glance, the photograph does not immediately appear to be archaeological. There are no tools, no open trench, no safety equipment or archaeologists painstakingly scraping the dirt. There are no visible qualities in the photograph that inherently makes it part of the site archive produced as part of the work of field archaeology; the photograph has no scale, nor does it have a north arrow, nor a chalkboard indicating subject matter, context, or date. Indeed the addition of a scale or north arrow might produce confusion and anxiety in the archaeology-trained viewer of the photograph, as an unexpected juxtapositioning of archaeological recording norms with modern subject matter.[1] The scale, north arrow, and photo board are epistemic markers, talismans of the archaeological photographer (Chadha 2002) and their use is discussed in basic archaeological field manuals. As explained by Chadha,

> "the use of the scale an epistemic marker in archaeological photographs is a common means of transforming an arbitrary sign of the past into scientific knowledge that inscribes an epistemic certainty, which cannot be challenged. This is exacerbated in archaeological excavation as it is a destructive means of knowledge production that can never be challenged or tested at that particular trench or location. In this process, the photographic document with an epistemic marker transforms the moment of discovery into empirical evidence and inscribes on it a concreteness, which may not be questioned. Thus, the scale becomes the most important signifier of an archaeological photograph…." (2002:13).

Figure 4.2 A room interior and stone floor at Tall Dhiban

The construction of an archive or report-worthy photograph with the appropriate epistemic markers is a formalized ritual within the field of archaeology; an "essential part of archaeological

[1] It is just this kind of work in unexpected juxtapositioning that has been successfully undertaken by the brilliant photography of Fotis Ifantidis, a Greek archaeologist who has been pushing the boundaries of photowork and exhibiting them on his blog, *Visualizing Neolithic*.

practice" that "has become intricately linked to the processes of excavation and recording that help define what archaeology is" (Bateman 2005:192). In his historiographic discussion of archaeology field manuals and the received wisdom regarding archaeological photography, Travis Parno suggests that these photographs are "attempts at sterile, dispassionate recordings representing, in an unbiased manner, the state of a site, unit, feature or artifact" (2010:123). Similarly, Michael Shanks notes that photographs are "taken for granted in archaeology…treated as visual aids, helping to record or identify features and objects, or they may provide illustrative ambience, landscape backdrop, evocations of setting" but that "there is little or no questioning of conventional uses of photography" (1997:73). Art historian Frederick Bohrer states that "at its most scientific, archaeology seeks to approach the photographic image as document, not to look at the photograph so much as to look through it to the object pictured" (2011:26). While archaeological photography has adopted an accepted (yet not entirely uniform) lingua franca, this common visual language has changed since the early antiquarian age of archaeology.

History of photography in archaeology

Archaeology and photography, both considered projects and products of modernity, have extensively exchanged metaphorical weight throughout their complimentary histories. As early as 1839, Dominique François Jean Arago enthusiastically embraced photography as a means to accurately "copy the millions of hieroglyphics which cover even the exterior of the great monuments of Thebes, Memphis, Karnak" in a way that would "excel the works of the most accomplished painters, in fidelity of detail and true reproduction of the local atmosphere" (Banta et al. 1986:73). Fox Talbot, the inventor of the 'Calotype' process in 1841, was an antiquarian and took photographs of manuscripts, engravings, and busts (Dorrell 1989).

While archaeologists have considered photography as an attractive and theoretically transparent way to quickly document sites and artifacts, critics and theorists of photography have drawn on archaeological metaphors to describe and understand photographs. In describing Joseph Nicéphore Niepce's first photograph, Graham Clarke declares it "not so much an image as an archaeological fragment" due to poor quality and representation (1997:12). Susan Sontag spells out this relationship, stating that "photographs are, of course, artifacts" (1977:69). They "turn the past into a consumable object" (68), by "slicing out this moment and freezing it" (15), "giv(ing) people an imaginary possession of a past that is unreal" (9). John Berger expands on Sontag, acknowledging that "photographs are relics of the past, traces of what has happened" (1980:61), but he champions creating an "alternative photography" wherein photographs are contextualized, situated through social and political memory. Roland Barthes further obscures the relationship between the photograph and the 'reality' of the past by stating that "the reading of the photograph is thus always historical" (1977:28). While the linkage between artifact and past meaning has been problematized extensively in archaeology, archaeologists' apparently objective use of photography as a tool to represent scientific process has only recently been called into question. As previously mentioned, Michael Shanks destabilizes the use of photographs as "transparent windows", situating 'photowork' within a specific framework of cultural production within archaeology (1997).

While Joseph Nicéphore Niepce's first photograph may now be referred to as an "archaeological fragment", the use of photography in archaeology was limited first to antiquarian practice, as in the photographs of Fox Talbot. Maxime du Camp's photographs of monuments in Egypt, Nubia, Palestine and Syria during his travels with Flaubert were reproduced in a wildly popular folio, making ancient architecture not only available to the Egyptologists of the Academie

des Inscriptions et Belles Lettres who sanction the trip, but also to the French public (Schwartz and Ryan 2003). Prompted by the arrival of the artifacts from Sir Henry Layard's excavations at Nineveh, the British Museum planned to build a glass-house and a dark room for photography in 1853, but ran out of funds and was never completed (Dorrell 1989). Monumental architecture and artifacts aside, photographs of excavations were also produced at this time, but were often used as the basis of lithographs or engravings that were used instead of the original photographs to illustrate books (Dorrell 1989). Moving firmly beyond these drawings was Salzmann's photography of Jerusalem that was explicitly used by archaeologist Felicien de Saulcy to ascribe greater age to artifacts previously associated with biblical times. Salzmann contrasts his work to the earlier standard of drawing by stating "Photographs are more than tales, they are facts endowed with a convincing brute force", commenting on photography's "putative objectivity" and "rhetorical force" to "not just passively document, but actively argues for an interpretive position" (Bohrer 2005:181-182).

Along with the photographic colonization of monuments and excavations, the rise of anthropology in the mid-19th century prompted cataloging indigenous people, often as these same peoples were being systematically killed. While the literature regarding the depiction of indigenous peoples is too large to be addressed in this paper, any discussion of the history of photography in archaeology must include an acknowledgement of the violent combination of the camera and the pursuit of anthropological knowledge. In North America, debates over the institution of slavery and the inequality of the Native Americans were illustrated by photographs from researchers such as Louis Agassiz of Harvard, who assembled a large collection to exemplify biologically distinct racial types (Banta et al. 1986). At the turn of the century the Native American way of life was considered dead and any relics of America's 'wild' past could be romanticized behind the safety of a lens. While many of these photographs were of dubious authenticity, being staged, often with props brought in by the photographer, collections such as the one housed at the University of California at Berkeley have nonetheless been helping to reconstruct Native American lifeways. In his work with the Native Californians, Tsim Schneider uses this collection of photographs as part of an interview process to prompt memory and direct conversation (2007). These photographs, originally taken in the context of an unequal relationship between the researcher and the Native American, have been repurposed to empower descendent communities as narrative touchstones and as a means to reclaim ancestral lands (Schneider 2007).

Concurrent with the large ethnographic salvage projects that occurred at the turn of the century, North American archaeologists normalized scientific excavation strategies, incorporating documentary photography as a field technique. By 1906, British archaeologist Sir Flinders Petrie published an entire chapter on photography in *Methods and aims of archaeology* (Guha 2002), and North American archaeological photography was not far behind. The move from cataloguing of architectural remains such as Mesa Verde and the monumental buildings of Mexico to the integration of photography into field methodology also marks the move to the culture history era of Americanist archaeology, which characterizes the first fifty years of 20th century scholarship. During this time, the use of aerial photography in archaeology emerged in Britain. The first known aerial photo, taken from an Army war-balloon in 1906, was of Stonehenge (Wilson 1982). The technique was not fully realized until after the first World War, when intelligence gathering was performed by taking photos from aircrafts. This new perspective allowed archaeologists to see spatial patterning that is invisible from the ground at existing sites as well as discover altogether new sites. During this time a shift in excavation imagery culminating in the regimented World War II-era excavation photography of British archaeologist Mortimer Wheeler develops and is elucidated by Sudeshna Guha in his comparison of photos from excavations in India (2002). With the onset of large-scale excavations, the objective to make "quantifiable documents" that could be used comparatively

became important in archaeology. In the 1910s, the measuring scale that now is a defining feature of archaeological photographs appeared and became ubiquitous (98). Wheeler imposed strict regulations for site photography, using the camera as a scientific recording device, and created new genres of archaeological photography in making fieldwork explicitly visible. Wheeler also ushered in a more strictly 'scientific' and 'objective' "abandoning all aesthetic genres of representation" and removing the names of the photographers from the individual photographs (99).

This shift would characterize a larger move within British and Americanist archaeology toward scientific positivism after World War II. During this time, a number of manuals dictating proper methodology emerged, reflecting the rapidly changing photographic technology. An emphasis on the camera as part of the archaeological toolkit appears throughout this literature, and the archaeologist-photographer is considered a poor second to a more professional photographer. An archaeologist makes "use of the camera simply as a recording instrument, referring to the photograph or transparency later as a means of refreshing memory or to confirm previous findings" (Matthews 1968:101). Contrary to Michael Shanks' characterization of un-critical archaeological photographers, there are several instances in the older literature that question the veracity of photography as a recording method. Indeed, when matters of inaccuracy in photographs are raised, the camera is cast as an "awful liar" and the archaeologist must struggle to produce an objective of truth "as he sees it and not as the camera may see it" and that a failure in this regard might lead us to "misinterpret its product with our subjective eyes or minds" (Simmons 1969:4). Another concern is site cleanliness, where the photographer must communicate to the archaeologist a need for the workmen to remove "unsightly clutter" which can detract from the "intended subject" (48).

By the mid-1970s, the complexity of archaeological photography had increased considerably. In the comprehensive and highly technical book edited by Harp (1975), there are sections on aerial photography, underwater photography, and, notably, public audiencing of technical photographs. The suggestion is that photographs can be used to communicate messages, and that "photographs, like messages in any other medium, are symbolic simplifications" (Dechert 1975:348), but this question is still framed in terms of miscommunication between the photographer and the camera and the biases introduced by the camera. A similar book was published in the United Kingdom, with an emphasis on technical detail, intending to inform the "production of dispassionate factual records rather than pleasing illustrations of them" and that "the execution of the photographs is an important element in ensuring that they present the facts they are to illustrate as strikingly and vividly, as well as accurately as possible" (Conlon 1973:xiii). The positivism displayed in these books reflects the move toward scientific methodology characteristic of the New Archaeology, or processual archaeology, championed in North America by Lewis Binford and in the United Kingdom by David Clarke.

Further developments in infrared and ultra-violet photography enhanced visibility of sites and as technology in photography became available and more inexpensive, archaeology manuals were updated to reflect this change, but hints of self-awareness remained scarce. In the last book published solely about photography in archaeology,[2] *Photography in Archaeology and Conservation*, a brief section regarding photographing people hints at the complexities inherent in staging site photography. The author encourages the photographer to emulate *National Geographic Magazine* when

[2] While Frederick Bohrer's 2011 book Photography and Archaeology was published subsequent to the initial draft of this chapter, it is primarily an art-historical approach to the subject and does not suggest further, more progressive methodologies for archaeological photography.

possible, that the work area should look clean and efficient, and to exercise tact when photographing local people (Dorrell 1989). This advice is perhaps ill-conceived, as the photography in *National Geographic Magazine* came under considerable scrutiny in postcolonial theory and visual anthropology (in particular, Lutz and Collins 1993) and possibly suspect in photographic veracity, as discussed later in this chapter.

By this time, archaeological photography had become, for the most part, standardized. Mortimer Wheeler's photo scale was now accompanied by an arrow to indicate north and a photo board with the photograph's locale prominently displayed. People, when present, were working diligently and anonymously. Artifacts were photographed in isolation, with the background burned out in post-processing. This impression of the artifact "floating in space", far removed from the dirt of the excavation, was seen as more scientific, with fewer distractions. This mechanization and standardization of photography in archaeology was also due to the growing professionalization of archaeology. In the United States and the United Kingdom, excavations were increasingly performed by private companies with deadlines and budgets to meet. This remains the case today, with Cultural Resource Management firms often excavating in the shadow of developers' bulldozers.

In the last two decades, a growing critique from post-processual and feminist archaeologists has destabilized the scientific positivism of processual archaeology. This has introduced a number of alternate archaeologies, each informed by different perspectives, such as indigenous archaeology and symmetrical archaeology. While issues of representation arose during this time (Moser 1998), examinations of photography in archaeology has been somewhat limited. Shanks introduces a critique of photography, identifying genres and suggests potential venues for future research (1997). He suggests using montage and disunity with text to throw into question the use of photography. He also suggests using photographs for ethnographies of the profession. Since the 1990s, these ideas have been developed and explored in many publications, including Jonathan Bateman's record of an archaeological project in the United Kingdom wherein he questions the supposed objectivity of photography and juxtaposes professional and private categories of photography in archaeology (2005).

Just as archaeologists were coming to grips with what Shanks has termed "photoworks" in archaeology, photography was undergoing another transition, this time to digital. In the last decade, archaeological photography has overwhelmingly adopted digital photography. In the decade since digital cameras have started to appear on archaeological sites, great improvements to the technology have taken place in terms of resolution, file size, and cost. While a few museum archives still require slides or negatives for their permanent records, archival standards are also shifting to favor digital records (Wheatley 2010). In addition to improvements to the technological aspects of digital photography, people have learned to use digital cameras with better results and with greater ease than analog photography, through the simple mechanism of instant feedback on an LCD screen when using the digital camera. Many archaeologists have their own digital cameras, and while they may not be employed as official site photographers, they often take photographs during archaeological excavations that can correspond to Bateman's (2005) categories of documentary and personal photography or, increasingly, to a third category of archaeological photographers, "photography that is between artwork and visual ethnographic commentary" (Hamilakis et al. 2009:289).

Current archaeological photographic practice

While I have undertaken a short history of photography, I feel that I need to further disambiguate the present-day practice of archaeological photography. Archaeology, as it is practiced in North America, requires an undergraduate degree in either Anthropology or Archaeology (with some notable exceptions). Most programs require the student to attend a field school, during which the student is taught basic archaeological field practice as performed in North America. The student is immersed in an apprentice-like situation, which continues if the student chooses to enter professional archaeology. At best, this apprenticeship is constructed as legitimate peripheral participation wherein learners fully participate in a community of practice (Lave and Wenger 1991). This participation is "not merely a condition for membership (in the community of practice) but is itself an evolving form of membership" (53) and that learning involves an ongoing and mutual construction of identity.

Whether or not archaeology is a craft with a community of practice has been debated elsewhere (see Shanks and McGuire 1996), but as it is practiced at Çatalhöyük, archaeological investigation involves a "reflexive methodology" wherein archaeologists are instructed to interpret "at the trowel's edge," constructing contextual meanings as they excavate (Hodder 1997). More specific to the issue of archaeological photography is the practice of learning how to see archaeology, that is, minute differences in soil texture, color, and composition and how to translate these differences to a photograph. Investigating this professional vision, Charles Goodwin describes two archaeologists drawing a plan map together, a professor and a student (1994). The professor, Ann, asks Sue to take a measurement "everywhere there is a change in slope" asking Sue to perform her knowledge of soil differentiation in a venue where Ann would be able to take remedial corrective action if Sue were in error (615). Excavation at Çatalhöyük requires a substantial adjustment in archaeological seeing, as it is stratigraphically very complex and the changes in the depositions can be extremely subtle. Though extremely experienced professional archaeologists were employed[3] at Çatalhöyük to teach students to understand the complexity of the stratigraphy, a site photographer was also employed to photograph the more difficult phase shots and detail shots, as well as photographing finds. This is an exception though, as many sites do not have the budget to employ an exclusive photographer and most of the photographic recording is performed by the archaeologists. This is more relevant in the last twenty years, as specialist photographers who do not also excavate or at least have no archaeological training are rare and fieldworkers are expected to incorporate photography into the process of excavation and documentation of the site.

Though archaeological vision is learned and dictates onsite photography, this vision is not necessarily collective and particular photographs need written or verbal annotation to describe the motivation behind taking the photograph. Even to the archaeologist behind the camera, photographs are often not transparent in meaning upon later review. Thus, descriptions of photographs generally fall under the purview of a set of onsite proscriptions, determined either by the project director, or by a more general governing body such as the local heritage society or archive where the materials from the excavation will be deposited. In order to aid later interpretation, photos include a scale, an arrow indicating north, and a photoboard, on which is

[3] Site director Ian Hodder fired most of the professional archaeologists working for him in 2012. Almost all of the archaeologists who were not fired quit in solidarity.

written the day, the locale, and sometimes the initials of the excavators responsible for the appearance of the unit. Sometimes written photo registers are required on site, with the photograph's metadata of the photograph written down to accompany the shot for later entry into a database. While taking certain standardized site shots is normal procedure at an archaeological site, it could be considered a bare minimum of recording for archaeological photography. Off-site transcription of photography data is an important component of the site archive, where digital photographs are catalogued and sorted according to context number. Sadly there is no methodological consistency or standards regarding the process of cataloguing and archiving digital materials.[4] Nor is it likely that a global standard will be developed; even though digital photography is ubiquitous in archaeological recording, there are still substantial divides in the technological capabilities and the particular requirements demanded by archaeological projects. Interestingly, this lack of a global standard for archaeological metadata does not apply to digital photography in social media.

Increasingly, archaeological site photography is being uploaded to social media sites. When archaeological site photography was primarily analog, most personal photography remained within the personal belongings of archaeological team members. Occasionally this photography was shared with other team members through additional copies being made of a photograph, or was posted in a common area for the other team members to view. After the common adoption of digital cameras, digital photographs could be traded on a common server, sent to fellow team members in email, or posted to team websites. Still, many team members did not carry digital cameras on site, and personal photography was limited to social gatherings, significant finds, or travel during the season. These photographs, while more widespread, were often still not available to people outside of the immediate archaeological team.

When relationship-based social media sites such as Friendster (2002), Myspace (2003), and Facebook (2004) became established, archaeologists started using these sites to share photographs of excavations and of themselves. Photo-based social networking site Flickr (2004) was also popular among archaeologists, who created groups dedicated to archaeological photography and used the site for more generalized outreach. Archaeological photographs on the relationship-based social media sites were more often used to enact identity. Archaeologists would portray themselves in the field as their main social network portraits, sometimes in order to connect with other archaeologists outside of their main social group. Archaeologists working on a team would connect on these sites and share the photographs they had taken of each other and of the site. As digital cameras became cheaper and good quality digital photography was possible on smaller devices, more personal digital photography was performed on site by team members, who could often share these photographs immediately, circumventing any slower media strategies. Eventually this became seen as problematic behavior as site directors working internationally were required to clear any archaeological findings with the government before disseminating the results. While this consideration has restricted some on-site photography, it is impossible to completely patrol the social networks for indiscreet photographs.

Perhaps to the relief of site directors, much of informal on-site digital photography has now turned to cellphone applications such as Instagram or Hipstamatic (discussed more in-depth below), programs that apply effects to the photographs, making them appear to be taken with older, analog

[4] There are metadata standards suggested by CIDOC-CRM and the Dublin Core, but very few archaeologists know about these standards.

cameras. This obscures the archaeological site and degrades the file size of the photograph, producing images that would be difficult to cite or republish. Still, while archaeological site photography archives are often not standardized, tagged, or accessible, photographs that are uploaded to social media sites are found more easily through the temporal and topical tagging done by the social media sites and by the person uploading the photographs. These personal photographs can often illustrate nuances that were not covered in the official site archive, creating an online parallel archive of personal work that is more accessible and often more clearly illustrates the lived experience of archaeology. This parallel archive also contains photographs that are taken by visitors to the site, or by more marginalized participants in the archaeological process, including workmen who now have access to cameras on their cellphones.

Considerations of current archaeological photographic practice must engage with the multiplicity of the digital medium and the attending affordances of rapidly shifting technology. Outside of official site photographs and the growing parallel personal archive, archaeological site photography also encompasses aerial/kite photography, photogrammetry, partial and full panoramic photographs, satellite imagery, and time lapse photography, each with their own benefits and limitations; a full assessment of each of these techniques is outside the purview of this dissertation. Still, it is important to note that in addition to the shift in technology, there has also been a more subtle shift in the content of a subset of site photographs. Archaeologists still take very formulaic photographs of artifacts, features, and buildings. While digital technology allows for more of these photographs to be taken, most archaeologists still do not experiment within the parameters of archival photography. This is unsurprising, as clear, well-lit, "clean" photographs, or a "record shot" are still considered a necessary standard in archaeological recording. All other photographs (personal and working shots) are supplemental to this "record shot" and are deemed not as important. I endorse the ongoing norms of archaeological site photography, though with the view that the supplementary record is just as important and necessary as the "record shots" of the archaeology. Even so, archaeological photography has been deeply changed by the digital turn. Yet there is still unrealized potential within the medium. I will demonstrate this change and push the boundaries of digital photography, but first I will engage with the wider body of literature on photography and the digital turn.

Digital photography - rupture or continuation?

While a more in-depth discussion of visuality and technology in archaeology can be found in Chapter Two, it is important to understand current digital photographic practice in archaeology in a wider scholarly context. As outlined by William J. Mitchell (1992), digital photography differs from analog photography in two crucial ways. The first is in materiality, a difference "grounded in fundamental physical characteristics that have logical and cultural consequences" (Mitchell 1992:4). This materiality manifests itself in multiple ways; Mitchell cites the photograph as being "an analog representation of the differentiation of space in a scene: it varies continuously, both spatially and tonally" whereas digital photographs describe "smooth curves and continuous gradients" by discrete pixels (4-5). While the technology of digital photography is rapidly improving, the images are still reproduced by a "two-dimensional array of integers" that "can be stored in computer memory, transmitted electronically, and interpreted by various devices to produce displays and printed images" (5). Mitchell also makes the point that the "continuous spatial and tonal variation of analog pictures is not exactly replicable so such images cannot be transmitted or copied without degradation" while digital photographs can be reproduced exactly—"a digital copy is not a debased descendent but is absolutely indistinguishable from the original" (6). I would argue that the changing

morphology of the digital camera is also a consideration in the materiality of digital photography, as cameras are both getting smaller and moving inside objects that previously did not have cameras, such as cellphones, tablet computers, and Barbie dolls.[5] The second way that analog photography differs from digital photography is in the relative mutability of the digital image. While there have been remixes and montages performed with analog photography since photography's inception, changing digital photographs is easily performed on a computer, or in some cases, on the camera that the photograph was taken on (7).

Adding a third point to Mitchell, digital photography dissolves boundaries, both between mediums (Lipkin 2005:10) and, I would argue, between people, between the photographer and photographed. For example, the ability to preview images on the camera's LCD screen (an additional change in the materiality of digital cameras) introduced three elements into the process of photography. First, the instant feedback available to the photographer allowed for corrections and the ability to change the photograph, in essence teaching the photographer how to take better photographs. Secondly, the LCD screen allows for co-authorship of photographs, the person behind the camera and the person in front of the camera can discuss the photograph and decide to keep it, re-take the photograph, and/or delete the photograph entirely. It is considered polite to offer to show the subject of the photograph the image on the LCD screen for their approval, creating a social contract between the co-authors of the photograph. At this time the fate of the photograph can also be decided, as the photographed person can conditionally accept the photograph, yet ask for it not to be shared online. Finally, the LCD screen can serve as a way to show photographs to other audiences later on, an echo of the earlier method of sharing digital photography by assembling around a computer screen, yet more mobile—perhaps recalling the passing around of a traditional photo album. Boundaries of subjectivity are transformed by the ability to co-author photographs.[6]

Much in the same way that the definition of "new media" is contested (see Chapter Two), Martin Lister disputes an easy categorization of the changes that digital technology has brought to analog photography. Instead of a dramatic impact "of one singular and monolithic technology on another" he frames the changes as a reconfiguration of existing modes of communication, not denying change, but "seek(ing) its dimensions in the untidiness and complexity of the lived rather than in rapidly conceived and overly abstract schemas of technological revolution" (Lister 1995:7). Understanding the changes that the move from analog to digital photography brought to archaeology must be seen in this way; an untidy, complex practice within a larger visual context. Informed by her intensive fieldwork among users of digital photography, Nancy Van House (2011) outlines "what people do differently with digital technologies" in a list of five characteristics that show a distinct progression in understanding compared to Mitchell's earlier comparison of analog and digital photography. Two of her points regarding the malleability of digital photographs and the "convenient and rapid viewing and sharing" of images that are "easily viewed almost anywhere, anytime" (128) echo the differences outlined by Mitchell, but there are three distinct additions. First, she finds that there are "better images, more images, more varied, and more often," that "while people still make traditional kinds of images, what is considered photo-worthy has expanded to

[5] "Mattel's new Barbie has a lens in her back; children point the doll at an image, and press a button on Barbie's belt to take a photo. The image then appears on the front of Barbie's T-shirt. The photos can also be downloaded to a computer." New York Times, Feb 25.2012

[6] Polaroid photographs served much the same function before digital photography, yet were limited by the cost of the film and the time that the photograph took to develop. This too has become nostalgic, as polaroid film ceased production in 2009 (Buse 2010).

include the everyday" (127). Secondly, there are "shifting notions of privacy and ownership" in which boundaries imposed by the film-and-paper materiality of analog photography are now more liquid, allowing both open, easy sharing and the loss of control of ownership by professional photographers and artists (128). Finally, digital photography allows for a "large but fragile archive" (ibid). While a vast quantity of photographs are taken with digital cameras, the digital files of these photographs do not preserve as well as photographs taken with film cameras. This latter point has been of great concern to archaeologists and archivists who wish to prolong the useability of archaeological archives. Identifying these changes in practice and materiality as we move from analog to digital photography in archaeology produces interesting permutations on these themes.

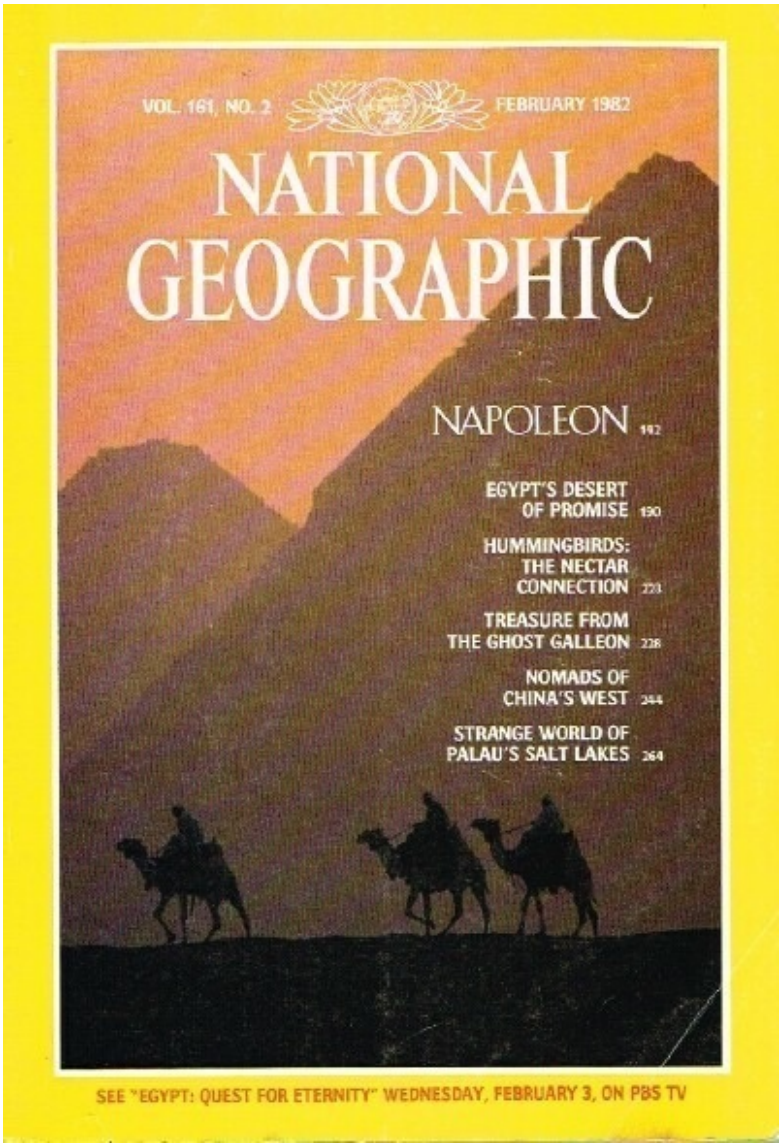


Figure 4.3 Pyramids on the cover of National Geographic (Ritchen 2009)

Just as some of the earliest photographs represented archaeological artifacts, Fred Ritchen (2009) cites a 1982 *National Geographic* photograph of the pyramids in Giza as marking the "date when the digital era came to photography" (27). The staff of *National Geographic* "electronically

moved a section of the photograph depicting one of the pyramids to a position partially behind another pyramid, rather than next to it" (ibid). The scene, as Ritchen notes, is "an already romanticized version" that excludes "the garbage, tourist buses, and souvenir hawkers" (ibid). Martha Rosler wonders if moving the pyramids, "a symbol of immutability and control" is "betraying history" by "asserting the easy domination of our civilization over all times and all places (Rosler 1991). The editor of National Geographic characterized the edit as a "retroactive repositioning of the photographer a few feet to one side so as to get another point of view" (Ritchen 2009:27).

While Ritchen describes this retroactive repositioning as "time travel" (28), archaeologists could understand this in alternate ways—archaeologists who have been relying on the apparent objectivity of photography to record architecture and excavations would identify this as falsification of the archaeological record, while other archaeologists may see it more as a remix, provided this repositioning was performed reflexively and transparently (Tringham 2009). The former conceptualization of photography as an objective record of reality and the current ease of manipulating digital photographs led some theorists to become interested in the "loss of the real" or the so called "death of photography" (Lister 1995:1). With nearly two decades of perspective it is easy to dismiss these claims, as the use of the digital image as evidence has persisted and the "low-resolution, pixilated appearance of early camera phone photographs and video clips is now an accepted part of the syntax of truthful and authentic reportage" (Rubinstein and Sluis 2008:11).

Yet falsification of imagery is still a concern in academic and scientific contexts. After *Science* published a doctored image showing remarkable advances in professor Hwang Woo-Suk's stem cell research, many scholarly journals have adopted procedures to check for fraudulent photographs (Farid 2009). While this has not, to my knowledge, become a widespread occurrence in archaeological publications, there are regular instances where archaeological photographs are photoshopped by non-archaeologists to forward outlandish or biblical claims. The most recent instance is in October of 2011, when photoshopped photographs claimed to support evidence for the existence of *Nephilim,* the biblical race of giants, including Goliath. The relative skill of the giants-in-Greece fabrications does not compare to the submissions to a regularly held Worth1000.com contest called "Archaeological Anomalies." Worth1000 has hosted photoshop contests since 2002, and the entrants are required to submit images that are "potential hoax images" (Figure 4.4) that look "like it could be a real photograph" (Worth1000.com 2012).

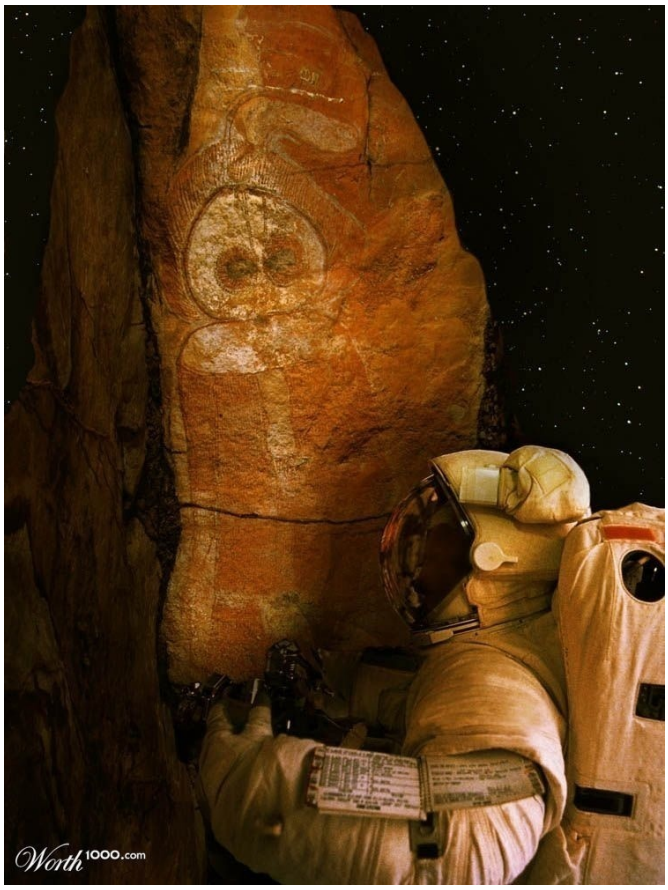


Figure 4.4 Photoshopped image of astronaut with rock art.

Figure 4.5 Mickey Mouse photoshopped on a beaker.

Archaeologist and Blogger Tom Goskar bemusedly notes that one of his photographs (Figure 4.5) has been used in one of these contests, a photograph of "a beaker from the grave of Boscombe Bowman" with the addition of Mickey Mouse (Goskar 2005). While the former modified photographs of *Nephilim* were made to intentionally mislead the viewers, the altered photographs in

the Worth1000 contest are made transparently, and often include obvious references to popular culture, such as in the Mickey Mouse example cited above.

Similarly, archaeologists regularly "photoshop" or modify archaeological photographs, but primarily in a transparent fashion. It is regular practice to replace scales that are photographed with artifacts with digitally-created scales. This is done to make images more tidy, especially in the circumstance of bad lighting conditions during the initial photography of the artifact.

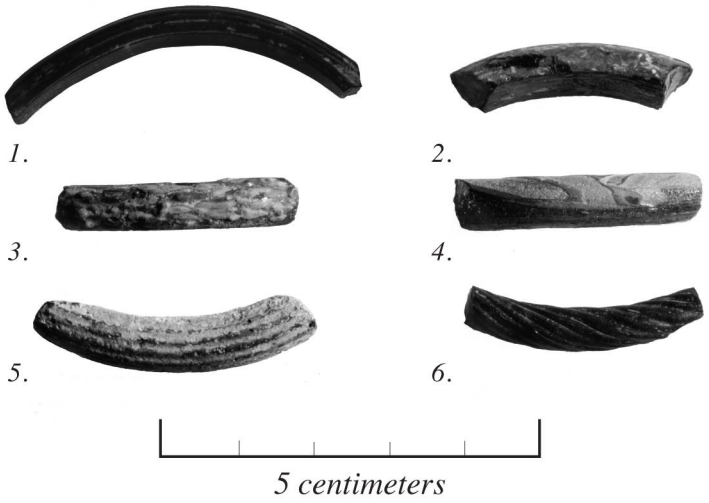


Figure 4.6 Glass bracelets photoshopped into a scaled figure

Other photographs are cropped or labelled, or desaturated for black-and-white publications. Some archaeologists have pushed the medium further. For example, Sara Perry radically remediated photographs taken from archaeological textbooks to "interfere with the typical visual artifact" (Perry 2009). She juxtaposes photographs of Pacific peoples made to stand in for prehistoric settlers with photographs of the archaeologists who use these techniques to "collapse time, space, and change" (392). Andrew Cochrane and Ian Russell experimented with photo montage to depict various antiquities from composite images; each image "subverts and parodies notions of 'truth' in archaeology and the veracity of dominant images in the construction of the past and present, memory, identity, gender, emotion and agency" (Cochrane and Russell 2007:9). Fotis Ifantidis' *Visualizing Neolithic* photography blog regularly features archaeological subjects re-framed or juxtaposed with other photographs. Still, relatively few archaeologists are comfortable with radical remediation of their chosen subjects, though technology allows for easy photo manipulation and enhancement. There is no current policy in academic or professional archaeology regarding the alteration of photographs. While the "death of photography" may have been an overstatement, the death of the belief in photographic verisimilitude may be more accurate.

After the initial panic over the death of the real and the dawning of a "post-photographic era" (Lister 2004:304) there was a rapid shift in theoretical orientation to confront the ubiquity of the photograph in Western life (Rubinstein and Sluis 2008). Rubinstein and Sluis characterize this shift from relatively stand-alone digital photography to the networked image. The networked image, that is, the "merging of photography with the Internet" has changed the production, distribution, consumption, and storage of images (Rubinstein and Sluis 2008:9). Even after the introduction of digital photography and image manipulation to a consumer market, "the promise of immediacy that

digital photography offered was frustrated by unsuitable methods for instant image sharing" (2008:12). The expensive bandwidth and slow modems limited sharing, as did low capacities for email in-boxes—most of the sharing was still done by gathering around the computer screen (ibid). As the internet developed and the ability to share increased, the volume of photographs taken and curated by digital camera owners grew exponentially (13; Van House 2011:128). Though images are not mentioned, this could be taken as another instance of archaeologists "drowning in data" as mentioned in Paul Backhouse's (2006) chapter regarding data management in the context of a British contracting unit, wherein there is the threat of losing good data as we "drown in the sheer volume of the bad" (49). The promise of digital photography in the emancipatory authorship of photographs can be squandered as the quantity of photographs produced in a season has ballooned as more cameras are brought to site by a broader range of people. If a truly democratic vision of the archaeological photographic archive is to be realized, then attending data management issues must also be addressed. The networked photograph—one that is embedded with keywords, hosted online, open to tagging and comment by stakeholders, and licensed under Creative Commons—is a rare thing, but should be a desirable and attainable outcome for archaeological archives. The photographic archive of Dhiban is one example that will be demonstrated below.

Figure 4.7 Lomographic "color splash" photo by Dan Machold.

Finally, as high-quality digital photography became widely available, something strange happened. The instant-feedback available from the LCD screen made it possible for a wider population to become more skilled photographers without the intervening darkroom or photo processing laboratory. Newly confident in their skills, some digital photographers then turned back to the analog cameras that had previously been marginalized. The "lomography" movement (Figure 4.7), named after an inexpensive Russian camera, used cheap, plastic toy cameras to take photographs that "enables the photographer to take rapid, free-form photographs…a reaction against the posed compositions that dominate artistic and, increasingly, domestic photographs" (Hall et al. 2007:229). These posed compositions are seen as offering "resistance to the ways in which the

rules of 'professional photography' repress 'ordinary' creativity and continually redraw the boundaries between amateur and professional" (Burgess 2006:204). These "free-form photographs" resist the precise verisimilitude of digital SLR cameras by embracing light-leaks, yellowed filters and lens flares to achieve a dream-like quality. As a digital echo, several applications for cameras on smartphones were created and released, simulating their lomographic counterparts. The previously mentioned Hipstamatic, an iPhone application, directly cited specific toy cameras, such as the Lomo and Holga cameras as the inspiration for their photo modification settings. Hipstamatic was quickly eclipsed by the application Instagram, which allows the photographer to share the modified photo instantly within a social network.

Figure 4.8 Hipstamatic Photograph taken in Jameel, Qatar by Colleen Morgan

In 2011 I used a combination of Hipstamatic and Instagram for a photography project (Figure 4.8) that queried the relationship of the photograph to the archaeological record. From the project folio:

> Our view of the past is hazy, inaccurate, hard to discern, never quite all there. Yet our record of such uncertainty is becoming dazzlingly clear; professional-quality digital SLR cameras producing high-dynamic range imaging are becoming the norm on archaeological projects and our photographic archives, once highly-curated collections of "scientific," carefully set-up shots have exploded in size and diversified in content accordingly. Along with this extraordinary,high-tech verisimilitude runs a counter-narrative--photography on

> sites performed by students, workmen, professionals, and tourists using their cellphones. These images are too casual, personal, low-rez, and are often unavailable to the official project. They find another life online, emailed to friends and posted on Flickr and Facebook, living beyond the archive and often becoming a much more visible public face than the more official photographs released by the project (Morgan 2011).

This interplay between analog and digital photographies, inspiring innovation and stealing from one another, demonstrates that the digital age is still deeply embroiled with analog values and aesthetics (Lister 2004:318). Perhaps the most important difference between analog and digital photographs in archaeology is Mitchell and Van House's shared point regarding the malleability of the digital image. Beyond the ability to photoshop artifact scales or even alter the position of pyramids is the potential to use digital photography to create panoramic images, 3D reconstructions and textures (or "skins") of archaeological sites. More discussion of this function of digital photography is in Chapter Six, yet it is worth mentioning that these uses of photography are now venturing into what was termed the "post-photographic" by J.T. Mitchell (1992:225). While Mitchell characterized the post-photographic era as an "ineradicable fragility of our ontological distinctions between the imaginary and the real, and the tragic elusiveness of the Cartesian dream" (ibid), this "loss of the real" has instead become a hyperreality wherein the imaginary is intimately linked to reality. The networked image has both decentered the "reality" of the photograph by hosting endless modifications and reproductions of the image while at the same time providing the ability to reference (or trace) the original "real" work. This "real" work is hosted next to the derivations, both de-centering its authority while also providing a citation for the modified images. The post-photographic era is generative, rendering the act of creation of the photograph as something that will be reproduced and modified, instead of creating a single artifact. The placement of digital photography within an "interactive, networked interplay of a larger metamedia" is termed "hyperphotography" by Fred Ritchin (2009:141). Metamedia can be conceived as a media ecology of "larger personal communication that will keep appointments, make calls, take visual notes, check calendars, order from restaurants, find out about sales in neighboring stores, check blood pressure, and tune in to television, radio and personal playlists" (Richin 2009:145). It is within this media ecology that we must understand archaeological photography, not simply as a separate methodology, but as part of a network of personal and professional digital practice.

Conclusions

Understanding the shift from analog to digital photography in the larger theoretical context of visual and new media studies allows us to meaningfully situate archaeological photography as part of an interpretive mixed media ecology. The digital photographs that we produce during archaeological research do not stand alone; they accompany paper site records including context sheets, registers, drawings, and Harris Matrices as well as digital video, 3D reconstructions, and online dissemination strategies. Appreciating a theory-laden practice is not enough; we must transform these practices with emancipatory strategies to adhere to a more inclusive and multivocal vision of archaeological *praxis*. The four points mentioned in Chapter Three that form the template on how to "do" emancipatory digital archaeology provide a structure to build and elaborate upon when regarding archaeological photography. Our template asks for the context of the digital object, to consider multivocality and authorship, and to evaluate the openness of the object. Each point is permeable, and each borrows from the other. This structure consciously eschews the strict birth-to-death narrative of a formalized object biography. Keeping this in mind, we return to Tell Dhiban, and the teapot full of boiling hot green coffee.

Figure 4.9 Tall Dhiban teapot

Context

Sometime during the tedium that comes with laboring as a workman at an archaeological site, two workmen gathered a few twigs together and started a fire. That they were lighting a fire on a large archaeological site did not matter much to them—they both lived in the village with the same name as the tell, Dhiban, and many people used the tell as a picnic spot on the weekends. The relationship between the archaeological site on the tell and the village is complex; Neil Silberman's (1982) fantastic account of the discovery of the Moabite Stone at Dhiban, Jordan in 1868 provides a verisimiliar genesis narrative for this complexity. I have created a comic version of these events (Figure 4.10) which simplifies this history considerably.

Figure 4.10 A simplified version of events surrounding the Moabite Stone.

Even without performing a historiographical analysis of this familiar narrative—the important treasure, the greedy bureaucrats, the adventurous and ambitious Westerners, and the crafty yet ignorant and destructive native—the elements of this divisive origin story have persisted to characterize the interactions between the government, local people, and Western researchers. After the Mesha stele incident, archaeologists periodically visited the site, "registering with equal regularity their disappointment at its lack of potential" (Routledge 2004:161) Eventually, Professors Winnett, Reed, Tushingham, and Morton excavated at Dhiban between 1950 and 1956 (Winnett and Reed 1964). Though the original records for the excavations were lost (Winnett and Reed 1964:iii) and most of work from the 1950s remains unpublished, the excavations "aroused so many hopes and expectations" as it was expected that the site was that of "biblical Dibon, which was the capital of the kingdom of Moab for most of its history" (Ross 1969:169). They were led to this conclusion by the location of the site, "20km east of the Dead Sea and 64km south of Amman…flanked on the north and south by two tremendous canyons"; the name of the "modern village of Dhiban whose Arabic name preserves in only slightly altered form the ancient Moabite and Hebrew name Dibon" and the recovery of the aforementioned Mesha stele which includes the line 'I made *this* the high-place for Chemosh in Qrhh' (Winnett and Reed 1964:5-6). Excavations by Morton at the acropolis seemed to support this, revealing what he termed "Mesha's Palace" though this is not supported by secure chronological evidence (Porter et. al 2007:318).

Current archaeological research at Dhiban is conducted by a joint team of directors: Bruce Routledge (University of Liverpool), Benjamin Porter (University of California), Danielle Steen (Knox College), Katie Adelsberger (Knox College). After a brief season in 2005, work was on hiatus until 2009, when I joined the team as an excavator and photographer. While I had worked in Turkey at Catalhoyuk for several years prior, it was my first time in Jordan and the directors chose to house the excavation team in the small town. Housing the team in the town of Dhiban had deep implications regarding our behavior; *in lieu* of excavation procedures the 2009 Dhiban Field Manual contains exhortations to "fit in", listing a specific "modest dress code" and forbidding the team members from drinking alcohol while in Dhiban (Porter, et al. 2009). This latter point became the topic of an article regarding "dry digs" in the *Archaeological Record* (Porter 2010). He characterizes the decision to prohibit drinking as one made by the team at large, when in reality it was a couple of directors who, while getting "more serious about community archaeology, ethnography, and economic development" decided to prohibit alcohol ostensibly for the entire excavation, but would drink after the rest of the team left. The work on site progressed apace, but living conditions offsite made the project extremely taxing and several of the team members became ill.

The complimentary tells of Dhiban reveal two very different stories. The archaeological site contains proud Nabatean blocks and an Iron Age palace, whereas across the small depression between the tells the modern town of Dhiban is economically devastated. The trade and nobility that brought fine ceramics to ancient Dibon do not have a current equivalent. While reviewing the current socio-economic status of Jordan is outside the scope of this dissertation, the poverty and conservatism of Dhiban is important to foreground for discussions of digital contextuality. The town offers little for the young men who loiter on the streets; while many Jordanians enter college and get advanced degrees, there are limited employment opportunities for them. The men who work on site during the archaeological season are both older, minimally-educated farmers and young men out of secondary school or college. The town is rural; while some of the local people have office jobs, many of the population of 15,000 make their living from farming or herding goats (Porter et al. 2009).

Entreaties to "fit in" aside, the excavation team was constantly harassed by the locals on the street, particularly the women on the team; no amount of discreet dressing or walking in pairs stopped rocks from being thrown or come-ons from local youth. Being up on the opposite tell was a relief from living in the small, rural town; only a few goatherds and our trusted workmen accompanied us while we were on site. Still, the relationship we had with our workmen was complex—most of them did not speak English and most of the archaeological team did not speak Arabic. The workmen were primarily older men who had lived and worked in the area for most of their lives, while the archaeology team was young and foreign; as a younger woman directing older men within a landscape that was more home to them, I negotiated the difficulties in customs and language as best as I could. It is a truism in the Middle East that white women are to be treated as men by Muslims, though in truth we inhabit a third gender, an ambiguous pastiche of impressions gleaned from foreign media, personal experience, true curiosity and a profitability assessment. While we could negotiate this ambiguity on an individual basis, or in small groups, our status as outsiders made us extremely vulnerable to harassment and insulting encounters outside of the confines of the accommodations and the tell. Many female archaeologists are loath to discuss this aspect of working in the Middle East; we are expected to "fit in" and not complain so that we will be viewed as equal to male archaeologists. Complaining about ill treatment would jeopardize our standing as equals to male archaeologists. Not "fitting in" bears a stigma; if you are harassed then it is seen as a failure as an anthropologist to successfully negotiate your surroundings, and this has a serious chilling effect for women working on archaeological projects. In 2011, journalist Lara Logan was attacked while covering the Egyptian revolution in Tahrir square, but she spoke out regarding her sexual assault, and in doing so highlighted the embodied violence that both western and local women are threatened with on a daily basis. Working in much of the Middle East is a tacit acceptance of treatment that would not be acceptable in the United States; submitting to this treatment in hopes to "fit in" and remain silent and professional is part and parcel of this arrangement. Working in the Middle East is a constant negotiation of gendered terms, re-positioning our identities as professionals and respectable women in a context that has absolutely determined that we are neither of the above.

To fully articulate the position of the photograph within rural society in Jordan is outside of the purview of this chapter, but it is important to sketch a basic outline of the place of photography among the inhabitants of Dhiban. While there are strong iconoclastic tendencies in the dominant religion, Islam, photography is still an important element of positioning self and social position in Jordan and other Middle Eastern countries. During his ethnographic fieldwork in Jordan, Andrew Shryock was presented with

> "a striking photo, sepia-toned and enlarged several times to accommodate its gold, rococo frame The subjects were three young Bedouin seated before a stone edifice, armed with swords, daggers, and pistols. Each was attired in flowering cloaks; one wore a pair of fine leather boots. Their head scarves were held in place by unusually thick camel-hair braids, and they were affecting the sullen, "dangerous" look that Bedouin admire" (1997:292).

Shryock is informed that the three young Bedouin were "famous shaykhs of the Nimr, which is our clan" (ibid). Shryock later learns that these photographs are available for sale at photo studios and that many 'Adwani bedouin claimed that the men in the photographs were their ancestors. Further, "buying the pictures and hanging them on the walls of one's own home turned out to be the most decisive means by which a person could gain control over what was considered, by everyone involved, a kind of documentary evidence" Shryock 1997:296). These photographs are

arranged prominently on a wall, which Shryock terms a "gallery" (298). These galleries are comprised of the same elements that Shryock found in 'Adwani homes, "the Qur'an (emblem of eternity, sacred truth, and the authority of God); the clock or calendar (marker of humanity's passage through profane, earthly time); the king (master of secular time and steward of God's authority on earth); and the ancestor (link to a tribal era)" (ibid). The same photo studios where one can buy copies of old photographs and photographs of the king are used to take formal portraits of family members. The representation of *turath* or heritage is displayed in a combination of photographs and objects in the home gallery, and while fictive ancestors and kings relay a sense of the past, there is not the same sense of connection with the ruins that are right next door. While "Petra and Jerash are attractive destinations for them, Middle Eastern travelers exhibit more interest in Islamic antiquity sites—castles, battlefields, baths, mosques, and saints' tombs" (Jacobs and Porter 2009:76).

Analog photography still has a prominent function in Bedouin life in the form of these galleries. Digital photography occupies the space on cellphones and computer screens and is increasingly present in the daily lives of Jordanians; yet some elements such as the "sullen, 'dangerous' look" persists. As Shryock notes,

> "cameras were meant to preserve images of propriety, solemnity, and power. They balked at my attempts to take casual, unposed shots. They insisted on wearing their best clothes, donning a pair of 'scholarly' glasses (sometimes my own), or placing a service of tea or a coffee thermos in front of them as a sign of hospitality. Only in recent years have people begun to smile at the camera, and many of the older men still meet the lens with an imperious scowl. Photographic representation is, for them, a context in which individuals should present their noblest, most public face" (296)

Figure 4.11 Portrait of Zaid

Figure 4.12 Portrait of Mohammad

These differing modes of self-representation can be seen in the on-site photography taken during the 2009-2010 field seasons of the Dhiban Excavation and Development Project, and evoke Berger's analysis of August Sander's photographs. He states that his sitters "each look at the camera with the same expression in their eyes…in a way that their vanity and shyness dropped away, so that they looked into the lens telling themselves, using a strange historical tense: *I looked like this*" (1991:31). This "historical tense" or presenting their "noblest, most public face" reveals a formal relationship with photography, and an impersonal relationship with the photographer. In this way site photography can reveal relationships with various stakeholders on site, whether they are students, workmen, or visitors. Describing their social, semiotic approach to the analysis of visual material, Carey Jewitt and Rumiko Oyama emphasize the importance of the point of view or azimuth of the photograph (looking up or down on the subject), the level of engagement with the photographer (eye contact), and the distance between the photographer and the subject as key components in bringing out "hidden messages" in the materials (2001).

The context of the digital photograph of the teapot is obviously multiple; by disentangling the relationship of photography with regard to rural Jordanians, archaeology, and the Dhiban Excavation and Heritage Project I demonstrate that even digital photographs relate to the physical context that they are performed and interacted within. In acknowledging the many contexts that the photograph occupies I have deliberately focused on the place it was taken and the history of archaeology in the region. "There are two contexts that yield meanings inferred about photographs. One is the context in which photographs are made; the other is the context in which they are

viewed" (Templin, 1982:138.) The digital context, that of the dissemination strategy and the viewed context for the digital photography taken during the project and the photograph's multiple presences, will be discussed more in-depth below.

Multivocality

After I took the photograph of the teapot, I turned the camera around, shading it with one hand against the sun and men leaned close to take a look. They nodded their approval and I took the camera back. This had become a familiar ritual; a few photos snapped, then the camera is turned around for the subject of the photograph to voice their approval. As previously mentioned, this is one of the affordances of digital photography—an LCD screen "allows the photographer to instantly share the results with the photographed subject, there is room for negotiation: the subject's evaluation of his or her self-image may influence the next posture" (van Dijck 2008:66). This negotiated encounter opens up the opportunity for the subject of the photograph to approve or disapprove of the photograph, terms that were not considered in analog photography. Indeed the act of photography becomes a venue of communication between people, particularly when there is a language barrier as there was between the workmen and me at Dhiban. This act also became a nexus of differential access to technology and cultural customs regarding photography along axes of nationality, age, and gender. As I previously mentioned, some of the older workmen did not want to have their photo taken at all. Younger men did not like having their photo taken while they were working, but desired posed photos, together with their cohort of younger men or with the female students on the excavation.

As previously noted, photographs can also yield meanings in the context in which they are viewed and this can also be a site of multivocality. Schneider's (2007) use of photographs originally taken as part of an unequal power relationship between the researcher and Native American subject to create a dialogue regarding ancestral lands is one example where multivocality, while absent in the initial formal sitting, could emerge through thoughtful research and discussion. There were two post-production sites of multivocality for the photography of the Dhiban Excavation and Development Project. The first was the internet; the photographs taken during the 2009 season were uploaded to Flickr both during the excavation and during post-excavation work. While it would have been ideal to upload all of the photographs concurrently with the excavation, the only access to the internet in Dhiban was the internet cafe, which had slow, virus-laden computers. I uploaded a few that I felt illustrated the work on the project and these were accessed and downloaded by residents in town. During this initial season, the official site photography was interspersed with my personal photography and touristy shots of Jordan's archaeological sites. Sadly, while the residents of Dhiban downloaded the images, they did not choose to interact with the photographs online, but I would hear their comments in person. Students on the excavation also did not comment directly on the photographs, but used them to enact their newfound archaeological personalities on social networking websites, primarily Facebook. This was also true of the workmen on site, the younger men found us online and "friended" us, often posting commentary on our Facebook walls, or commenting on photographs that were on the site. Using these cellphone photos to reposition themselves not as manual laborers on an archaeological project but as the friends of attractive young Western women allowed them to gain social currency perhaps *in lieu* of monetary compensation. Other than the Dhiban photo show (as the second site of post-production multivocality to be discussed below), this was the primary locus of post-production dialogue of site photographs. In addition to my "official" site photography, there were hundreds of photographs taken by the student

participants and the workmen. These photographs were on equal footing on Facebook, de-centering the official narrative of the Dhiban Excavation and Development Project photography.

The photographs taken during the Dhiban Excavation and Development Project during the 2009 season were primarily authored by the students and professors on the project. While cellphone photographs taken by the workmen exist, we did not have access to them, which was an oversight. In 2010, one of the students, Brenna DeGanne, loaned her camera to a very young relative of our local collaborator, Firas. The young boy was fascinated by the camera and took many photographs of himself, his relatives, and the team, mostly during our evening pottery-washing. These photographs were not separated from Brenna's other photography, and remain as part of the Facebook archive. Also in 2010, a photography student, Evan Temchin, took the bulk of the on-site photography. He was not an archaeology student and his photographs are not generally available, as they were not uploaded to the Flickr stream. While I made an attempt to bring a more cohesive, multivocal photo archive into fruition, much more could have been done.

Authorship

While I shared and discussed the photograph of the teapot shortly after the moment of creation with the two workmen present, incontrovertibly I am the person who framed and shot the image, and it was my DSLR and later my computer that held the image. I took the photograph based on my training and experiences in media-making, manipulated the image to better suit my sensibilities, and then used the image to forward my own projects and research. In this, digital photography is not different from analog photography; the same initial issues of ownership, reflexivity, and differential access to technology remain intact. The question of authorship in both analog and digital photography is deeply rooted in meaning-making in visual media, a topic that is far too vast for this dissertation, though a brief discussion of how digital images are authored in Dhiban is productive in identifying asymmetry in access to technological authorship. To further tease out the differences in authorship between analog and digital photography in archaeology we must examine the details of the re-use and remediation of images, particularly the digital lineages of photographs and the de-centering and re-centering of authorship in view of indigenous media production.

One of the unforeseen affordances of digital photography has been the ability to forge a digital social identity that would seem incongruous to analog social peers. Yet this "making, showing, viewing and talking about images are not just how we represent ourselves, but contribute to the ways that we enact ourselves, individually and collectively, and reproduce social formations and norms" (Van House 2011:131). The way we are representing ourselves as archaeologists in digital photographs and online may indeed be changing the practice of archaeology, yet archaeological site photography is still a hybrid, crossing the boundaries between a scientific report and a snapshot, both personal and public. We photograph each other working as well as the results of our labor to create a complete archive of the archaeological process. Still, as digital cameras and cellphone cameras have become ubiquitous, many photographs are taken on site that are outside of the archaeological archive and I have argued that these casual photographs tell a parallel story of archaeological research, one that is increasingly coming to light as the unofficial site archive is uploaded to social networking sites.

At marriage ceremonies in Dhiban the young women take cellphone photographs of each other out of their veils, with the implicit promise not to share them with men outside of their family

(see also Jacobs 2008). As outsiders to the community, the women of the Dhiban Excavation and Heritage Development Project were invited to wedding parties and we were often asked to pose with the Jordanian women. We were discouraged from bringing cameras and taking our own photographs, as it was clear that we were outsiders who would not necessarily respect the wishes of the women to remain veiled to men outside of their family group. The cellphone was the digital photography tool of choice and after the Western team members trained their cameras on the local workmen, often the younger men would take their own photograph of the posed moment. In this sense it was a social leveling device; while we could take photographs of workmen and use them to our own designs, they could take photographs of us. Indeed we had to demand that one of the men stop taking photographs of the undergraduate women bending over and unintentionally exposing themselves to scrutiny, even though they were dressed modestly in accordance with the project dress code. Keeping the wishes of the older men in mind, I would usually ask before taking a photograph. In the modern town of Dhiban this would be a quick "sura, mumkin?" or "photo possible?" but when children saw that I had a large DSLR, they would ask to have their photo taken, and then demand to see the LCD screen to verify that the photograph depicted them as they wanted to be seen. Distributing media-creation technology more widely during the field season and examining the resulting images is the next step in this progression; indeed a holistic media-making project modeled after PhotoVoice and centering on an archaeological investigation would be an avenue for future research (Wang 2006).

Openness

The particular case of archaeological photography at Dhiban reveals the complexities and the tensions present in documenting and presenting archaeological practice, yet there is still further elaboration on this point, another node in the network of meaning surrounding our teapot photograph. During the summer of 2009 season we intended to create a photo show for the people of Dhiban to better show what we were doing on site. While there have certainly been many photo shows associated with archaeological projects, two deserve particular mention here, as they serve as good comparisons for our photo show in Dhiban and summaries of the shows have been published in peer-reviewed literature. A brief mention of plans of a community-based photography display as part of outreach at Quseir (Moser et al 2002) yet an update regarding the project ten years later only mentions an online archive (Tully 2009). A more in-depth discussion of a photography display comes from Yannis Hamilakis, Aris Anagnostopoulos, and Fotis Ifantidis (2009) as part of an archaeological ethnography on the island of Poros, Greece. With the arrival of Fotis Ifantidis, a prominent archaeology photo-blogger on site, photography became an important part of the project, taking "a large number of photographs of the site, of the visitors, of the workmen and the archaeologists, of the town and its people, of the surrounding landscape and seascape" (Hamilakis et. al. 2009:291). The project focused on portraits of the workmen as a "way of honouring and valorizing their contribution to the archaeological process" (ibid), printing copies of the photographs and exhibiting the images at an open-air photographic exhibition at Galatas (292). Feedback from the workmen and the community was primarily positive, but the act of photography was a contested practice; while the workmen were happy to take photographs and videos of each other on their cellphones, they became wary when their images were taken by the ethnographic team (ibid). This is similar to what I experienced at Dhiban, the intimacy of photography opening up a critical, dialogic space between the archaeological team, workmen, and local stakeholders (284).

Between excavating on site and documenting the excavation I was not able to organize the Dhiban photography show in time for the 2009 season, but I made it a main objective for the 2010

season. After the 2009 season we uploaded the archive online to Flickr, but with very few local residents visiting the site and limited access to the internet we felt that a photo show would bring the project closer to the community, contributing a more permanent relationship than our usual yearly visits would allow. I met with our local advisor, Firas al-Kawamlha who had been working with the project since its inception and was included as a co-author on an early publication (Porter et al. 2007). He suggested that we host the photo show in the town hall, a building that was used for meetings and weddings by the local community. I asked the permission of the mayor of Dhiban who seemed excited at the prospect of the photo show. When I finally secured the keys to the town hall I was surprised by the size of the room—enormous; I was a bit intimidated by the 2m tall portraits of the current and previous kings on the back wall. It was the larger, community version of the diwwan and I was redecorating this space with photographs of archaeology. The selection, printing, and framing of the photographs was also fraught with difficulty, and we finally narrowed down the number of photographs to be exhibited to 24, showing a range of life, activity, and archaeology associated with Dhiban. I was collaborating with Even Temchin, an undergraduate student who had been brought into the project to train as an archaeological photographer. As he was male he could act as my chaperone on the street in Dhiban, and we would walk the streets and ask to take photographs of local people. We were thus able to integrate shots from the two tells of Dhiban, acting as a dialog between the project and the local people. We selected photographs to this purpose, but my notes during the organization of the show reveal some of the unease I was experiencing during organizing the photo show:

How well will the photographs of the archaeology mix with in-town photographs? Will I actually be able to get a photo of an older lady? The omission of women in the show is troubling. Am I adding to their erasure?

How is this forwarding archaeology? Community archaeology? In many places it is an honor or at least an interesting thing to work on an archaeological site, here it is just a way to make money and has a much lower status than working in an office. Will representing the community shots next to the archaeology tie these representations together? Make them aware of this investment in their community? Should there be any photos of us at all? Or are there some representative shots of us working together? Is this propaganda?

While we had notified the mayor and a few other members of the community, we decided to print a poster for the show, choosing a familiar image:

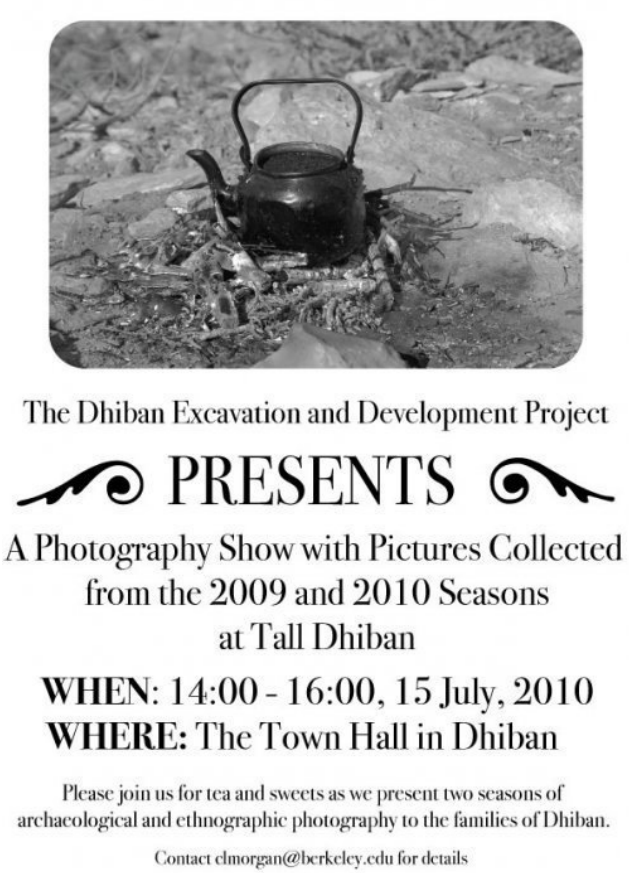


Figure 4.13 Poster for the Dhiban Photography Show

The image was simple and graphic and the teapot is a symbol of hospitality in Jordan. Sadly our translator did not have time to translate the poster into Arabic and as very few members of the community in Dhiban could speak or read English, we had to verbally spread the word about the photo show. UC Merced graduate student Claudia Liuzza was conducting ethnographic research in the region and invited local residents to the photo show. As the photo show was also a hospitality gesture, we also provided tea, sweets, and postcards that we made out of the photographs on display. The entire team helped serve tea and spoke with the visitors. The teapot photograph was near the sweets and the tea, featuring prominently as guests entered the room. The stage was set. What could we expect?

Figure 4.13 The Mayor and former Mayor of Dhiban with Dhiban Excavation team members

Guests began to filter in at 14:00 and it became clear very quickly that this was the upper class of Dhiban; the mayor arrived, along with the former mayor and Bruce Routledge, Katie Adelsberger and Danielle Steen posed for photographs with the important people of the village. Interestingly, they chose to pose in front of the photo-montage of the past and current Kings of Jordan instead of the photos from the photography show, perhaps showing respect or authority as leaders of their respective communities. Many of our workmen came to the photography show as well, posing in front of the framed photographs of themselves on the wall.

Figure 4.14 Posting with a photograph of themselves.

Concurrently we had a projector showing a slideshow of all of the photographs that were taken during the project, to provide a broader context to the few photographs on the walls. This proved to be the most popular aspect of the show, as many of the photographs were not as artfully posed, yet showed a broader range of activity and were perhaps more fun to watch.

Figure 4.15 Community members and excavation team members watching the slide show.

The photography show was not as well attended as I would have liked; whether that was because it was during the hottest part of the day or because people were working, or simply because it was an activity that is not integrated into daily life, it is difficult to say. Ideally we would have also had a women-only day, when it would be appropriate for women to come; as it was the women were vastly underrepresented at the show. The exact details of the numbers and the constitutive elements of the show were documented by Claudia Liuzza, who was performing an ethnography of the archaeology and community in Dhiban during the time of the show, but unfortunately she has not made that data available. We decided to leave the photographs in place so that more community members could see the photo show as they would use the town hall for other meetings and celebrations, but we were warned that they may get taken down at any time. As of 2012, two years later, I am not sure if the photographs are still hanging up, as the town hall was inaccessible during the 2011 season.

Ultimately, it is difficult to tell if the photography show fostered any solidarity with the community or connection with the archaeological site. Most archaeological field schools in Jordan were cancelled after political unrest in 2011, including the Dhiban Excavation and Heritage Project, though Benjamin Porter and Alan Farahani did go to Dhiban to meet with the community in 2011. In 2010 the team witnessed a family feud that erupted into a riot in the early hours of the morning. Since 2010, Dhiban has seen both political strife, with the murder of a police officer and more violence in the community. There was a large field school in 2012, yet the majority of the team did not live in Dhiban, but in Madaba, a community 30km away that is more accustomed to Western visitors. With a rural, marginalized community that has deep economic and political rifts, it is

difficult to imagine that there would be much interest in the archaeological heritage besides that which can mend the financial problems of Dhiban. More skill-based learning would be beneficial to further community outreach; teaching classes in the community that cover a wider range of topics such as how to use computer programs to manipulate digital images or database software would be perhaps a more emancipatory method for digital archaeology.

In addition to the photo show, and similar to the other photography-based community outreach projects in Quseir and Poros, the Dhiban Excavation and Development Project hosted an online archive of all of the photographs from the 2009 season. We (Benjamin Porter and myself) had decided to host the entire photographic archive on Flickr under a Creative Commons Non-Profit, Share-Alike License to both increase the visibility of the Dhiban Excavation and Heritage Development Project and to ensure that they were widely accessible on the internet. We added a minimum amount of tagging, including *Dhiban* in Arabic and the names of the subjects in the photograph. I also hosted the photograph in my personal account, as I have a broader audience due to my long-term participation in archaeological blogging and social media. For example, while there are at least a dozen digital copies of the teapot photograph on different hard drives and archives, any number of the 155 of people who have accessed the photograph since I uploaded them may have downloaded the photograph and may have even used it; this causality is explicitly allowed and even endorsed by our decision to assign a Creative Commons copyright to the photograph. Internet access was limited in Dhiban, yet one resident stated that he had "downloaded every photo" (Fatkin et al 2011). Sadly the account associated with the Dhiban Excavation and Development Project has lapsed from a "Pro" account to a free account, meaning that the original sizes of the photographs are not available for download and that a limited number of photographs are now available. Hopefully as the project continues the value of openness will be realized and funded in the future.

Figure 4.16 Colleen Morgan, pouring the Mayor of Dhiban a glass of water.

The photograph of the teapot is a nexus of meaning, drawing together the past and present of archaeological photography, the twin tells of Dhiban, and a future for emancipatory, digital practice in archaeology. In performing this close reading of a single photograph, chosen from several hundred taken during the 2009 season, I have demonstrated the transitions and affordances that have come through the widespread adoption of digital photography in archaeology, showing the complexity that comes with this new technology, and the mostly unrealized potential to use digital photography as a mechanism for an emancipatory archaeology. Finally, I have attempted to show that digital archaeology is not about megapixel count or expensive lenses, but creating a space for us to enhance our ability to understand the past and to share that past with others, as co-creatively as possible.

> The teapot is a ubiquitous symbol of hospitality in Jordan, but I was still surprised when the former mayor of Dhiban asked for a copy of the framed photograph for his diwwan. The bedouin diwwan traditionally holds photographs of the current and future kings, apocryphal ancestors, and colorized photographs of eligible sons. I wondered if he was just being polite, but I agreed, of course I would find another frame and get another print made and get it to him, after all, it was only the last few days of the excavation. After long weeks of negotiating the truly Byzantine complexities that accompanied setting up the photo show, I was exhausted, but happy, feeling accomplished. We'd just pulled off what had seemed impossible at times--an undeniable feat of community outreach.
>
> I got behind the wheel of one of the project rental cars to drive back to the women's quarters across town. As the now-familiar dusty cinderblock buildings of Dhiban went by I couldn't help thinking about all the multiple

places the teapot photograph existed--online, in the archive, on a black and white poster, in a photo show, and now on the wall of a former mayor's house. I wondered what he'd tell his visitors about the teapot, about the crazy ajnabiya and her photo show, or if it would go unmentioned, another familiar and understood trope of modern bedouin identity. I wondered...SMACK! A large, dark object hit the center of my windshield and slid down. My heart galloped into action, afraid that I had hit something...but then I saw what it was--a large shoe, thrown in disrespect. I got out of the car, threw the shoe into a pile of garbage on the side of the road, and drove off, feeling a bit less sure about my earlier triumph in community archaeology.

Chapter Five: *Nevriye Çatalhöyük'te kazı yapıyor*

Figure 5.1 Filming Nevriye excavating

I couldn't really say much besides *Merhaba* (hello) to Nevriye when her head popped over the side of the trench. Much to my shame, I did not learn very much Turkish over the course of the five years that I worked at Çatalhöyük; the excavation was primarily English-speaking except for the guards, workmen on site, and the kitchen staff. Nevriye was a member of the kitchen staff, she and a few other local women would cook our three meals, do our laundry and clean the dig house. Though my communication with the non-English speaking Turks was limited, I tried to connect with them, if only with a smile. Nevriye always had an answering smile and her brusque, outgoing personality belied her position on site as a kitchen worker. She was a friendly, familiar face, but I was still surprised to see her away from the dig house, up on the tell, though she was an important stakeholder as an active member of the project and a member of the local community. Nevriye came from the small village of Küçükköy and relied on seasonal employment at Çatalhöyük to supplement her family's income. She was familiar with the site and the landscape beyond the ken of a foreign excavator who spent only six weeks out of the year at Çatalhöyük.

Nevriye swung a leg into the trench, her loose trousers and sandals no impediment in climbing down into Building 49, the mudbrick house that Daniel Eddisford, Louise Felding, and I were excavating. She examined the newly revealed paintings along a platform in the north side of the building, a series of black, lattice-like lines that seemed to form figures. After looking at the mural

she decided that she wanted to help excavate; she took a trowel and began to work where Louise had been removing a layer of platform makeup in the northeast corner of the building. Louise guided her, but Nevriye was proficient with the trowel, much more so than the undergraduate university students that we trained on site. As part of my ongoing research in integrating digital recording into regular site excavation I had a small video camera on site and had the presence of mind to take it out of the case to use it to record this interaction, as it was unusual for site participants to perform outside of their given roles. Nevriye chatted with the rest of the kitchen staff who had also come on site. One of the bi-lingual Turks, conservator Dugyu Camurcuoglou came to the side of the trench to chat and to help translate between the Turkish and English speakers. Nevriye excavated for a few minutes, expertly removed all of the spoil she created, then stood up, thanked us, and stepped out of the trench. I stopped recording, as the moment was over, and we continued to work.

Video recording at Çatalhöyük

Video recording was a well-established practice at Çatalhöyük by the time I joined the project. Since 1995, video documentation recorded "the daily evolution of the dig as well as the accompanying processes of interpretation and decision-making" (Brill 2000:229). The Karlsruhe videography team and the subsequent videographers from the Science Museum of Minnesota were trained in filmmaking but not in archaeological excavation (Brill 2000; also Tringham et al. 2012). Included in the videographic record is "group discussion in trenches, individual accounts of excavation progress and laboratory work" (Hodder 1997). This record is then "digitized, edited into short clips and stored on the database with attached key-words". Indeed, Hodder places video recording as "central to our methodology", allowing a "full hermeneutic process" (1995). In this way Hodder incorporated video recording into his developing methodology that was intended to be the set-piece of post-processual archaeology as performed at Çatalhöyük. The medium of video was seen as advantageous and "less dominated by handed-down scientific codes" as video allows "the immediate combination of image and text and more so the level of spontaneity and the strengthened individual expression in spoken, over written language" (Brill 2000:230). Sadly the video database that was promised as part of the methodology at Çatalhöyük was never completed. The early videos are available on a CDROM that came with one of the excavation volumes and there are a few later phase videos online, but most of the rest of the video archive languishes in tapes and on hard drives.

The Berkeley Archaeology at Çatalhöyük (BACH) team also incorporated video-recording into their excavation methodology, eventually developing a rigorous methodology for documenting the video clips (Tringham and Ashley 2012). During the seven years that the BACH team was active on site, they recorded 75 hours of footage, moving from analog tape to digital media. These videos acted as an "important part of the formal description of the features during their excavation; they include daily diaries, weekly syntheses for the entire team, detailed recording of specific features for later referral by the archaeologists, as well as discussions with specialists" (Tringham et al 2012; Ashley-Lopez 2002; Stevanovic 2000). The bulk of video recording was performed by Jason Quinlan and Michael Ashley, two members of the BACH team that had archaeological training but were primarily media experts. Some recording was performed by other team members, including project director Ruth Tringham, and the footage expanded from on-site recording of excavation "for archaeologists by archaeologists" (40) to more atmospheric and contextual recording of "informal gatherings (Thursday night parties), opportunistic events (visits by archaeologists, journalists, and tourists), discussions with excavators and lab specialists, and a variety of casual moments specifically shot to capture the ambience of the excavation at different times of day" (41).

After the BACH team left Çatalhöyük, videography was deemphasized during regular excavation. Jason Quinlan was retained by the main Çatalhöyük research team to continue media production on site, but his responsibilities quickly expanded beyond the ability of a single person and he was not present on site for the majority of the excavation day. Still, the "phase" and "priority" videos Quinlan produced for the 2004-2008 seasons refined the genre of archaeological phase videos, interpolating videos of excavators explaining various features in the trench with close-ups of the feature in question. Further discussion of these genres of archaeological videography will continue below. While there was an absence of formalized videography of the excavation process, there were still occasional interviews conducted with archaeologists, ambient filming by the artist Eva Bosch, among others, and emplaced video by excavators Carlos Bazua, Anies Hassan and myself. These latter videos are extra-archival, though through their placement online and social media have garnered their own audience and place in the broader conversation about videography at Çatalhöyük.

Notions of videography have only recently come to archaeological practice; while there have been several analyses regarding archaeology's relationship *with* the media, there have been relatively few explorations of media *made* by archaeologists, particularly that of videography (Clack and Brittain 2007:46). This distinction, of "professional filmmakers who knew little about the process of archaeological investigation" and "students trained in archaeology…on occasion the field directors Ruth Tringham and Mirjana Stevanovic" (Tringham et al 2012:39-41) is not necessarily a rigid divide (see also Earl 2005); the problem of professional vision (Goodwin 1994), the ability to "see" archaeology and make evaluative judgements regarding the correct way to conduct and depict excavation, is a process that is, particularly in the case of a complicated tell site such as Çatalhöyük, difficult to quantify and present through videography, whether or not the person behind the camera is an archaeologist or a filmmaker. Further, while digital video recorders are increasingly "affordable and accessible" (Van Dyke 2006), specializing in digital media in archaeology arguably removes the archaeologist from excavation and from developing advanced field skills. The development of a "specialty" within archaeology that is lab-based rather than excavation-based, such as paleoethnobotany or micromorphology, requires the archaeologist to acquire skills outside of excavation. While acquiring a diverse skill-set in addition to archaeological field skills is increasingly emphasized in post-graduate education and is vital for furthering archaeological understanding, often the specialism is emphasized to the detriment of field skills. This seems to be more acutely felt by archaeologists who specialize in digital and visual media as their work is not perceived as "real archaeology" (Perry 2012). Expertise in both excavation and digital archaeology is exceedingly rare, though an "unprofessional" video made by an archaeologist can speak to the current, low-fidelity, DIY aesthetic that is pervasive in online social media. Indeed, an unpolished video with minor editing can be seen as a more authentic voice of a non-professional filmmaker; as Hanson and Rahtz state, "A professional production is not always necessary or desirable…the Magnus Magnusson commentary for English Heritage's film of Maiden Castle is perhaps less evocative of real archaeology than 'punk video' shot by an archaeologist on domestic format with a wave-about camera" (1988:111).

A short history of archaeology on film

The history of archaeological film and its social context deserves a much more thorough treatment than I can permit in this dissertation; indeed the early relics of archaeological film—grainy film, washed out horizons, forgotten field hands—held me in such a thrall that it was difficult to

stop watching old films and start writing again. Though there are undoubtedly earlier films hidden away in archives, among the earliest known footage of an archaeological excavation is documentation of Dorothy Garrod's Mt. Carmel 1931-1933 seasons in the Peabody Museum film archives at Harvard University (Beale and Healy 1975). A snippet of this film was posted by the Pitt Rivers Museum to the social media video hosting service Vimeo[1] shows a faded, grainy, scene of indigenous workers hauling large buckets up a long ladder with impossibly unsafe working conditions; any details of the archaeology is lost to the impermanence of celluloid film. A few clips of Louis Leakey's 1931 expedition to Olduvai gorge was also preserved in the 1974 film *Search for Fossil Man*, along with other reused footage from Chinese and Near Eastern sites. Early examples of archaeological film tended to "record on film a wide variety of dig life without any overall planning or purpose other than to show in a general way what life on a dig was like" (890). Archaeological news was regularly reported on early German newsreels, though their archaeological films during the 1930s and 1940s were heavily influenced by National Socialism (Stern 2007:203). The 1937 *Shell Mounds in the Tennessee Valley* produced by the Tennessee Valley Authority became one of the first widely distributed New World archaeological films, and the first to feature a sound track.

The complexity and variety of archaeological films continued to develop, and in 1944 the Ministry of Education commissioned Jacquetta Hawkes for an "unorthodox project"—the creation of a film on British prehistory (Hawkes 1946). The remarkable history of this wartime film is documented in part by Christine Finn, who notes the prevalence of the narrative of invasion as well as technological innovations such as the use of aerial shots (2000). The film featured full reconstructions of structures as well as animated sequences, and in its aforementioned use of aerial photography is perhaps prescient in the current use of "fly-throughs" in virtual 3D reconstructions as the viewers are treated to a propulsive, forceful camera, full of movement, as the lens "slides down the walls of Cheddar Gorge and penetrates its caves to find the home of palaeolithic man, it twists along a Skara Brae alley-way and ranges across one of the houses, it explores every corner of the Little Woodbury farmstead" (Hawkes 1946:79).

Similarly, in the early 1950s in the United States, the Archaeological Institute of America set up a special unit to "produce a series of documentary feature length color films which will tell the story of the ancient world…on a shoestring budget" (Garner 203:1954). The hope was to "match the extremely high technical standards set by even the worst of Hollywood's products". Ray Garner, the filmmaker in charge of this unit, was particularly concerned with verisimilitude in battle scenes as "the story of man cannot be told without battles," and went into considerable detail describing how these films suggest battles with "huge thunder clouds sweeping over the mountains and plains to the north; trees and shrubbery beginning to move under a gradually increasing wind; a few boulders standing firm as the wind whips sand, twigs and pebbles unavailingly against them" (204). Yet he declares that "trick or 'arty' effects…should not be used for their own sake…in order that the ancients may tell their own story, their works of art must be shown in as straightforward a manner as their condition will permit". Finally, he states that "we believe in the motion picture. We believe that film skillfully blended with well written narration and fine music can render a great service to archaeology. The knowledge won by the patient labors of the scientist can be presented to the general public in a way which will make the ancients seem to live again" (205). Broadly speaking, this positivism in visualization is well matched by the nascent processual mode of archaeology of the time.

[1] Dorothy Garrod's footage online: https://vimeo.com/26801350

Archaeologically themed broadcasting began on television in the United Kingdom in the 1950s. After the appearance of Sir Mortimer Wheeler, Stuart Piggott and Sean O'Riordain on a television quiz show, the British Broadcasting Corporation (BBC) found out that "archaeology and archaeologists were not dull" and produced several television series by telling "simple exciting stories about archaeological discoveries, processes, and problems" (Daniel 1954:202). These early programs were "popular beyond any reasonable expectation" (203) and archaeological programs have been featured on British television since that time. Certainly Glyn Daniel was prescient in predicting the success of Time Team and National Geographic specials in stating that "the day may not be far distant when archaeologists will find their excavations and discoveries financed by commercial interests for TV programmes" (205). In the United States this same period was marked by both an increase in quantity of films about archaeology and by the dwindling participation of archaeologists. As a result "the visual portion in many of the films comes across as an impressionistic and not very informative supplement to the script, and is often poorly integrated with the script (Beale and Healy 1975:890). This was remedied in part in the 1960s, after the Archaeological Institute of America formed a Committee on Films and Television and "detailed documentaries on specific excavation projects were becoming more common as field archaeologists began to work more closely with film editors and animators.

By the 1970s, archaeological film had become diverse in the United States enough to merit a small round of publications regarding useful titles for teaching archaeology (Beale and Healy 1975; Cole 1972; Floyd 1970; Girouard et. al 1973; Laude 1970; Moulin 1972). In 1983, the Archaeological Institute of America released *Archaeology on Film*, a book that contained reviews and details of archaeology films available in the United States (Allen and Lazio 1983). In the second edition of the book, they mention a "significant change"—that the dominant format of 16mm film had changed to videocassette, making the films "accessible to all individuals with an interest in archaeology" (Downs et al. 1993:1). Though the authors also identify the "advent of inexpensive video production and the proliferation of VCRs" as problematic, as "the low cost of video production has resulted in a spate of new productions, not always of the highest quality". The formats available for archaeological film in 1993 are listed as 16mm, VHS, 3/4" U-matic, and Beta. Archaeology on television continued to develop, though was given a more prominent place on German and British airwaves (Piccini 2007; Stern 2007). Yet there was very little critical examination of these films; it was not until Angela Piccini's (1996) discussion of the construction of Celtic people in documentaries that questions of the "how and why and for whom film has been used to construct and reconstruct images (in this case) of a pan-European Celtic warrior aristocracy" (1996:S91). The lack of engagement of academics with television has been blamed on "snobbery" by Amy Ramsay, in her dissertation regarding archaeology and television (2007). She cites the television show Time Team, which ran from 1994 to 2012 on Channel Four in the United Kingdom[2], as having a "substantial impact on the field of archaeology in Great Britain" (Ramsay 2007:48).

The move from analog to digital video happened quietly in archaeology; while digital video was introduced commercially in 1986, it was not until the early 1990s that home computers had the ability to manipulate these videos. In this chapter I have used the words "film," "movie," and "video" somewhat interchangeably, perhaps revealing my position as a scholar born in the late 1970s with only passing recollections of 8mm projectors, slides, and transparencies being used in the classroom. While I am not young enough to be a "digital native", I experienced the switch to digital before I made significant amounts of media; when the barriers to creating digital photographs and

[2] A much more recent Time Team America has aired on the Public Broadcasting System in the United States since 2009.

videos lowered, I joined many others in taking advantage of the opportunity to create and share, even though I had little experience and relatively little financial means. The transition to digital from analog has created a great deal of anxiety in both photography and cinema; while the central issue in photography is a loss of veritas[3], in film the change from analog to digital is framed within aesthetics and sensuality (Rodowick 2007). This change has not been noted at all in archaeology, besides the shift in technology making videography more accessible to archaeologists. In the early 1990s, systematic video recording was mentioned as useful in archaeological excavation as a way to have a "more complete, affordable visual record" in contrast to photography (Stone 1991:41), though the format that is suggested for archival purposes, videodiscs, is already obsolete. Still, the 1990s and 2000s saw a proliferation of archaeological film of all kinds and it seems probable that the publication of a book such as *Archaeology on Film* reviewing all available archaeology titles, would no longer be possible.

At a nexus of greater availability of technology, near instantaneous distribution, and increased participation in archaeological moviemaking, only a few have considered this wide-open field. For example, Tom Stern encourages a greater reflexivity "in these times of neoconservatism and recessive economies" wherein "the filming of archaeology underscores and reinforces temporal and chronocentric interests" (2007:209). He identifies the French company Gedeon-Produktion's films as having "empathic observation" in their series *Uncovering Lost Worlds* by means of filming the "archaeologist throughout the excavation process" (211-212). Further:

> "The extremely long filming time enables the film team to refrain from the common practice of restaging or re-performing discoveries and moments of excitement and to picture the real emotions of the protagonist in the context of a real finding. The camera records everything. If with desperation, amazement, or luck, something important occurs…the spectator becomes an active participant in the events, 'an insider', and undergoes the appropriate subjective experience/response" (Stern 2007:212)

Stern goes on to cite Gedeon's depiction of teamwork, and their narrative structures, musical imposition, and intermediation of the past as creating "a space for fascination and grace, tenderness and subtlety, but also for selectivity, determination, and protocol" (216). After viewing these films I found them to be of the highest quality of popular documentary film, but routine in their pacing, approach, and interpretive vigor. Though Stern finds Gedeon's use of computer-generated images for the visualization of research to be unique, Graeme Earl's analysis of computer visualizations in TV documentaries shows them to be quite common and diverse in their approaches to accuracy and complexity (2005). But as previously mentioned, archaeological film is not restricted to standard format documentaries produced for television; in her analysis of journalistic news media and archaeology Christine Finn notes that archaeologists could learn from the "hungry" narratives of journalism (2001). She notes that the "process of understanding is dynamic" and implores archaeologists to "sell" archaeology, that is, tell an interesting, evolving, and interest-grabbing story about the past. In this scenario the journalist and archaeologist works together, or in the case of Finn, are one and the same.

Finding a distinction between a professional and an archaeologist filmmaker can be problematic, the idea of a cohesive concept of "archaeological film" is even more so. The productions that could arguably fall into the spectrum of archaeological film include time lapses stitched together into movies all the way to elaborately staged and costumed reenactments; the content of the film can also vary immensely, from minimalist, experiential films that negotiate the

[3] See Chapter Three.

viewer through an ancient landscape to the intentionally didactic demonstrations of simple principles of excavation. This problem is raised in *Archaeology on Film*, wherein the authors state that "one of the main problems encountered in compiling the entries for this guide was determining what constitutes an archaeological film. Does it have to show excavation? Should it deal with prehistoric times?" (Allen and Lazio 1983). In the second edition of the book, they follow much the same guidelines on what they had previously decided constituted an archaeological movie—"explicitly archaeological, that treat excavations and archaeological methods, or that deal with the discovery, analysis, and interpretation of material culture" (Downs, et al. 1993:3).

As previously mentioned, analyses of archaeology in film evaluate popular movies (see *Box Office Archaeology*, *Archaeology is a Brand* and *A Treasure Hard to Attain;* Hall 2004); while the relative measures of "truth" and "reality" may actually be greater in a cinematic feature than in a short documentary (Tringham 2009), I exclude both popular movies and movies made by people who have no training in archaeology from this analysis, concentrating on the more marginal films made by archaeologists. By omitting this large body of work, I hope to better discern the place of more informal videography in archaeological practice, though certainly some genres of archaeological filmmaking draw from familiar themes in popular movies. In my discussion of genres of archaeological film I move away from previous literature and intentionally exclude the popular documentaries wherein "archaeologists have very little control over the production and final editing" and are used as on-location, talking-head experts by media companies (Schablitsky and Hetherington 2012). I also exclude works produced from "embedded" artists who have no archaeological training, though the work of Janet Hodgson during her Artists in Archaeology training at Stonehenge is particularly of note, it is out of the purview of this dissertation (Wickstead 2009). As such, I define an archaeological film as a film made by an archaeologist in order to communicate some aspect of archaeology. These can include films that are not solely shot by archaeologists, but are edited or scripted by archaeologists. There are films made by archaeologists that could be considered professional, and are certainly broadcast quality. Yet the most troublesome and the most interesting of footage shot by archaeologists is the latest iteration of archaeological film, snippets and moments uploaded to YouTube and Facebook.

Genres in archaeological films

There are relatively few publications regarding the creation of archaeological films by archaeologists; while several excavation reports may mention the existence of footage of the excavation, this footage is often unavailable and unedited. The initial outlay for a video camera, microphones, DV tapes, and increasingly SD cards, are obvious costs that are easily accounted for in an excavation budget; the subsequent time and editing equipment required to process the footage is more difficult to calculate. The progression from analog to digital film has brought some of the costs associated with video production down and removes the need for specialist equipment (beyond a high-powered computer and specialist software) to edit footage on site (Tringham and Ashley 2012). Like photography, videography on archaeological projects is a versatile tool that can be used to record formal and informal events during field work. Though one of the affordances of digital videography is the ability to take much more footage, the time required to edit this footage is still substantial. The experience of wading through hours of film that were not taken with a clear purpose or that lack a clear subject to find useable footage is a valuable lesson in filming with a vision or an idea of the final project. This does not imply rigidity in subjects deemed worthy of recording, as opportunistic, extemporaneous footage can improve the evocative quality of film

projects. A process for recording both formal and informal events develops over multiple iterations of fieldwork through feedback from the rest of the team (Brill 2000; Nixon 2010).

Though the initial capture of film can dictate later media outputs to a certain extent, most media can be "remixed" to serve any purpose. Footage that was initially captured to illustrate the surrounding landscape of a site could be repurposed to use as part of a video-tour of the site, or as part of a shocking expose on the farming practices that are draining the water table and jeopardizing the archaeological remains. Archaeological work on site could be portrayed as serious, intensive labor, or, in the case of a time-lapse video taken at Çatalhöyük, begin with the meticulous excavation of a wall on site and end in a Benny Hill parody (Figure 5.2).

Figure 5.2 Posting by Anies Hassan of his short film on Facebook

This salient point, as discussed in Chapter Two, reflects Bolter and Grusin's concepts of Respectful and Radical Remediation (1999; see also Tringham et. al forthcoming). Most remediation of archaeological information is respectful, "without apparent irony, critique, manipulation, or challenge in the mediation" (Tringham et. al 2007). Radical remediation—critical, self-referential re-uses of media that de-centers the original subject—has been relatively rare in archaeological media, but are increasing in number as archaeologists continue to experiment in film. This experimentation is encouraged by the affordances of digital film and by the increased recognition and distribution available to archaeologists through the internet. Indeed the internet has increased the quantity and visibility of archaeological movies that were once relegated to extremely expensive documentary film distribution schemes or restricted use in libraries. The Archaeology Channel, a website established in 2005 by the Archaeology Legacy Institute, hosts over 175 videos curated for quality by committee. The films on the Archaeology Channel are generally of high production quality and follow the principles of "respectful remediation" that follows a set narrative about archaeology. The "punk videos" of archaeology are found on YouTube, Vimeo, and Facebook, and project websites, usually posted by the archaeologist who made the film. These videos vary in quality and content and are

difficult to quantify in a meaningful way. Beyond the rough distinction between the more formal videos curated on The Archaeology Channel and the miscellaneous videos hosted elsewhere, there are themes that are common in many of these videos that provide another point of comparison.

There have been several efforts to classify archaeological films. An early recognition of genres in archaeological film include Casper Kraemer's (1958) analysis of the eleven films assembled by the Archaeological Institute of America, dividing them by their purpose: inspirational, educational, interpretive, documentary, and training films. Jean Laude (1970) simply divided archaeological films by audience: those for professional archaeologists and those for students and general audiences. Beale and Healy categorize the films by subject matter, stating that there are five types: excavation or laboratory methodology films, single site documentaries, syntheses dealing with whole regions or civilizations, films which focus upon a single problem, and experimental[4] or ethnographic studies (1975). Finally, while "genres" is perhaps a strong word for these similarities, and there are certainly videos that incorporate more than one of these themes, a new categorization that acknowledges the unstable categories of our visual grey literature as well as our more formalized films provides a more comprehensive view of film in archaeology. The genres that I discuss include expository, direct testimonial, impressionistic, and phenomenological. As such, I identify previously marginalized videography and the increasingly experimental archaeological films, as well as the utility of more traditional narrative forms.

Expository

Most of the videos used to teach archaeology or that are used for public outreach are the more traditional, stand-alone, didactic expository style of documentary, or, "respectful remediations" (Bolter and Gruisin 1999). These videos use varied footage to produce a cohesive storyline about an archaeological subject. While there are usually "talking head" interviews from archaeologists, the content of these interviews is generalized commentary on the site. Both archaeologist filmmakers and non-archaeologist filmmakers produce these films that are "popular among television programmers because it presents its point of view clearly" (Barbash and Taylor 1997:18-19). Though the videos produced by archaeologists do not follow the same "popular cliches" that emphasize "exotic locations, adventurous fieldwork and spectacular discoveries" (Holstorf 2007:33; Ascherson 2004), these films often do follow narratives of discovery and feature long shots of the landscape set to genteel flute music. Ruth Van Dyke describes *In the Shadow of the Volcano* thus:

> "The film begins with vaguely exotic music, evoking the romantic and culturally distant past. Still and moving images are shown of past and present archaeological sites and landscapes. Archaeologists are depicted at work, but from an objectifying distance. Information is provided in voiceovers presented in the authority-laden tones of an unidentified, deep-voiced, male narrator." (2006:371)

A majority of the videos on The Archaeology Channel follow this formula. Until the recent adoption of digital video, the "tyranny of 'broadcast quality'" required for archaeological films kept many archaeologists from filming themselves; professionals would need to shoot the initial footage, if not be in charge of the entire process (Allen 1996; Nixon 2010).

Expository films have fallen out of favor in anthropological documentary filmmaking (Barbash and Taylor 1997), but they persist in archaeology. They are incredibly useful as a way to

[4] Beale and Healy use the term "experimental" in this case to indicate the films made about experimental archaeology, that is, people in the present replicating past practices.

communicate information about finds and periods being investigated through the archaeological process. In order to form a narrative regarding the archaeological process the filmmaker must broaden their view of the site, negotiating the intense focus that is required during field work while keeping the "storyline" in mind. Expository films can be an entry into a broader realm of film genres; after putting together a successful visual narrative and learning the basics of capturing footage and editing video, the filmmaker can carry that confidence into more experimental forms. Further, making a video enters the archaeologist into a conversation about stakeholders, potential audiences for the film, and to the extent that the archaeologist wants to bring others into creating a narrative about the site. Lucia Nixon speaks of what she feels is the most interesting thing about film, is that it "can bring out issues that were there all along" (2010:331). Making a film abut the Sphakia survey in Greece "raised important intellectual and ethical issues" after Nixon realized that she had not considered showing the film locally, but she only had showing the film to her students back in Canada in mind. Expository films can be more accessible to broader audiences, and allow archaeologists to tell their own stories in contrast to cliched popular media accounts.

As a corollary to expository films in archaeology, a few filmmakers have turned the concept of the straightforward documentary on its head by making and studying "mockumentaries." These mockumentaries are a form of "recombinant history," skewering concepts of truth and fiction in the archaeological record as a form of critique of both the expository style of filmmaking and the construction of dominant narratives in archaeology (Tringham 2009). In studying the reception of accuracy and truth in television documentaries with segments of reinactment, Angela Piccini notes that viewers "believe the drama more than the documentary" (2007:228). Mockumentaries can be a way to signal to viewers that truth is often subjective in documentaries, providing insights into the process of knowledge construction in archaeology. Ruth Tringham identifies Jesse Lerner's *Ruins: a Fake Documentary* as an example of a mockumentary about the colonialism in the construction of pre-Hispanic history of Mexico (Tringham 2009). She cites Steve Anderson's analysis of *Ruins* as showing how "Lerner gradually erodes the authority of the archaeologists' and historians' objectivity" (Tringham 2009; Anderson 2006). The utility of mockumentaries can be summed up in Anderson's statement:

> "By the end of Ruins, a senile old history has essentially been replaced with a smarter, newer one. The difference is that Ruins functions as an open rather than a closed text—a text that suggests fissures and contradictions in its own argument and ultimately stretches beyond the critique of historiography to pose an indictment of tourism, colonialism, ethnography, and documentary itself (2006:82)

Direct testimonial

Figure 5.3 Video clip of a phase video at Çatalhöyük

"Today is August 5th, 2008, and you are in Building 49, space 335, this is feature 1651 and what we've done here is reveal a series of paintings on the south-facing wall of this platform."

In the direct testimonial, the archaeologist gives a summary of current finds and conditions on site. At Çatalhöyük these videos are sometimes called "phase videos," (Figure 5.3) as they are performed at the end of a building phase or during an important discovery. On some excavations, the short films are called "video diaries" and are an account of a period of time on the excavation. While some of the videos are simple, linear accounts describing the archaeology, some intersperse footage into the dialog with direct views of the particular feature the archaeologist is speaking about. Rahtz and Hanson specifically cite the utility of "the visual excavation diary, with talk-over, as an *aide-memoire*" in their excavations at Wharram Percy and Elginhaugh (1988:111). Archaeological video diaries are likely to have followed the practice of site tours, during which the archaeologists working in each area would relay information about the stratigraphy and any interesting finds to the rest of the team or to visitors on site. This expository, performative narrative is a form of *ekphrasis*, verbally telling the visual story of the stratigraphy in a short monologue while other team members and visitors look on from the side of the trench. These ekphrasic episodes are occasionally filmed during the site tour, but many video diaries feature the excavator alone in the trench, speaking directly to the camera, with no audience other than the camera and filmmaker.

The direct testimonial is arguably the most authoritative form of archaeological video; the trench supervisor gives their interpretation to the camera and there is no discussion or alternative presentations to de-center this interpretation. However, these videos defy easy categorization. On face value, the direct testimonial is an example of the expository documentary style, as the narrator "address(es) the spectators directly, through either an on-screen commentator or a voice-over

track," "seek(s) to inform and instruct" and "leaves little room for misinterpretation" (Barbash and Taylor 1997:17-19). Yet the narrator is not removed from the action or the scene, but is directly interacting with the materials they are describing. The ekphrasic narrative relies on the participation of the archaeologist in the landscape. While the video is an authoritative monologue of interpretation, the setting is intimate, and the filming usually occurs from an unprivileged camera height, at the level and angle that would realistically reflect the position of the filmmaker. Unprivileged camera position asserts that "filmmakers are human, fallible, rooted in physical space and society, governed by chance, limited in perception—and that films must be understood this way" (MacDougall 1998:203).

In a direct testimonial, the authorship of the interpretation of the archaeology (if not the video) is transparent. The videos are not considered a legitimate final publication format and the archaeologists explaining the site stratigraphy will have to re-explain it in written form. Generally video diaries are not a stand-alone source, but are embedded in a contextualizing website or have a description giving the broader context of the site. The direct testimonial is a unique example of a practice that articulates with the storytelling aspects of field archaeology, creating a niche genre of media within archaeology. While the power of images in archaeological photography and their non-reflexive use as a form of scientific proof has been challenged (Shanks 1997), the direct testimonial requires the author of the interpretation to explain the stratigraphy as part of the visual production; the image does not retain all authority and neither does the archaeologist, but the meaning is made in concert by the performance that is captured on video, embedded in the landscape.

Impressionistic

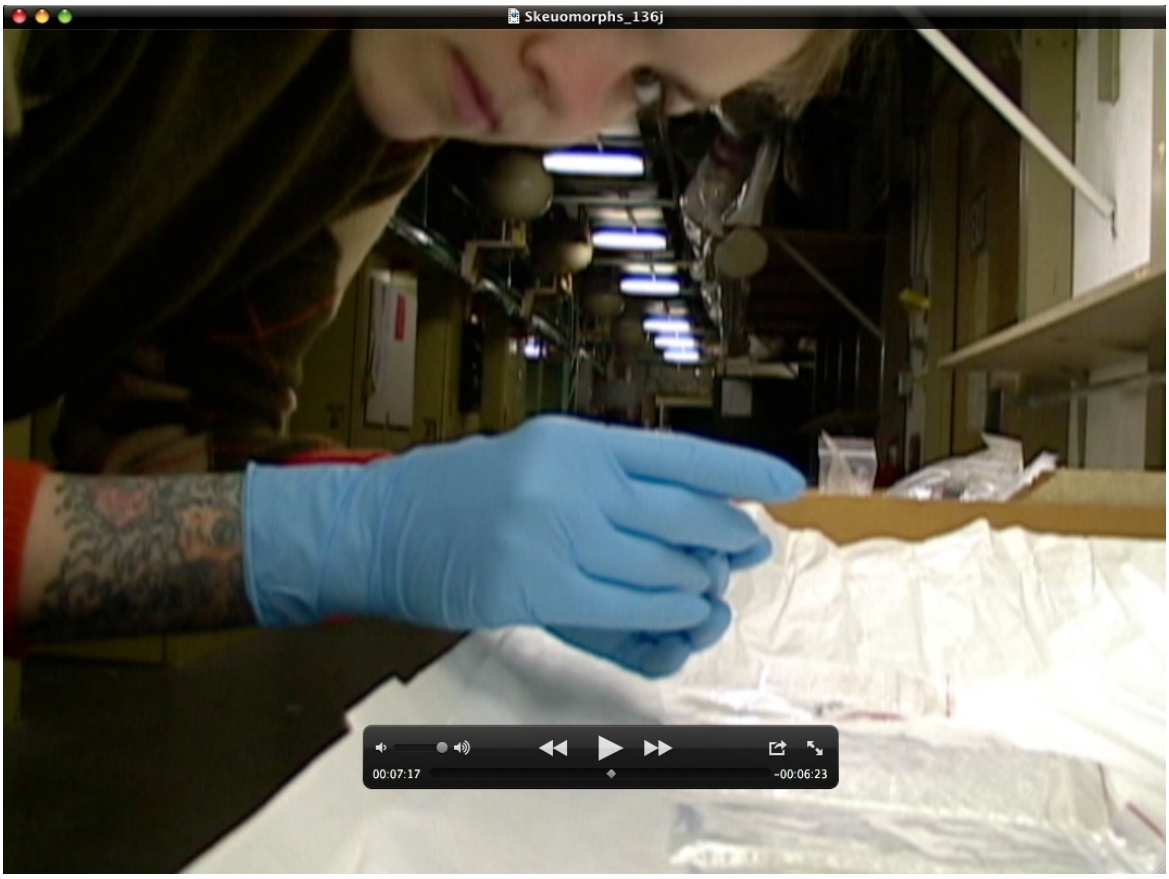


Figure 5.4 Clip of Colleen Morgan's video, Skeuomorphs

Increasingly archaeologists have begun to experiment with impressionistic documentaries, documentaries that are "lyrical rather than didactic, poetic rather than argumentative" and that "imply more than they inform, and evoke more than they assert" (Barbash and Taylor 1997:20). Though a relatively small number of these films are made, they specifically investigate the interdisciplinary space between art and archaeology, emphasizing that "through this hybrid space, sensibilities from art and archaeology have the potential to inform each other in ways that not only broaden our range of expression but also push our practical and theoretical practice in new and exciting directions" (Witmore 2005:57, see also Schofield 2009). The lines between impressionistic and expository documentaries are not always obvious. For example, my film *Skeuomorphs* (Figure 5.4) about the investigation of the knapped glass points made by Ishi that are housed in the collections of the Hearst Museum of Anthropology, is completely without diegetic sound but is otherwise a fairly straightforward expository narrative. However, in the middle of the film, as I examine the materiality of the glass by otherwise scientific means of quantifying the length and width of Ishi's points, the film enters an impressionistic montage of glass colors and forms. This montage emphasizes the hybridity of Ishi's practice—what was viewed as an "ancient" skill set was performed with "modern" materials and this fascinated Ishi's audiences as he knapped at the museum, and continues to intrigue the public today, as collections of glass points can be found in museums around the world (Heizer and Kroeber 1981).

Impressionistic documentaries in archaeology are more common among post-processual archaeologists, as they celebrate subjectivity and lack the authoritative voice-overs and overtly didactic structure of the expository film, yet these films are sometimes confusing and frustrating to audiences expecting tidy narratives about the past (Barbash and Taylor 1997). Happily, some filmmakers are able to create compelling impressionistic documentaries that capture the multiple and fragmentary nature of archaeological research. For example, *In Transit*, an impressionistic video about the "excavation" of a 1991 Ford transit van, it was decided that "the screen-work would be self-analytical; a 'Greek chorus' of unidentified voices would be arranged almost as if in conversation to contest a more conventional, linear, visual narrative" with the dialectic emerging "only at the last creative moment" (Bailey et al 2009:18). While the film does follow a linear progression following the investigation of the van, the quick jump cuts between the shots, combined with the un-credited, disjointed voices create an aestheticized account of archaeological investigation. In the case of *In Transit*, the impressionistic format of the film reflects the progressive, contemporary stance of the archaeologists conducting the research.

Phenomenological

Phenomenological archaeological film is concerned with granting the viewer the gaze of an archaeologist. Filmed at eye-level, the video attempts to convey the sense of landscape and place. Krysta Ryzewski states:

> "Through the camera's lens she views the physical landscape of the archaeological site in the foreground and middleground, the excavations in progress, the colors and textures of the soil, layers of clearly defined strata, artifacts in the sidewalls, and the buzz of conversations. She takes in the background as she moves around the site, the views of expansive, fresh-cut hayfields, the surrounding waterways, a bright blue sky, the impressive historical mansion" (2009).

The archaeologist is using the video camera to record the sensory components of archaeological fieldwork, the sounds and sights "afforded by screen and microphone that cannot be conveyed or reproduced in the written narratives or archival photographs". My use of "phenomenological" to describe this genre of film does not reflect Allan Casebier's use of phenomenology to describe the relationship between the film and the viewer of the film (1991) but rather Vivian Sobchack's emphasis on the subjective, emotional and existential side of the film (Wahlberg 2008; Sobchack 1991). Still, phenomenology in film criticism is generally used to describe the relationship of the viewer of the film to the film, not the intention of the maker of the film. My understanding of phenomenological film in archaeology is within the actions of the filmmaker conveying their sense of place as directly as they understand it, to the viewer. In contrast to the observational style[5] of documentary film, phenomenological archaeological films do not adopt the same film codes of fictional films; they are primarily shot from the perspective of the archaeologist, in a single, continuous shot.

Much of the "punk" footage of archaeological excavations is phenomenological, though a better word for it may be "experiential" or "incidental." Video cameras in cellphones are now common, and the ability to take a short film and post it online immediately enables archaeologists to share specifics of the on-site experience. While a photograph taken of a dust plume on site is certainly evocative, but while I was excavating in Qatar, a short video was the only thing that could

[5] Observational video, an ethnographic film genre that attempts to edit films in a way that is closer to classic fiction films (Barbash and Taylor 1997) are not quantified in this dissertation, as it is rare in archaeology.

capture the ferocity of the sandstorm that had blown onto site. Sometimes these phenomenological moments are inserted into longer expository or impressionistic films, but often their powerful diegetic sound is lost in voice over. Some of the on-site discussions between specialists and excavators as well as lab and excavation work were filmed at Çatalhöyük in short clips that were stored on the on-site database (Hodder 1997). These moments were captured to show the interpretive process, though they are unavailable to the public. These short, pheomenological videos compare favorably to "home movies" or "folklore documentary" (Sherman 1998).

A more formalized form of the phenomenological film is the video walk, or what Chris Witmore terms, "peripatetic video" (2004). This form of media requires the viewer to be in the same place as the videographer, holding a device that replays the previously shot video as the viewer walks around and wearing headphones. Chris Witmore draws inspiration from media artist Janet Cardiff's video walks that create a "media overlay whereby the digital media are superimposed upon the corporeal background" (2004:61). Witmore created his videos at four sites in Crete, incorporating surface garbage on a Peak Sanctuary and a funeral service in the Old Town of Rethymnon (64). Along with diegetic sound he incorporates "sounds evocative of past events, such as the clank of armor in battle or the roar of WWII machine guns in the distance" and "contextual descriptions including…notebook entries from excavation reports" and discussions about other scholarship or feelings about the place. The Senses of Place project at Çatalhöyük was also inspired by Janet Cardiff's video walks. However, instead of the viewer of the video walk being locked into a single route, Ruth Tringham, Michael Ashley, and Steven Mills allowed the viewer to choose their own route, "remixing" their experience with the media provided (2009).

These categories, or sub-genres of archaeological films—expository, direct testimonial, impressionistic, and phenomenological—are not the entirety of the canon, and many works intermix modes of videography. Still, these assignations leave more room for experimental films that would have been uncategorizable under earlier classification schemes. It is likely that digital media will allow even greater variety in the near future, such as the augmented reality films and machinima discussed in the concluding chapter of this dissertation. Even now, the file size for animated gifs can be larger with increased internet download speeds, effectively creating short films that defy easy categorization. Still, the aforementioned categories make the experimentation in archaeological film more visible; it is probable that the archaeologist who takes a short film on her iPhone one day at work to upload to Facebook might not assign such great import to her short, phenomenological film. But being aware of a larger lexicon of filmmaking and of the genres of archaeological films allows us to contextualize her video and query the nature of the archaeological archive.

Archaeological video and the panopticon

Figure 5.5 Site tours at Çatalhöyük

Working on archaeological projects is often like living in a fishbowl, and this was especially true at Çatalhöyük (Ashley 2004). When we were not being watched by the daily site visitors, there would be specialists or guards, and sometimes artists or anthropologists would wander through. This feeling of being watched was especially true when videographers or people recording sound would come on site without warning. It was disconcerting to look up and realize that you were being filmed—what was I saying? Chadwick and his colleagues "found the cameras at Çatalhöyük intrusive" (2003:103). The availability of inexpensive video tape allowed a more casual use of filming around the site, and the zoom lenses and directional microphones allowed videographers a false proximity to excavators who may or may not be aware that their actions and conversation were being captured and subsequently used without their knowledge or permission. As previously mentioned in Chapter Three, after conducting a video interview with Roddy Regan, one of the long-time archaeologists at Çatalhöyük, he gave me a direct look and said, "I've filmed hundreds of these things but I've never ever seen any of the results."

Surveillance is deeply implicated in the lineage of new media. Lev Manovich traces the history of the computer screen from photography, through radar, and then the development of tracking software by the Semi-Automatic Ground Environment (SAGE) command center that controlled U.S. air defenses in the mid-1950s (2001). With nearly instantaneous online publication available for videos, there is the potential for embarrassing or inappropriate content to become widespread before the subject of the film can take control of the content. This behavior is relatively

innocuous compared to the notorious, ubiquitous tracking of social media companies who use and sell data about your interests and your interactions with your friends (boyd 2011). Yet there are "discriminatory social implications of panopticonism" that reveal the differential social status of those under scrutiny and those who hold the cameras (Elmer 2003:232). While this has abated somewhat in light of the growing availability of video cameras, there still remains a certain wariness of archaeologists toward filmmakers.

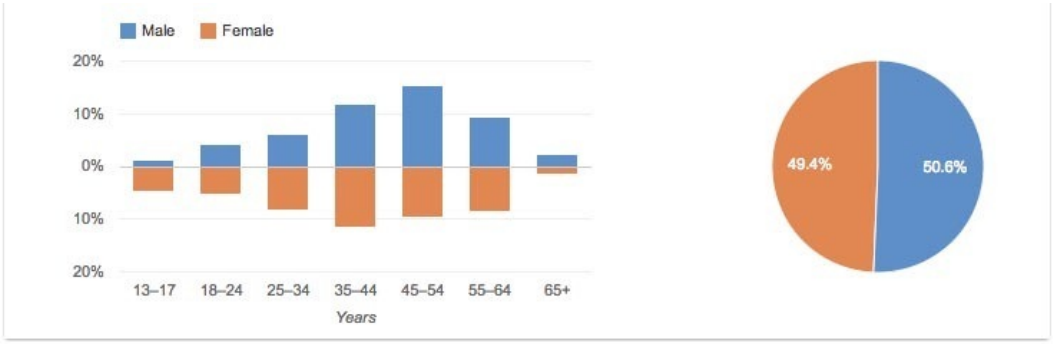
Film is not the only means to surveil the members of excavations; mandatory site diaries or "blogs" can be framed as a reflexive measure yet without reciprocity throughout the team and an explicit assurance that they will not be used against the individuals who express their opinions, the blogs quickly become dry accounts of stratigraphy. To remedy feelings of surveillance while taking photographs and videos on site there should be a relationship of trust, that the filmmaker would not abuse the trust of the subject by videotaping while the subject was unaware of the person, nor would they publish any media without the permission of the subject. I discuss the issues of assent and Human Subjects Review in regard to video later in this chapter, yet it is relevant to note that feelings of surveillance can be mitigated by the position of the filmmaker within the team. If the person is another archaeologist or a long-trusted site media expert, there is an intimacy and trust present in the media that is completely absent in media made by outsiders (see Chapter Three for discussion of this phenomenon in photography).

The audience and social media

It is telling that Laude divided archaeological films by their intended audiences, those made for professional archaeologists and those made for students and general audiences (1970). The films that we make for other archaeologists posit a certain amount of archaeological training and background; in particular direct testimonials speak to the archive writer, the director, the specialist who is interested in the particulars surrounding a phase, feature, or artifact of note. But most archaeological films are for a more general audience, though this audience is not usually articulated in terms of specific groups of stakeholders. In Tringham's introduction to the Archaeological Film Database (2009), she identifies a need to critically evaluate both the audience's interaction with the film and the socio-cultural impact that the film may have. Reviewers of films must "think about how an audience at the time when the movie was made might have made sense of the movie and how this would be different from the response of current viewers" (2009:11). Yet there have been very few attempts to quantify audience response to archaeological movies. One example is the work of Marilyn Beaudry and Ernestine Elster who held an archaeological film festival, during which they screened films at the University of California, Los Angeles and University of California, Riverside, drawing crowds of 200 and 50, respectively (1979). They prepared a questionnaire to establish the audience profile of the film festival and published their responses. The audience had a majority of women (UCLA, 65%, UCR 73%) who were older (less than 20% under 30), educated (at least 75% had bachelor's degrees) and relatively well-off (family income exceeding $15,000 per year—adjusted $47,600 in 2012) (792). This demographic view into who attends archaeological film festivals is valuable to understanding the potential publics who are being research by archaeological outreach, but also as to who is not being drawn to such festivals.

The demographics of the online audience is, to a certain extent, similar to that of the 1970s archaeology film festival audience. The tools provided by Google Analytics to assess the viewers of YouTube videos provide a fascinating comparison study to that of Beaudry and Elster's. I uploaded my first video to YouTube on January 21, 2008. At that time, YouTube was only one of several

competing companies in the online video content world, with Google Videos and Vimeo providing competing services. I did not widely disseminate my video, *Skeuomorphs*, but I did post about it on my blog, Middle Savagery, and provided a link to YouTube for readers of my blog to view the video. Since that time, the video has been watched 1,647 times, as tracked by Google Analytics. The same movie has been screened in three small film festivals, at University of California, Berkeley, at the "Archaeology Indies" at the San Francisco Presidio and at Çatalhöyük, Turkey. Attendance at these three festivals altogether was perhaps 100 people. By putting *Skeuomorphs* online, I have increased the viewership of the video by 16 times (Figure 5.6).



	Top locations by views	Views	13–17 years	18–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65+ years	Gender
1.	United States	10,447	4.2%	9.7%	14.3%	21.6%	24.1%	22.2%	3.9%	
2.	United Kingdom	2,085	3.7%	7.8%	17.2%	23.3%	24.3%	18.4%	5.3%	
3.	Turkey	1,139	5.8%	4.6%	18.4%	31.6%	15.4%	24.1%	0.0%	
4.	Canada	1,039	7.6%	9.7%	13.5%	29.5%	20.6%	15.8%	3.2%	
5.	Germany	687	4.0%	8.0%	10.6%	17.0%	56.1%	0.0%	4.3%	
6.	Italy	573	0.0%	6.6%	20.8%	40.1%	23.5%	5.7%	3.2%	
7.	Australia	486	40.2%	6.1%	6.3%	10.1%	22.5%	14.9%	0.0%	
8.	Spain	392	11.5%	12.1%	13.1%	26.9%	36.3%	0.0%	0.0%	
9.	Poland	261	0.0%	35.7%	31.6%	32.7%	0.0%	0.0%	0.0%	
10.	Greece	251	0.0%	13.8%	19.4%	45.9%	13.2%	0.0%	7.7%	

Only top 10 locations available. 1 - 10 of 10

Figure 5.6 Statistics taken from Youtube.com of views of *Skeuomorphs*

As of October, 2012, I have had 21,700 views of my 28 videos on YouTube. The video with the most views (4,100), is *What Color is Çatalhöyük?* a short film showing clips of interviews with archaeologists at Çatalhöyük, each answering the title's question. The video with the least views (4) is simply called "video" and is a failed experiment with a new iPhone app that I never got around to deleting. The majority of my viewers (10,400) originate from the United States, with the second most in the United Kingdom (2,080), and a slightly more surprising third place in Turkey (1,140). The last likely stems from the popularity of my Çatalhöyük films. Altogether, my online videos have been seen in 126 countries. The age and gender breakdown is also sorted by country (see figure) and to a certain respect, reflects the findings of Beaudry and Elster. While I know my videos are assigned in classrooms, a surprisingly few views came from the 18-24 age range (9.7% in the USA) while

there was a fairly even spread in the older age ranks (35-44 21.6%, 45-54 24.1%, 55-64 22.2% in the USA). One of the most notable outliers is Australia, where an astonishing 40.2% of the 486 views came from the 13-17 year old age bracket. Most of the views of the videos originated from within YouTube's webpage (82.2%) while only 11.4% came from the video viewed embedded in another website, most likely at Middle Savagery.

Beyond these basic metrics, YouTube also measures retention of audience throughout the duration of the video. The short videos with varied content (fast cuts between interviews) that have been assigned for college audiences have the greatest audience retention. The series David Cohen and I filmed for the Asian Art Museum of San Francisco, introducing basic concepts of the archaeological profession to a broad audience retained viewers for an average of 70% of the total length of the video, whereas the much longer, three-part series of *Personal Histories in Archaeological Theory and Method* video series that I did not create but that I uploaded by request of Margaret Conkey are much longer, 30, 40 and 50 minutes each, and they retained audiences for 19.9%, 21.8% and 6.3% of the length, respectively. For archaeologists concerned with communicating a complete message through video, these statistics guide filmmakers to keep movies short, direct, with varied content. While YouTube has been typified as a community that thrives on negativity and trolling[6], negative remarks and "dislikes" on my videos have been minimal. I have received two negative comments, one on *What is the best thing about being an archaeologist?*: "I just watched this for a anthropology class now I need to bullshit half a page of notes because of how pointless this video is" from TheD415, who appears to be a young, 18-24 Asian male from San Francisco. There are nine "likes" on his comment, probably from other students who had to view the assignment in class. There is another negative comment from ironsouthpaw on *Skeuomorphs*, my previously mentioned Ishi movie, who called the video "Stupid…waste of time." The other three comments on *Skeuomorphs* are resoundingly positive, including one from Flintknappingtips, "What a neat video Colleen. I've been lucky to have handled a few of Ishi's points too. If you can share I'd like to know what kind of debitage analy(sis) you were doing. Thanks".

YouTube certainly exemplifies the reach, diversity, and power of online social media for video outreach. With a robust demographic analysis system such as Google Analytics backing the viewing statistics on YouTube, archaeologists can assess the efficacy of online outreach to different stakeholders, even if they do not leave comments on the videos. It is worth mentioning that there is a clear bias in the statistics that YouTube provides. Beyond the ability (or lack thereof) for people to view videos online in regard to their internet speed and capabilities, the reporting of age and gender for Google statistics is suspect. In particular, the bias for age is older, as teenagers and children misrepresent themselves so they do not have content restrictions online. On YouTube the viewer must be 13 years old to have an account and 18 to view all content. Still, with the ability to host unlimited content and to closely track and interact with viewers, YouTube is an extremely powerful tool for archaeological outreach. The "punk" videos of archaeological filmmakers fit in well in this venue, as Michael Strangelove gleans from Patricia Zimmerman, "amateur film is history from below, unexplored evidence, potentially subversive in its meanings and implications, 'a necessary and vital part of visual culture"' (Strangelove 2010:24; Zimmerman 2008).

[6] In Watching YouTube, Michael Strangelove casts the negativity of YouTube as a larger problem with internet communities and anonymity (2010:118-120).

However, from March 2007 until October 2010, YouTube was blocked in Turkey for hosting videos insulting Ataturk[7]. Even so, YouTube remained the eighth most accessed website in Turkey, showing that many Turks were using proxy tools to get around the ban. As I had planned to create video blogs while working on site at Çatalhöyük, this effectively cut off my use of YouTube while in Turkey, greatly reducing the utility of the website for local digital outreach. Lucia Nixon critiques Çatalhöyük for initially having very little involvement with the local community, "despite their presence in the landscape and their involvement in the project, local people are not responded to, and that to date they have no official response to, or impact on, the project (2010:352). She moderates this critique somewhat in the 2006 postscript, as the original article was written in 2001, and the book was published four years later, with much outreach work done in the interim. Yet while there has been a substantial increase in outreach and study of how the excavation affects the lives of people in the region (Bartu 1999, 2000, 2005) the local people are still not involved in the construction of meaning at Çatalhöyük (Atalay 2007). When I came on site, I did not intend to blur the boundaries between the local site staff and the excavation; I intended to test the reach and boundaries of digital outreach. In the context of blocked access to YouTube and minimal internet initially available on site, how does Nevriye's excursion into excavation fit within the narratives of digital video and outreach at Çatalhöyük?

[7] http://en.wikipedia.org/wiki/Censorship_of_YouTube#.C2.A0Turkey

Conclusions

Figure 5.7 Colleen Morgan filming at Çatalhöyük

Context

I felt a little silly standing at the edge of the trench, sweeping the lens of the little Canon camcorder over the ongoing excavation of Building 49. No fewer than four teams of researchers had extensively filmed at Çatalhöyük over the years, and there were ongoing, routine videos being made by Jason Quinlan, the site media expert. Just the year before, in 2007, an artist had come around the site, filming us from far away, making the excavators nervous. My intention was to build a process of quick remediation from the trench; I was to post video blogs documenting the excavations at Çatalhöyük from an intimate viewpoint, giving weekly updates from the field. While this kind of immediacy is now commonplace, it was still relatively new in 2008 and I was excited to integrate the experience of an excavator with reflexive digital media.

"You know…"

I looked up, startled. Ian Hodder had a habit of soundlessly approaching the excavation trenches; I've since learned that it is an essential trait of all dig directors. I switched the camera off and turned my attention back to him.

He started again, "You know, YouTube is blocked in Turkey." I looked at him, shocked that he remembered such a small detail of my research design after I met with him. "I found out from the tourists that came around today." He turned on his heel and started back down the tell to the dig house. Indeed, my plan was to post the videos on YouTube; at that time there were few places to post videos online for free and I wanted them to have a broad reach. The lack of access to YouTube was only one of the many problems that I encountered during my dissertation research that season; subsequently there were no video updates and few photographs or blog entries. The work of an excavator at Çatalhöyük was demanding and though I had excavated in previous years it was my first attempt at integrating digital archaeology into my workflow. I still kept bringing the camera back up to the trench and sometimes Dan or Lou, the two excavators I was working with, would take it from me and film. The results of that season were five full miniDV tapes, with some interesting content, but only one video edited from the files—the short video of Nevriye coming into Building 49 to excavate.

My contribution to local outreach at Çatalhöyük, this video of Nevriye excavating, is relatively small within the greater context of outreach associated with the site. Since 2006 Sonya Atalay has arranged a community day at Çatalhöyük, during which locals from Küçükköy come to the site for a large meal, and there are tours of the tell and the labs, and entertainment for children. Atalay's work is informed by approaches from indigenous archaeology, that is, "as archaeological practice that foregrounds knowledge and experiences of Indigenous people to inform and influence Western archaeologies" (2006). During the same year that Atalay coordinated community day, she and Burcu Tung held extensive interviews with the surrounding community regarding their interest in Çatalhöyük and their questions about the site. She did not frame the same questions to the excavation team, who did not participate in community day. In her consultations with the local people, she did not involve the excavators at Çatalhöyük, many of whom interacted with the workmen on site or with the guards. Sadly, most of the site excavators were uncomfortable with the way that and subsequent community days were conducted, feeling "weird" and "out of place." Not many of the site excavators knew Sonya Atalay, nor did they understand what she was doing or why. Also, the community day was scheduled on a Thursday afternoon, during the time that the paid archaeological staff had "off." The negotiation of "work time" and "free time" was difficult between the paid excavation staff and the academics. The academics on site tended to work long hours, yet they were inside most of the day and could schedule their work flow. The paid excavators were outside in temperatures that often approached 40C and were often tired after the afternoon office hours. The paid excavators had stronger boundaries between work time and free time and felt disrespected if these boundaries were violated. They felt that the community day was out of their purview and intruded on the time that they would normally be resting or building a bonfire in preparation of the weekly party.

Sonya approached me after she heard that I had recorded Nevriye excavating with us to see if there was any footage I could make into a short movie to show during community day. I was happy to help, and spent six or seven hours of my evening "break time" cutting the footage of Nevriye into a 2.5 minute long video. I created the video with Final Cut Pro 8 software and iMovie, and added titles and music; a detailed description of this video can be found below. I made two DVDs, one for Sonya to show for community day, and one for Nevriye to keep. Sadly I was sick during community day with one of the many stomach flus that plague the Çatalhöyük dig house, and did not see the movie being shown, but I was told that it was received very well and that Nevriye was proud to be featured in such a way. Nevriye was not the first house staff member to be featured in public interpretations of the site. Mavili, one of the other members of the house staff, provided

the narration for the short movie made to explain Çatalhöyük showing in the on-site museum to explain the excavation to visitors to the site (Hodder 2009). Her voice was also used for a large exhibition on display in Istanbul[8], but was ultimately changed to the voice of a woman with a more urban accent. The silencing of her local "voice" is a complex issue in multiculturalism and nationalism in cultural heritage and Hodder places Çatalhöyük in a larger narrative regarding secularist and Islamic forces within Turkey and Turkey's relationship with the European Union. Sadrettin, a longtime site guard and cafe owner at Çatalhöyük wrote a book titled *Protecting Çatalhöyük*, describing his experience at the site (Dural 2007). The accounts of these individuals and their relationships with the site in addition to ethnographies conducted in the region are important components of understanding the impact of a large-scale archaeological project on the community (Atalay 2010).

When I burned the DVD for Nevriye in 2008, I asked through an intermediary if she would be able to watch it, and she told me that she did not have a DVD player, but that she knew someone who did have one. I did not know if she wanted the DVD as a keepsake of the day that she was featured prominently as an archaeologist from Çatalhöyük. As Sonya Atalay notes, "in the communities around Çatalhöyük, distinct power imbalances exist between archaeologists and local community members," and even the Turkish nationals who come to site as archaeologists are called *yabancı*, or foreigner (2010:422).

Figure 5.8 Nevriye posing as an archaeologist at Çatalhöyük

When Nevriye positioned herself as an archaeologist (Figure 5.8), as a central participant in the site and producer of knowledge, she was subverting the site power structure, taking on a role that no other local person had filled. She is beloved by the members of the team, and after she left the trench I felt newly ashamed that I was unable to speak to her in Turkish. Later, she would come

[8] See Chapter Six.

to site to see the fantastic horned platform in Building 77, and asked me to take a photograph of her with a brush, as if she was excavating this important find. While there had been previously mentioned examples of local ethnographic work, museum displays in Turkish, and community outreach days, the lack of knowledge that even onsite workers had was astonishing; a man who had worked at Çatalhöyük for ten years asked Sonya Atalay (2010:423), "Where is the mass grave where you bury all those people you dig up?" At other large archaeological research projects[9] I have endeavored to include the workmen directly in the excavation process, giving them explanations for why we were digging, training them in the recording system, and involving them as I would involve students that I was teaching. Atalay has been working to mitigate this situation, forming an archaeology-based community theater group and an internship program to improve the situation of women in the community, many of which have only received the equivalent of fifth-grade educations (424).

Figure 5.9 Workmen resting at Çatalhöyük

Generally, there has been little on-site digital outreach at Çatalhöyük. While most of the site workman have cellphones with cameras, there is relatively little internet access. There is one computer with a modem on site, and it must be shared between the hundred researchers on site, with increasingly heavy internet demands. This is partially an artificial scarcity; there is high-speed internet available for a relatively inexpensive price via cellphone, but cellphones can be difficult to maintain as you must eventually register the line with the government or the service will be shut off. While in previous years there have been short videos and photographs uploaded by the team during

[9] With the QIAH at Fuwairit in Qatar and in Dhiban, Jordan.

the excavation, this has dwindled in recent years, as the workload for Jason Quinlan, the site photographer, has expanded substantially. For the most part it is up to the individual site participant to create and distribute digital media. Scott Haddow, a member of the bioarchaeology team, updated a very engaging blog during the 2012 season, but this was performed on his own time and not as part of his professional duties. While Çatalhöyük is relatively isolated on the Anatolian Plain, there are ample opportunities for digital outreach, but contrary to stated goals of a reflexive methodology, this is not incorporated into plans of work on site.

Authorship

After I finished making the video, I arranged for Nevriye to watch it, and soon a small crowd formed around the computer screen. Nevriye was excited but also shy to see herself on the screen, as most people are when watching themselves on video and she held my hand while she watched. Eventually the whole seminar room, the default office for the excavation staff, was watching the video. I was also somewhat chagrined; though I do not mind presenting my work to large audiences, nor do I mind posting some of my most intimate thoughts online in my blog, I quail at showing my movies to large crowds. All I can see when I watch them are the small errors that are invisible to everyone else. Still, learning how to create and edit videos was an integral part of my education as a digital archaeologist. Learning to create visual narratives from various forms of media has improved my work in photography and 3D reconstruction, and knowing how to edit film allows me to bring the totality of digital media experience together in a way that makes it legible in a way that a text such as this dissertation will never achieve. Yet as Christine Finn aptly observes, "bells, whistles and computer animation do not a good story make" (2001:263). A more critical and reflexive stance in archaeological filmmaking is desperately needed.

As such, I present a written account of *Nevriye Çatalhöyük'te kazı yapıyor,* the short video that I made of the day that Nevriye came into the trench to try her hand at excavation. In this summary I describe the scenes from a social semiotic approach, a stance that emphasizes how the viewer is positioned by the filmmaker and the representations of people and relationships on the screen (Iedema 2001). Close readings of archaeological films are non-existent, and while my position as author of the film perhaps compromises my view of the footage, I can give a privileged reading as I can recall the circumstances that led to particular footage being shot in certain ways. This close reading also allows me to reflect on a movie that I made several years ago, with the inevitable hindsights that occur. I have chosen to include still screen shots to illustrate the scenes, though they obviously do not capture the on-site movement and interactions between Nevriye, a few of the site staff, Louise, a site excavator, and Duygu, a site conservator. I remain mostly silent throughout the film, as the video camera was small and I kept it close to my face—speaking would have spiked the sound levels.

Figure 5.10 Title image for *Nevriye Çatalhöyük'te kazı yapıyor*

00:00:00 The video opens with a still photograph (taken with my digital camera) of the newly erected shelter over the north "4040" excavation area (Figure 5.10). The image was taken on beautiful day and enhanced with Photoshop; the blue sky over the bright white excavation shelter provides a crisp contrast to the yellow and green grass on the tell. One of the paths that the excavators follow up the tell arcs to the right, providing a faint echo of the shape of the white, rounded shelter. The shot establishes the film's mise-en-scène, the excavation area on top of the tell. It is shot from a standing position, but looking up at the shelter from the bottom of the tell. This low azimuth arguably affords a sense of authority to the excavation shelter, and elevates the shelter, and therefore archaeology to a lofty position above the viewer. As I shot the title photograph, I was merely reflecting on my morning view, though it perhaps reveals my feelings of passion and reverence for archaeological practice in the frame.

00:00:01 What looks like a torn piece of paper fades in at the bottom of the screen with writing on it, *Nevriye Çatalhöyük'te kazı yapıyor* (Nevriye excavates Çatalhöyük). This, one of the default presentation screens offered by iMovie, serves as the opening title image and holds as the music fades in. The music is simple and modern, but distinctly Turkish.

Figure 5.11 Title image fading into the opening shot of Nevriye

00:00:10 The shot of the shelter cross-fades into Nevriye, looking directly into the camera at eye-level and pointing to the dirt with her trowel (Figure 5.11). The cross-fade further reinforces that Nevriye is in the archaeological site, as the images are superimposed. Nevriye is wearing a green embroidered headscarf that does not fully cover her hair, and marks her culturally as a resident of rural Turkey on the Konya plain. She is older, but fit and looks comfortable squatting in the trench. She is digging in the corner of a mudbrick building, and you can see a crumbled plaster wall rising around her.

00:00:18 From off camera to the right, the voice of Duygu, the head of Conservation on site (who is also a Turk) calls, "Nevriye!" in a happy, surprised voice. Nevriye responds "Come here, I'm excavating!" She turns back to excavating and there is a cross-fade into the next scene.

00:00:28 This cross-fade establishes that time has passed since the first scene. Nevriye is excavating in the same spot, now next to (behind and partially obscured by) Louise Felding, an excavator on site. Off-screen, and above Nevriye, Duygu says, "Wow, the archaeologist Nevriye." Nevriye sits up to talk to Duygu and the camera follows her as she states, "I did it here. Yes, they're going to put my picture on that wall." (Nevriye is talking about the photographs on the interpretation boards erected on site next to the trenches.). The camera pans to Duygu who is crouching next to the trench and she laughs (Figure 5.12). This view establishes that Nevriye, Louise, and I are working submerged in a trench, about a meter beneath the surrounding ground level. Another pair of legs is seen walking in the background and there is enough diegetic sound that it is obvious that other people are working around us. In the background are the footings for the shelter that was visible in the opening screen.

Figure 5.12 Duygu watching Nevriye excavate

00:00:42 The camera crossfades into another angle, filming Nevriye from the other side, as she has shifted positions in the trench. The angle of the camera is higher, both allowing the viewer to see what Nevriye is working on, but also "looking down" on Nevriye. The oppressive angle of the camera is somewhat mitigated by the intimacy of the shot; Nevriye is still entering the entire frame on the left. Louise is on the right-hand side of the frame, watching Nevriye excavate. Duygu, off-camera, states, "This area needs to be excavated finely," to which Nevriye responds, "Okay." The viewer can see that Nevriye is scraping at what is probably the interface to the next context, moving from a "make-up" context to a white "plaster"[10] floor and must be careful, as the "make-up" context has not been fully excavated and to dig the white plaster floor would be out of the correct stratigraphic sequence. Nevriye corrects herself, now using a leaf trowel, and continues to remove the "make-up" context.

00:00:50 The low, off-screen voice of Shahina Farid, the excavation director at Çatalhöyük, comes from the top left of the trench states, "what's that edge there?" As Nevriye's excavation has revealed the very edge of a cut feature. Louise Felding spots it too, and pointing states, "yeah, what is that?" and there is an uncertain laugh, probably my own, behind the camera. Another, the male voice of Michael House states, from off-screen right, "Is that a baby, what's that hole there? Is there a baby in there?" Then I say, "It has to be something…" while keeping the camera trained on the newly revealed feature.

00:00:57 Another cross-fade to Nevriye, looking intent and scooping up the loose dirt into a dust pan. There is a lot of diegetic noise, people laughing and sounds of excavation. Suddenly Nevriye cries, "What it to you? Is it your issue?" This makes Duygu laugh off screen.

[10] See Chapter Six for more about the "plaster" at Catalhoyuk.

Figure 5.13 Nevriye excavating

00:01:11 Cross-fade to Nevriye, in much the same position, almost finished cleaning up where she had been excavating (Figure 5.13). She asks, "Are we going to fix this bit? (Making it level)" and takes up the trowel again. Duygu translates for Nevriye to Louise, "What are you…do you want her to…" and as Nevriye keep troweling, Louise answers, "Yeah, just that little bit there, that lump is okay," while waving toward what is left of the make-up context against the wall. Nevriye continues troweling, adeptly removing the rest of the context.

Figure 5.14 Nevriye's colleagues look on

00:01:21 Another male voice, that of the site cook Ismail, Nevriye's co-worker/boss on site, saying, "What's she doing? Restoration?" (Many of the local women are brought in to work with the conservation team to excavate the paintings on site.) The camera pans up to reveal Ismail and two of

the other women kitchen staff watching Nevriye (Figure 5.14). The camera continues to pan to Duygu, who responds, "I'm going to make her do restoration work tomorrow, today she's excavating." From Duygu the camera goes back down to Nevriye, who is at a low camera azimuth again, as I had moved from a crouching position to standing up. Nevriye is still digging.

00:01:32 I zoom in on her excavating, as I see a slight change in the soil. Ismail continues above, "Today she'll learn and tomorrow she can work there," yet this dialog is side-lined as I have focussed the camera on Nevriye's hands digging the deposit.

00:01:45 The frame is still close in on Nevriye's hands, omitting her head. She states, "There's something with ash." There is a small laugh, possibly Louise. Duygu translates, "She's saying it's a bit ashy there" and Louise agrees, "Yeah."

00:01:54 There is a cross-fade and Nevriye is back in the center of the frame, close in, at eye-level. She is removing the remains of the make-up from where it abutted the plaster wall. She is not holding the trowel as an archaeologist would, but she is efficiently removing the deposit. The camera is jostled and Louise says "sorry" and I say "It's alright, sorry" back—we are in a very small building and while it has been good to have Nevriye excavating with us, I am in the way filming while Louise and Dan are trying to work.

Figure 5.15 Nevriye excavating

00:01:58 There is another close-up of Nevriye's hands moving dirt out of the way (Figure 5.15) and she asks "Did my posse leave? Come look!" She piles the dirt into one place and drops the trowel.

00:02:07 The camera pans back up to Nevriye's face as she scoops up the dirt in a dustpan. She has a small smile on her face as she says, "And let me put this away, for goodness sake" and drops the dirt into a bucket. She repeats this action twice more, still smiling, and the music begins to play in the background.

00:02:20 Nevriya stands up while waving to the camera. I stand up with her, leaving the camera unsteady, and she smiles and says, "Thanks!" while patting the dirt off of her knees. Louise and I laugh, the music rises, and the screen fades to black.

00:02:23 There is an ending statement in white text on the black screen, first in English and then in Turkish, stating:

> Archaeologist Nevriye does everything, she: excavates, prepares the barbecue, washes the clothes, cleans the corridors and assists the chef and anyone else who needs her. In short, Nevriye does everything….
>
> With regards and kisses,
> Nevriye

00:02:33 The statement disappears and "Thanks, Nevriye!" appears, in large white letters on a black screen, in Turkish.

00:02:36 The music ends, with the statement still on the screen.

00:02:43 The video ends.

Within the realm of archaeological videography, this video is short, not professionally filmed, and not particularly didactic. Though it shows a timeline of Nevriye excavating, with a clear start, middle, and finish, I would place it within the phenomenological genre of archaeological filmmaking. The film does not have subtitles, but it arguably does not require them, first because the film was made for a Turkish audience, and secondly the message of the film is communicated primarily non-verbally; that a non-excavating member of the Çatalhöyük team came onto site and excavated a context. The experience that Nevriye has is one that all archaeologists go through, that of learning how to excavate and how to "see" archaeologically. She is much more adept that I was when I started, and certainly more used to the physicality of life in rural Turkey. She removes the dirt to reveal a change beneath, with commentary and support from the more experienced archaeologists around her. One of the primary modes of conversation in the region is confrontational teasing and one-upmanship, and this was on display as she dictated the terms of the excavation from the trench (Tung, pers comm 2012). Finally, she reveals that there is no barrier to her participation on the excavation; she is certainly physically capable of performing the work, and she understands the underlying principles of excavation. For example, she clearly sees boundaries where she should stop and she sees small changes such as the trace amounts of ash. This short film begs the question, why are we not digging in the trenches alongside the local people? Could we foster a greater sense of community and connection by moving women out of the kitchen and into the trench?

Figure 5.16 The Building 49 excavation team

Multivocality

Bringing a video camera into the trench brought a certain amount of social stigma; nobody really wanted to be filmed while excavating. After a couple of weeks, Dan and Louise became a little bit more used to it, and each of us took a turn filming. The footage was informal, but if any one of us expressed displeasure in being filmed, we would be respectful and not film. The camera was always on site, charged, and waiting to come out of the bag; while I was the one that brought it on site, Dan and Louise felt comfortable taking it out of the bag without asking and filming. There were only three of us, and while Dan was the trench supervisor, there was not a sense of formal hierarchy unless Excavation Director Shahina Farid or Project Director Ian Hodder came around. Yet an archaeologist with a video camera is a person with a video camera, "the camera becomes part of its user's identity an an aspect of the way he or she communicates with others" (Pink 2001:79). A reflexive use of the video camera in archaeological filmmaking requires a "need to be aware of how the camera and video footage become an element of the play between themselves and informants, and how these are interwoven into discourses and practices in the research context" (80).

Besides the Nevriye video, I have not since edited the footage I took in 2008, nor have I distributed it online. Editing and showing footage is another dimension of multivocality and consent. The inclusion or exclusion of footage during the editing process is highly subjective; while editing video in direct consultation with the subject of the film is ideal, often this is not the case. In her discussion of Lucia Nixon argues that the format of video enables greater multivocality, that "the structure of the film is the outcome of collective discussions (and of comments by audiences

on our earlier version), and the medium of film permitted us to present the plurality of voices that make up the survey" (2010:340). Yet while she was initially filming her footage, she reassured the rural people of Crete that they "were filming as part of a university project for educational purposes" and that they "had a serious commitment to understanding their world and that we were not profiting financially from them" (341). This footage then went on to being used by the Canadian Broadcasting Corporation, cut into an educational film that was sold by Oxford, then on Greek national television, all without mention of an initial screening for the people appearing in the film. Happily, the Sphakiotes were mostly pleased with the depiction of their lives, but the example of the Sphakia survey film illustrates the progression undertaken by film footage; the eventual destination and viewing audience does not necessarily relate to the intended audience or the filmmaker's initial purpose in capturing the footage.

Bringing multivocality into archaeological filmmaking requires participation, collaboration, and consent at all stages of the process. As my earlier description of the conversation with Roddy Regan illustrated, much of the video footage at Çatalhöyük was taken without the explicit consent of the subjects, edited without their participation, and then showed in venues far beyond their control, usually without the subject seeing the footage first. While this delay in distribution may have been an artifact of the affordances of the analog format of film, with digital video and personal editing software now available to filmmakers, there is no longer an excuse. During the 2007 field season at Çatalhöyük, Ruth Tringham and I held a small film festival to show the movies that we had made in the interim, including *Senses of Place at Çatalhöyük,* which compiled all of the interviews that I had collected during the previous year into a narrative regarding the construction of place by the site participants. Ongoing participation in media-making also requires continuity in site staffing. In a perfect world, movies would be made by iteration, during working hours on site, with the active participation of other team members to whatever extent they would want to be involved. The final issue within multivocality is consent, which I will cover in the next section.

Openness

After the very successful community day showing of *Nevriye Çatalhöyük'te kazı yapıyor,* I managed to get a moment of Nevriye's time once again. She told me (through Duygu) that she liked the movie very much and thanked me. As an aside I asked her if I could put the video up online. Nevriye suddenly got very serious and told me, no, I could not put the video up online. When I asked why she said that she didn't want her husband to see it, as he would think that it was not modest. I assumed that she meant the particular context of the video being online, not necessarily the content of the video, as the community had viewed it previously. The modesty of the local women who work at Çatalhöyük is only occasionally considered and as is the conservative, Islamic regional context of the excavation (Atalay 2007; Hodder 2009). The Çatalhöyük project operates under a Creative Commons Attribution Share-Alike license for their media, though the rights of individuals to be portrayed in association with the project are a given; when I inquired regarding Human Subjects Review for my research with images of locals, it was determined that this was not an issue as long as the subject was employed by the project, though it would be a "nice gesture" if we asked permission to use the images in other contexts. Though I did not have to respect Nevriye's request, I promised not to post it online.

Beyond the consent of a single person to be filmed, many archaeological films incorporate media, whether images, music, or footage, that is taken from other sources. The attitudes toward this remixing of previous media sources is changing, though most media are still locked in with ironclad

copyright claims. One example of the change of attitudes is the shift of YouTube; pirated content was rampant during the early years of YouTube, followed by a series of media take-downs, and now when YouTube identifies licensed audio content in a video, the company does not take the video down but adds advertising to it and the option to buy the song. Giving credit to the previous media producers who made the content you are remixing can be listed in the credits, but it is still an extremely complex copyright issue to navigate. Further, many of the formalized archaeological films are still being released and distributed through ethnographic film companies or publishing companies who ask exorbitant prices on the assumption that the only buyers are academic libraries. The libraries respond by disallowing the use of these films outside of the classroom or the media center, further limiting the audience for the films. While archaeological content on television is certainly democratizing (Ramsay 2007), the parameters of what could be considered entertaining on television exclude more phenomenological and experimental films.

A final option is to only incorporate media that is openly available to use, to distribute archaeological film content online, under a Creative Commons license, when possible. Best practices of this kind are taught to the undergraduates taking Ruth Tringham's classes at the University of California, Berkeley, but otherwise this kind of media literacy is difficult to find amongst archaeologists. While organizing a major conference for a large archaeological organization, posters were made with photographs without obtaining clear copyright from the photographers that took the photographs, and they had to be scrapped and remade. The issues that become obvious when discussing videography in archaeology points to a larger issue of media literacy amongst archaeologists, even as the digital age is changing every aspect of our profession (Tringham 2009).

After finishing my research I was back at Çatalhöyük in 2011, passing through on my way to Ankara. I was happy to see Nevriye and the kitchen staff again, after I had given them a sad goodbye in 2009, thinking that I would not see them again. Nevriye told me that "I was one of the good ones," the gist of which I actually caught as she squeezed me repeatedly. I settled into a corner of the seminar room, determined to invisibly write my dissertation. I was reminded once again of the video on my hard drive, and arranged another viewing with Nevriye. She was relaxed this time, not anxious to see her visage on the screen and laughed at herself telling off the rest of the kitchen staff. She asked for a copy of the video again, and this time she had a DVD player at her home that she could view the movie on. As I burned another copy of the DVD, I asked her once again, may I put the video online? She blinked and said, "sure, no problem."[11]

Examining the place of digital video within archaeological methodology through this very short and extemporaneous video reveals the changing practices, modes and audiences of archaeological film. The devices with video capabilities are diversifying; DSLR cameras, cellphones, and video cameras are all brought into archaeological field work, and short clips are appearing on social media networks, dedicated blogs and video hosting services in astonishing quantities. Developing a framework of genres that can incorporate the growing diversity of these videos will help understand these videos within their context, but will also challenge filmmakers to break the boundaries between genres and perhaps evade classification altogether. Even while the quantity and quality of archaeological videos is ever increasing, attention to issues of consent, surveillance, and reflexivity can add to a more robust and emancipatory videography in archaeology.

[11] The video is still not online, as I would like to subtitle it for English audiences and I no longer have a valid license for Final Cut Pro to cut the original files.

Chapter Six: At Least Three Stories: A building at Çatalhöyük in Second Life

Figure 6.1 Building 79 at Çatalhöyük

The trench in front of me was a riot of reds, oranges, yellows, and bright white plaster, a bright, fiery swirl in the dusty brown excavation area (Figure 6.1). Jumbled mudbricks slumped against the western wall and a strange yellowish conglomerated lump melted into a mess of building collapse in the middle of the room. The eastern edge of the building wasn't visible; the room had been left partially unexcavated to keep the huge section rising high above our heads safely stepped in case of collapse. This building, Building 79 (B79) had been burned, burned spectacularly, collapsed, and then crushed and leveled by people building another building on the same footprint. As we methodically removed the collapse, the newly excavated burnt architecture would look glorious and vivid for a short while, then fade into the same dusty browns surrounding the building. The collapsed mudbrick showed an array of wood impressions and molded pise-like mud plaster forms—solid architectural elements that formed a complex puzzle that we had to try to piece together. The yellowish lump in the middle of the structure turned out to be a collapsed wall. After these layers were removed, the lead excavator of the building, Daniel Eddisford, realized that the next layer of collapse was the roof, a roof that appeared to have a floor collapsed on top of it. There were substantial architectural elements on top of the roof, elements that would have supported a second story for the building.

There were at least three stories in this burned house. One, the structure that we were currently excavating, what might be considered the basement of the building. Two, the structure that

was on top of the roof, solidly built from mudbrick. Third and most speculatively, the roof on top of the second story might have also been used, as it was thought that the Neolithic people of Çatalhöyük used the top of their buildings to work and socialize. But what did B79 look like? How did the original inhabitants interact with the space? In the months following the 2009 excavation season, Daniel Eddisford and I reconstructed B79 on a place called Okapi Island [1]in a virtual world called Second Life. The virtual building and the actual building were deeply dissimilar. The smudgy warm colors of burnt mudbricks and rounded surfaces resolved into flat colors and hard edges, rendered in the basic graphics of virtual worlds. Still, working together, we built a virtual building that showed us how the architecture of the burned building might have worked and how the residents of the building may have moved around in that space. But in reconstructing the burned building we made a new, albeit virtual space. Even as we were reconstructing B79 I wondered what relationship this virtual building had with the actual building and what exactly it meant to re-inhabit this Neolithic structure as a virtual space. In this chapter I investigate the complex relationship of this virtual reconstruction to the actual burned building, revealing tensions in virtual embodiment and archaeology, the houselives of virtual reconstructions and how to accomplish an emancipatory strategy for 3D reconstructions in archaeology. First, however, I will provide a background of virtual reality in archaeology, with a special emphasis on interactivity in reconstructions.

Virtual Reality - a background

Virtual reality has been a popular visualization tool within the realm of archaeological computing, as evident from the number of books, journals, and conferences dedicated to the subject. Though often presented as a single entity, virtual reality represents more of a spectrum, from the fully immersive environments famously posited in William Gibson's Neuromancer to the space "where you are when you're talking on the phone" (Rucker et al. 1992), that is, not quite in the room where you are now and not with the person to whom you are speaking, but somewhere in-between (Mirzoeff 1999). Goldberg (1998) further disambiguates this concept by contrasting virtual reality with what Pat Gunkel terms as "telepresence;" with the distance between being divided by a "deep chasm" (33). This difference has also been characterized primarily as a contrast between image-based immersive environments as opposed to virtual networks, which are text based (Lister et al. 2002:35). An extensive examination of the techno- logical, the visual, and the artistic foregrounding of virtual reality is outside the purview of this chapter, but a brief outline of this mixed lineage situates virtual reality as it is used in archaeology.

The origins of the technology of immersive virtual reality can be traced to Sutherland's experiments in generating a virtual flight simulator (1968). He succeeded in presenting a Cartesian grid to subjects wearing a "head-mounted three dimensional display", a "concept of space which is historically and culturally specific to Western art and science" (Lister et al. 2002:114). The actual term "virtual reality" was first used by Jaron Lanier in 1979 (Goldberg 1998:33), but the concept was most vividly brought to the public's attention by the cyberpunk genre of science fiction, in which characters negotiated realities so immersive that actions inside the virtual world would physically affect their real bodies (see William Gibson, Rudy Rucker, and Neal Stephenson among many others). This early, ambitious envisioning of a complete virtual world inevitably led to disappointment and disillusionment with the idea as the real world implementations failed to meet the hyped expectation. One historian of visual media describes first becoming aware of an increasing

[1] OKAPI stands for Open Knowledge and the Public Interest, a University of California, Berkeley based research group for faculty, students and staff.

divide between hype and reality at an 1989 SIGGRAPH industry event where virtual reality was being discussed at many panels. At one of the panels, Jaron Lanier described virtual reality as being "an open world where your mind is the only limitation", however the subsequent demonstration of a two-player virtual reality game of squash, was a "very poor illusion of 'reality'" (Woolley 1992:14–15). The rhetoric of the event and of virtual reality in general was overblown, though, as Woolley notes, the technology of the first television broadcasts and films were similarly crude. These early developers, working in 'blue sky' environments, were not subject to academic controls and formed a community of entrepreneur technologists more akin to an artistic movement (18).

This enthusiasm for virtuality was matched in the public sector after the 1992 release of Lawnmower Man, which dramatized a 'cybersex' scene, where the virtual bodies of the man and the woman involved became abstractions that melt into each other, while their physical bodies remain separate (Manovich 2001:110–111). When this eventuality was not immediately available, the hype waned in the face of a more accessible, if arguably less immersive technology: the World Wide Web (Hillis 2006). While the promise of virtual reality (VR), that is, photo-realistic, full sensory immersion, has not been immediately forthcoming, it has elicited a tremendous amount of attention in public and academic realms. The origins of conceptual VR are seen as coming from different sources; Jonathan Crary cites the camera obscura as an object which originally intended to stimulate philosophical reflection and speculation on the nature of perception and knowledge, the external world, and the eye and the brain, rather than a curiosity that simply produced images like a camera without film (1990:29). Others have likened VR to "stepping through Alberti's window" (Robins 1996), a reference to a 15th-century perspectival painter; being swallowed by television (Dery and Lamantia 1993); or to "passing through the movie screen to enter the fictional world of the 'film'" (Morse 1998). In this context, VR seems to be less of a "radical break" in the history of art and technology than a continuation of existing historical trajectories (Lister et al. 2002:125).

Telepresence, or virtual reality that originates from online, text-based networks, is more closely related to the literature-based genre of hypertext and is more broadly used than immersive virtual reality, yet it remains, for the most part, under-theorized. Early ventures into the world of text-based telepresence include interactive fiction games, wherein computer users explore worlds described textually with commands such as "run" or "open the mailbox" to solve mysteries or complete journeys. Following these early adventures were Multi-User Dungeons and MUD Object Oriented (MUDs and MOOs). These are text-based adventures that many users can access simultaneously, adding a level of interactivity between players and their environment. Within the larger field of virtual ethnography there are a number of studies of MUDs (Hine 2000) that explore identity building in these online venues (Bassett 1997; Kendall 1998). These text-based games are not the only examples of telepresence; additional instances of socially constructed worlds are online communities such as The WELL and chat-rooms (Hine 2000), yet I would argue that these operate outside of a simulated landscape and are further away on the spectrum from immersive virtual reality. MUDs and MOOs are more directly connected to later Massively, Multi-player Online Role-Playing Games (MMORPGs), a large genre in the computer gaming industry. Most of these gaming formats remain largely unexplored within academic archaeology, with the exception of Second Life, which is covered at length later in the chapter.

Virtual archaeology

Virtual reality in archaeology, or "virtual archaeology" (Reilly 1990), encompasses the modeling of landscapes, excavations, buildings, cities, and environments built with a variety of

computer applications in order to test scientific questions, communicate impressions of the past to others, and invite outside participation in the construction of the past. Virtual reconstructions of the past have been compelling for archaeologists as a method to capture the interest of a public who wanted, in their perception, to relive the past as accurately as possible. From the full-color, oversized text, Virtual Archaeology: "The object of this book...is to offer to the reader the most faithful re-presentation of the ancient world possible: highly realistic information and with a high scientific content" (Forte and Siliotti 1997:10). The book provides a long list of virtual reconstructions of archaeological sites built in the mid-1990s, though the term "virtual" in this context is used very loosely to describe any site that has been reconstructed by digital means. Like the main body of research in VR, virtual archaeology can be divided into immersive and conceptual categories. The Southampton York Archaeological Simulation System project (SYASS) attempted to produce "the archaeological equivalent of a flight simulator" (Reilly 1992:163), which allowed students to experience an excavation before performing these destructive techniques on site. Unfortunately, without experience at an actual site, students had a hard time grasping excavation concepts such as 'context, spit, phase, horizon, and locus' (see also Benko et al. 2004).

In another project in 1997, Frischer established the Cultural Visualization Lab at UCLA where archaeology and digital modeling were taught simultaneously, but for the most part, during the 1990s, archaeologists were not involved in many of the archaeological reconstructions, wherein "rarely, if ever, are we told who made the model, whether there was any consultation between the modelmaker and the archaeologists, and what elements of the model are known with certainty and which are hypothetical" (Frischer et al. 2002:10). Efforts to recreate Pompeii, for example, were seen as "disturbing, and uncanny, sometimes cheesy and slick" and the touted verisimilitude was absent, as "painted panels along the periphery of the reconstructed sanctuary were unsettling to many precisely because they had been filched from other Roman cities" (11). For all the realism the reconstructions intended to convey, most models were clean, well lit, and utterly depopulated. The user could then "fly" through the model, traveling at speeds optimal for disguising crude graphics, but that no actual inhabitant of these cities would have experienced. After this criticism of virtual Pompeii, Frischer's team (now called the Experiential Technologies Center) has created an uncanny, slick, digital Rome where the user "flies through" column-lined streets.

The broader shift in virtual reality research from immersive to conceptual VR is also apparent in the changes in archaeological reconstruction projects of the late 1990s and early 2000s. The goggles and gloves of immersive VR were seen as too restrictive and bulky and graphics rendering was still too primitive and unwieldy for broad use (Kantner 2000). And while there is some attention to theoretical concerns (Goodrick and Gillings 2000), sustainability (Krasniewicz 2000), transparency (Lock 2003), and pedagogical usefulness (Slator et al. 2001; Terras 1999), most reconstructions of sites were built without clear archaeological goals and questions in mind. Ultimately, immersive VR in archaeology stalled, and while some archaeologists attributed this to misconceptions about technical difficulty and expense (Goodrick and Earl 2004), it can more likely be attributed to the rise in interest in the World Wide Web and the shift in perceptions of virtual reality due to the growth of pseudo-immersive gaming worlds where users can directly interact with the environment and with others to build online social systems. In 2003, Gary Lock defined much of the terminology within 3D modeling (152-154) as well as noting the extreme positivism attending most virtual reality reconstructions in archaeology (264). While much has remained the same since his publication, I will provide a non-comprehensive, brief overview of 3D reconstruction venues and tools to contextualize the technology available at the time of the B79 reconstruction. Notably missing from this discussion is photogrammetry, a technique that makes 3D models out of rectified photography,

as it is more a projection of existing archaeology than a reconstruction. Nor will I discuss the reconstruction of specific artifacts through laser scanning and 3D modeling. There are also many tools and virtual platforms that are obsolete and no longer exist, I will not be addressing them.

Virtual Reconstructions

Virtual archaeological reconstructions can be grouped into two categories: the first is primarily an illustration, built to display the configuration of past remains and the second is interactive in that an avatar can be used to manipulate and navigate the landscape. Many of the former category, illustrative reconstructions are done for publication or presentation and rely on proprietary software such as 3ds Max and AutoCAD. These powerful applications can model, animate, and render archaeological artifacts, architecture and landscapes, but are navigated through manipulation with a cursor or are used in a fly-through animation during which the viewer cannot change perspective. While reconstructions performed with proprietary software are undoubtably the most photo-realistic, with smooth rendering allowing for dramatic shifts in lighting and realistic movement, and cinematic scenes. Sketchup, an extremely easy to use architecture modeling program is free at the basic level and has open media format outputs, but again is ultimately proprietary. Using Sketchup is tempting as it is compatible with many of the Google tools that archaeologists use, such as Google Maps and Google Earth and allows users of the software to make their recreations publicly accessible, increasing the potential audience for these reconstructions. While Sketchup allows a limited "walk-through" mode, this is similar to fly-throughs that are possible with the aforementioned software. Yet there are no guarantees with Sketchup either; developers of the software can change the functionality wildly, limiting its long-term usefulness for archaeological reconstructions. In the move from Sketchup 7 to Sketchup 8, the functionality to import CAD .dwg files was removed and made only available to Sketchup Pro software users, at a premium of $495.00. An under-utilized Open Source program in this same genre is Blender, a complex 3D rendering suite. While the barriers to full realization of all of these more complex software packages are equally high, Blender has a strong Open Source community committed to keeping the software and the media outputs viable and open, whereas proprietary software has no such guarantees.

Virtual Communities

The second form of virtual archaeological reconstruction takes places within a virtual world that is inhabitable by more than one avatar at a time. These are sometimes called multiuser virtual environments, or MUVEs (Schroeder 2011). In an attempt to sort the scores of virtual worlds into meaningful categories, Constance Porter established a typology of virtual communities, listing five attributes that can be used to characterize virtual communities: purpose, place, platform, population interaction structure and profit model (Porter 2004). Further refinements to this typology include the categories education-focused, theme-based, community-specific, children-focused, and self-determined virtual worlds (Messinger et al 2009). While these are useful sub-categorizations for determining the tenor and context of interactions within each world, the most important metric for virtual worlds for archaeological reconstructions is the extent that the world allows users to modify the appearance of the landscape. Virtual worlds that allow users to build independent content within them are called "sandboxes."

The oldest, still active example of these sandbox-type virtual worlds is called Active Worlds. Launched in July of 1995, Active Worlds is a Windows-based platform that was originally conceived as an alternate web-browser (Hudson-Smith 2002; Schroeder 2001). While other virtual worlds

emphasize the appearance and interactions of avatars, Active Worlds emphasized environment building. The appearance of the baseline avatars could not be changed until 2008, and remains more limited than other worlds. The environment building was primarily confined to using set pieces provided by Active Worlds, and creating unique content was difficult (88). The virtual world of Kaneva is a similar concept to Active Worlds, but emphasizes the integration of social networking media. The building system remains relatively primitive, and the user base is small. The Instant Messaging Virtual Universe (IMVU) is a virtual world that is structured around online chat enhanced with avatars that have a limited range of motion but are highly modifiable. The environments that the avatars chat within can also be modified, yet IMVU remains unexplored for virtual archaeological recreations. There are no in-world tools to create environments in IMVU, but IMVU supports importing environments made in 3ds Max, which is used for many archaeological reconstructions.

Twinity also allows 3ds Max files, along with other formats to be imported into their virtual world, a world that was initially modeled on real world cities. Twinity's emphasis on real world replication extends to avatars—Twinity encourages their users to use their real name and gender[2] and provides software to make an avatar-copy of a photograph of yourself. Twinity's environment is room-based like IMVU, which would allow for limited architectural reconstructions—unless the archaeological site exists within a city, and then it may be possible to model the excavation, but not the reconstruction of the former architecture. Unfortunately Twinity has an uncertain financial status and may not exist long enough to invest time into the project. This is an ongoing problem with commercially-based virtual worlds; there is a limited audience for them and a high degree of obsolescence. Many of the older, still-active worlds such as Opencroquet, Project Darkstar/RedDwarf, Digitalspace Traveler are still in existence because they are based on Open Source software and do not have the considerations of a profit-making company.

A notable recent addition to existing commercial virtual worlds is Minecraft, a sandbox game with both single-player and multi-player modes. Minecraft has become incredibly popular since its release in 2009. While the game play mode of Minecraft challenges players to collect resources and survive, there is a creative mode that allows players to create relatively elaborate structures and landscapes by manipulating simple block forms. Many of the larger ancient architectural "wonders" have been recreated in Minecraft, such as the Ziggarat at Ur, the Sphinx, and the temples at Teotihuacan. These monumental structures are well-suited to reconstruction with the block forms of Minecraft; more complex or subtle architectural detail is not possible at this time. The avatars of Minecraft are also extremely simple and blocky, much like the landscape. Still, with the wild popularity and relatively low cost of the game, building within Minecraft could be attractive to archaeologists who want to emphasize outreach over verisimilitude. Minecraft manages to integrate the sandbox elements of the game with quest elements, placing the virtual world in a spectrum that is gaining more notice and participation from other MMORPGs. There has been a great increase in MMORPGs that allow greater freedom in user-created content; an exhaustive list of such games and their relative environmental modifiability is outside the purview of this dissertation.

Though all of the mentioned virtual worlds have in-world 3D modeling capabilities, none of them have been used by archaeologists for archaeological reconstructions. Many contain monuments such as Stonehenge or the Egyptian pyramids and some allow avatars to dress up as

[2] This particular feature proved to be unpopular with Second Life transplants who were used to be able to change genders as easily as they could change their clothes.

archaeologists and play archaeology "mini-games" that generally involve looting treasure, but each of the worlds have aspects that would be detrimental to reconstructions. Most of the virtual worlds have relatively primitive building capabilities, such as the ability to create and modify objects but not the ability to change their textures or color. Some of the worlds restrict building to within a room setting, which would not allow larger architectural reconstructions. Many of the worlds require knowledge of Autodesk 3ds Max[3] (for brevity, 3ds Max) for more complicated construction. While 3ds Max is popular for archaeological reconstructions, it is still relatively difficult to learn and expensive to purchase. Finally, these virtual worlds were relatively unknown in broader academic literature. The first sandbox world to gain broad interest in the academic realm was Second Life.

Second Life debuted in 2003, the creation of San Francisco based company Linden Lab as a place "where people could build whatever they liked, and become whoever they wanted" in an environment that was "more like a public park" than the more rigid, story-driven, persistent MMORPG-based worlds of online games such as World of Warcraft and Everquest (Guest 2007:51–52). Since 2003, Second Life has grown to include over 15 million "residents" or uniquely named avatars with 83,000 of these residents owning almost 2 trillion square meters of virtual land. While owning land requires a premium membership with a monthly fee, basic membership is free and accessible to computer users with advanced graphics systems and a high-bandwidth internet connection. After downloading the game software and creating an avatar through a relatively complex interface that allows the user to control all aspects of their online geometry (including relative eyebrow height, placement of the ears, and shoe size), Second Life is open to exploration by walking, running, driving, flying, or teleporting between areas. Most of the content in these areas is created by the user community and sometimes sold to other users, which has led to the development of a complex in-world economy that has a real-world economic impact due to dollars spent by individuals and corporations who want a presence in the world. The development of Second Life continues, with new releases adding features like voice chat, which allows users to actually speak to each other, instead of communicating by typing. These features have not only proven attractive to corporations, but also to nonprofit and educational entities. Formerly, academic entities had access to the building tools of Second Life through a significantly discounted land-use rate, but the discount ended in 2011, effectively ending the in-world presence of many of these institutions, including Okapi Island.

Some of the institutions that had a presence in Second Life that were displaced by the end of the educational pricing scheme found a home in OpenSimulator, more commonly known as OpenSim. OpenSim was developed to be closely linked to Second Life, but with Open Source software. This software must be installed on a server and then can be linked to other OpenSim worlds. The development of OpenSim is done non-commercially, therefore the graphics and other features of OpenSim are less elaborate than those of Second Life. While free and open source, building within OpenSim requires not only skill using 3D modeling tools, but also advanced knowledge in administering and maintaining a server. Without constant vigilance, these servers quickly become compromised by hackers. This barrier has proved to be considerable and many educators have opted to either disband their Second Life research or pay the additional fees required by Linden Labs, rather than move to OpenSim. As previously mentioned, Okapi Island was within the virtual world of Second Life from 2007 until 2012. After the rates raised for academic institutions, we endeavored to transplant the contents of the island to OpenSim, but this effort ultimately did not succeed. I will cover the reasons for this later in the chapter.

[3] Formerly 3D Studio Max.

Figure 6.2 Overhead shot of Building 79

After a week of carefully removing the layers of melted and burned debris, shapes were beginning to appear beneath our trowels (Figure 6.2). The interior of the room began to take form. As we methodically took away the bright orange and yellow crumbled mudbrick, the top of a strangely

formed pillar became clear, and then another matching pillar with a cap in what should have been the middle of the wall. These features did not appear to have a structural function, as they did not support weight, but were decorative features. Three large, gaping pits where there appeared to be pillars removed from the western wall did suggest that they were there for structural purposes. There was also a bright red seam along the east-facing wall. The eastern edge of the building was in the section and remained unknown. What looked like the corner of a quern stone remained in the rubble on the central floor until it was time to excavate that context. A very excited undergraduate student revealed a stone statue of a bearded figure sitting on a chair. Finally, when all of the rubble was gone, we were left with a grinding stone installation in the southern extent of the building, a bin full of burned grain on the north wall and northern and southern platforms. This was the last occupation surface under the collapse.

Building 79, while having a few interesting artifacts and architectural details associated with it, was not a particularly unique building at Çatalhöyük. The walls stood higher than many of the previous buildings excavated by teams working under Ian Hodder, but even this aspect was soon eclipsed by the building directly to the west, Building 80. The detail of the pillar caps had not been found by the Hodder team, but while Mellaart did not explicitly address the pillar caps, he had them in his building reconstruction illustrations, suggesting that he had found similar details. The red seam along the western wall was easily eclipsed by entire red walls and complex paintings found in other buildings. Burned buildings were also not a rarity; two had been excavated before and one was currently being excavated in the north area of the site. All around B79 were other spaces and rooms being excavated—a cellular lattice of mudbrick dwellings, dusty and close in the afternoon heat. The details that were emerging under our trowels were part of a larger pattern and hardly unique, but they were still intimate to us, part of our experience of place, of dwelling at Çatalhöyük. The Neolithic building under our trowels, the hard bunkbeds back at the dig house, the fires on Thursday nights, the path around the eastern mound and the hot bus ride to Konya all contributed to a sense of place at Çatalhöyük (Tringham et al 2007; Tringham 2012).

While virtual Çatalhöyük on Okapi Island could not mirror the experience of being an archaeologist excavating at Çatalhöyük, it is inextricably tied to "real world" Çatalhöyük through a series of complex relationships. In examining the connections between a "real world" and a "virtual world" or the "original" and the "simulacra" (Baudrillard 1994) I cannot hope to describe the totality of phenomenological experience at either of the Çatalhöyüks, but I can attempt to provide comparative details of the relationship between the two worlds, a relationship Baudrillard describes as a collapse between signifier and signified. Deleuze argues that "purely actual objects do not exist" as they surround themselves "with a cloud of virtual images" (148). The "mutual inextricability" between virtual and actual objects allows the virtual objects to react upon the actual objects (149), causing an oscillation, "a perpetual exchange between the actual object and its virtual image" (150). Splitting actual and virtual Çatalhöyük is disengenious; the actual Çatalhöyük that I am comparing the virtual Çatalhöyük with is gone—archaeology is particularly apt at methodically destroying the actual in favor of the virtual. Virtual Çatalhöyük did not just exist in Second Life on Okapi Island, but exists in the photographs, videos, 3D models, laser scans, paperwork, and other archival materials. Still, separating the two helps us understand virtual archaeological reconstructions and how they double or diverge from the actual object.

Actual Çatalhöyük

The twin tells of Çatalhöyük rise from the Konya Plain, divided by a thin, dry Carsambra riverbed. In the summertime when the archaeologists are on site the grass on the tells has dried to a yellowish-brown—golden against the bright blue sky. But the tells are not always so, in the spring they are verdant green, and they are covered by snow in the wintertime. Still, they loom large and golden in the imaginations of hundreds of migrant archaeologists, accompanied by a drowsy, low locust buzz. These tells were formed by people building houses out of mudbricks, knocking them down, and building on top of them again, often on the same architectural footprint (Hodder 1996). After two millennia of repeated episodes of building, destruction, and re-building in these places the eastern tell covers 13.5 hectares and rises 21m from the surrounding plain, while the smaller, lower western mound is 300m to the west, covering 8 hectares. The eastern mound has earlier remains on its surface and this attracted the attention of James Mellaart. The story of a "bright, sunny morning in November, 1952" (Mellaart 7:1978) has been recounted (and dramatized) in accounts by Michael Balter (2005) and Ian Hodder (2006). Mellaart dug an enormous 80m x 80m trench in the south side of the eastern tell, revealing 12 layers of occupation and many dwellings that he called shrines with fantastic murals, figurines, and human burials inside the platforms on the floor (Matthews and Farid 1999). After coming under scrutiny for contact with a possible illegal antiquities dealer (Balter 2005), Mellaart had to stop work at Çatalhöyük. After years of exposure to the elements his excavations became overgrown and filled with colluvial sediment, masking the trenches. When anthropologist David Shankland asked how this 1960s-era research on the tells effected the small village of Kucukkoy, he received a "laconic 'Hiç Yok!' (Not at all!)" (Shankland 1999). Other than leaving a large scar on the side of the tell, Mellaart left few traces in the landscape aside from a guard house for a local watchman and a fence around the site to keep away the sheep (143).

A slim, tree-lined dirt track branches off the tarmac road from Kucukkoy, following the dry bed of the Carsamba between the two tells. Mellaart's fence surrounds the east mound. The old guard house, formerly the only modern building on the site, now has several other buildings around it. After years of relative inactivity at the tells, in 1993 Ian Hodder's team of archaeologists descended upon Çatalhöyük. During the first two excavation seasons the team stayed in Cumra, a larger town about 10km from Çatalhöyük. In 1995, builders came to construct the new dig house but first they built a small brick outbuilding for them to live in while they worked on the larger residence. This building, called "The Chicken Shed" by team members was used later as storage, a lab, a residence, and a bar. The dig house was built in three phases over three years, eventually housing a team that grew to 150 members at the height of each excavation season. Mellaart's former trench was re-opened and a large structure was built to protect the renewed archaeological excavations. Sadrettin Dural, a longtime guard at Çatalhöyük built a cafe across the road from the guard house, amidst a garden that a former guard had planted there. Temporary structures were built to shade archaeologists up on the tell, including a semi-permanent tent covering the Berkeley Archaeologists at Çatalhöyük (BACH) team excavations. This tent was later moved to cover Building 5, an area that was left unbackfilled for visitors to view when the excavators were not on site. A small colony of tents spring up between the dig house and the western fenceline, housing the overflow of archaeologists. There is a house garden to the north of the dig house, where peach trees and tomato vines grow.

Hodder (1997, 2000) has encouraged a multivocal, reflexive engagement with the interpretation of Çatalhöyük, and to further this project, invited Ruth Tringham to excavate onsite in 1997. Tringham and the Berkeley Archaeologists at Çatalhöyük (BACH) continued to work at Çatalhöyük until 2005, excavating and digitally documenting a single structure, producing several short films,

publications, websites, and a vast media database in the process (Tringham 2004, 2005; Tringham 2012, printed and digital editions). Mirjana Stevanović and Ruth Tringham completed an experimental mudbrick house near the entrance to the site in 2000 (Stevanović 2012). A large, permanent, clamshell-shaped structure replaced the tents over the former 4040 area. Several smaller buildings were built behind the dig house for artifact storage, and the Chicken Shed was demolished to create more room for such a building. The old guard house was also demolished and replaced. Beyond these buildings there are large agricultural fields, irrigation canals, and a large water tower to the northeast of the site. From the top of the tell you can see these field stretch for hundreds of miles across the plains, and Hasan Dagi, a ragged volcanic peak rises far to the southeast.

The modern built environment at Çatalhöyük has changed rapidly since Hodder reopened excavations on the tell. The dig house has been the temporary home of hundreds of archaeologists doing research over the years, with each of them leaving their mark in some way, whether on labels or in a trench, and the stories surrounding the excavation accumulated just as the official publications multiplied. I worked at Çatalhöyük from 2006-2010, a relative latecomer to a project that had already run for over a decade. As I was initially working on Ruth Tringham's Senses of Place project, I was perhaps more intimately aware of the personal and experiential aspects of working at Çatalhöyük. After conducting video interviews with many of the archaeologists on site regarding their sensual memories of place, that is, what Çatalhöyük smelled like, what their daily round entailed, and what color Çatalhöyük was to them, I became aware that the site participants had not only a strong sense of place (Tringham 2012; Tringham et. al 2007) but also a feeling of dwelling at Çatalhöyük. As Paul Oliver defines it, "dwelling is both process and artifact. It is the process of living at a location and it is the physical expression of doing so" (1987:7). The structures at Çatalhöyük, the research that was being conducted there, and the relationships that people formed around this enterprise created this sense of dwelling, a home away from home.

The sense of dwelling at Çatalhöyük was enhanced by the "low road," modifiable quality of the buildings such as the Chicken Shed and the Experimental House (Brand 1994). While archaeologists could not change or personalize the "high road" purpose-built buildings such as the dig house or the protective shelters over the archaeology, the previously mentioned "low road" buildings were considered unimportant and therefore used as a supplemental work place, informal discussion areas and a creative outlet to decorate during parties. The utility of "low road" buildings is in their mutability; Stewart Brand (1994) has productively contrasted the ability for people to work and live in "high road" and "low road" buildings, with the latter being more flexible and freeing (24). These "low road" buildings are also comparable to the Neolithic building style at Çatalhöyük; while each house was confined within a footprint, from our excavations we know that the interiors were cut, re-molded, ovens moved, and bins and curtain walls torn down and redone. The experimental house provides a central focus for visitors and academics to imagine themselves dwelling at Çatalhöyük, and the interior has been re-plastered and re-painted many times. There have also been experiments with making the oven work, only one of which was successful (Eddisford and Regan 2011). The shaft of light coming from the roof inspired a shadow puppet film called "Shadow-hoyuk" (Tringham 2009). While the experimental house still stands, the Chicken Shed has since been torn down, ending the use of the space as a creative laboratory. The extent to which the destruction of the Chicken Shed was mourned by the team shows how central the space was to the informal, social life of the project. While subsequent team members will surely find their own sense of dwelling, the loss of the modifiable, free space left the team bereft.

In focussing on the recently built environment at Çatalhöyük I have deliberately avoided describing Neolithic life and architecture. While we encounter Byzantine and Islamic burials in the

surface layers of the tell, the Neolithic remains at Çatalhöyük is the raison d'etre for the project; there are several volumes and hundreds of articles recording the details of the site. This massive amount of literature, combined with personal digging experiences at the tell, allowed us to build interpretive structures that represented a large amount of research regarding the lifeways of the Neolithic people. Building virtual Çatalhöyük exercised our knowledge of the Neolithic but also pushed our interpretations beyond the comfortable realm of black text on a white screen. A comprehensive overview of this literature is outside the scope of this dissertation—relevant citations will be given in the text referring to virtual interpretations of lifeways and architecture of Neolithic Çatalhöyük.

Simulacrum Çatalhöyük

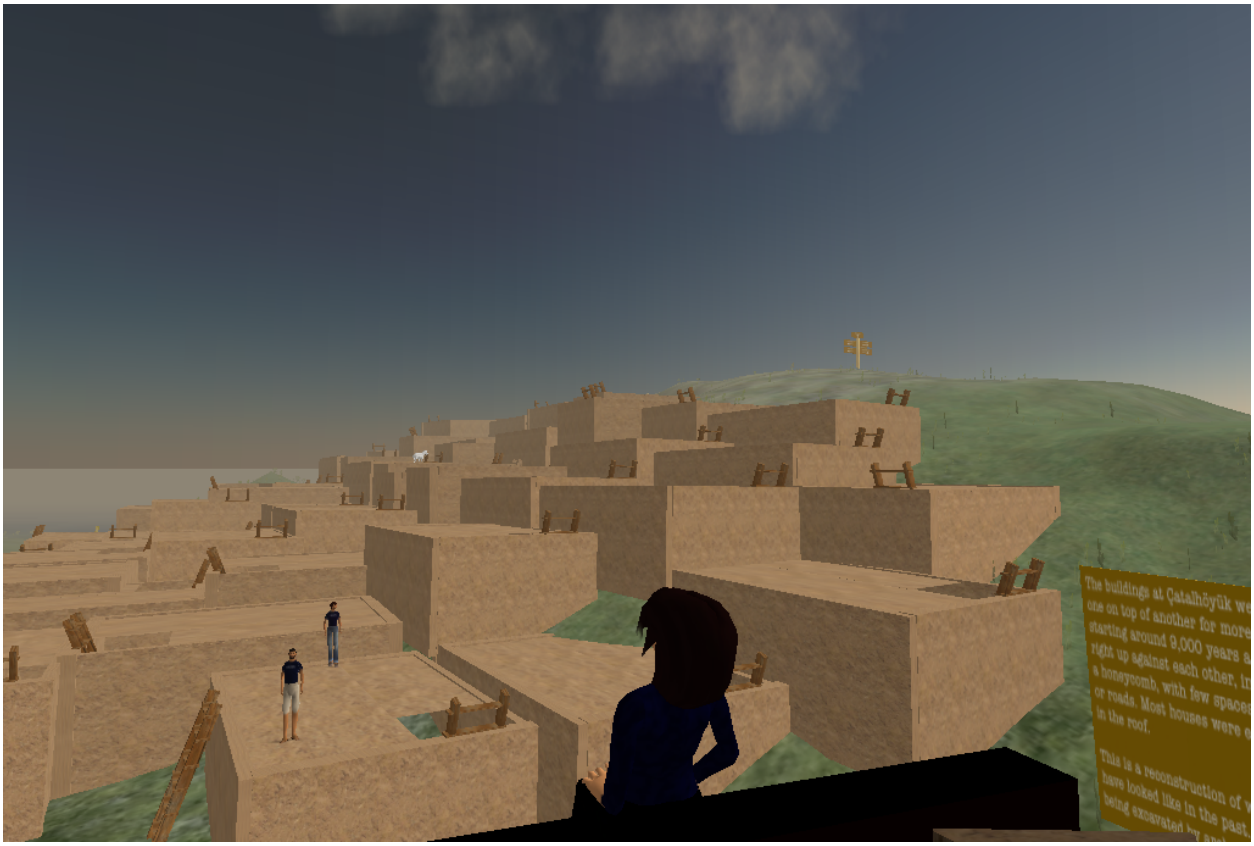


Figure 6.3 Early screen shot of Çatalhöyük in Second Life

Okapi Island in Second Life was at first a flat, featureless, green square in the middle of pixellated blue water. Ruth Tringham, Noah Wittman, Lizzy Ha, and a group of undergraduate and graduate students at UC Berkeley terraformed the land to approximate the dimensions of the East mound at Çatalhöyük and placed a reconstruction of Mellaart's excavations on the southwestern side. Okapi Island developed out of the Remixing Çatalhöyük project, which was the source of much of the island's reconstruction (Figure 6.3). Most of the reconstruction team had never visited the site and were not archaeologists or archaeology students and while Ruth Tringham and Lizzy Ha had both excavated at Çatalhöyük, they did not work in Mellaart's area. Instead of reconstructing the Neolithic architecture on the Northern side of the mound, a structure resembling the tent that the Berkeley Archaeology at Çatalhöyük (or BACH) team was erected with a photograph of the open

excavations on the ground. A site museum was set up in the flat area to the northeast of the mound and an area that allowed non-members of the island to build and modify objects, what Second Life members call a "sandbox." The sandbox caused no end of trouble for the Okapi Island staff, as will be discussed below. There was also a small screen that allowed photographs from Flickr that were tagged "Çatalhöyük" to appear in-world. Finally, a large screen was located to the southwest of the tell where we screened movies. Though I had familiarized myself with Second Life in 2006, my initial involvement with Okapi Island came with the first event, an open house for the island. I noted that there was not a place for avatars to congregate so I bought a bonfire through the Second Life marketplace and placed it on the top of the mound. After the event concluded, our avatars sat around the fire and we felt a strange sensation—many of the avatars belonged to people who had worked at Çatalhöyük, but were now scattered across the globe. We had sat around the actual bonfire with the real people behind the avatars and now we were virtually reenacting these earlier encounters. This social gathering was the aspect of Okapi Island that Ruth Tringham found the most interesting, whereas the simple act of placing the bonfire appropriately and creating the mise en scene of an archaeological site is what motivated me to become more involved with Okapi Island.

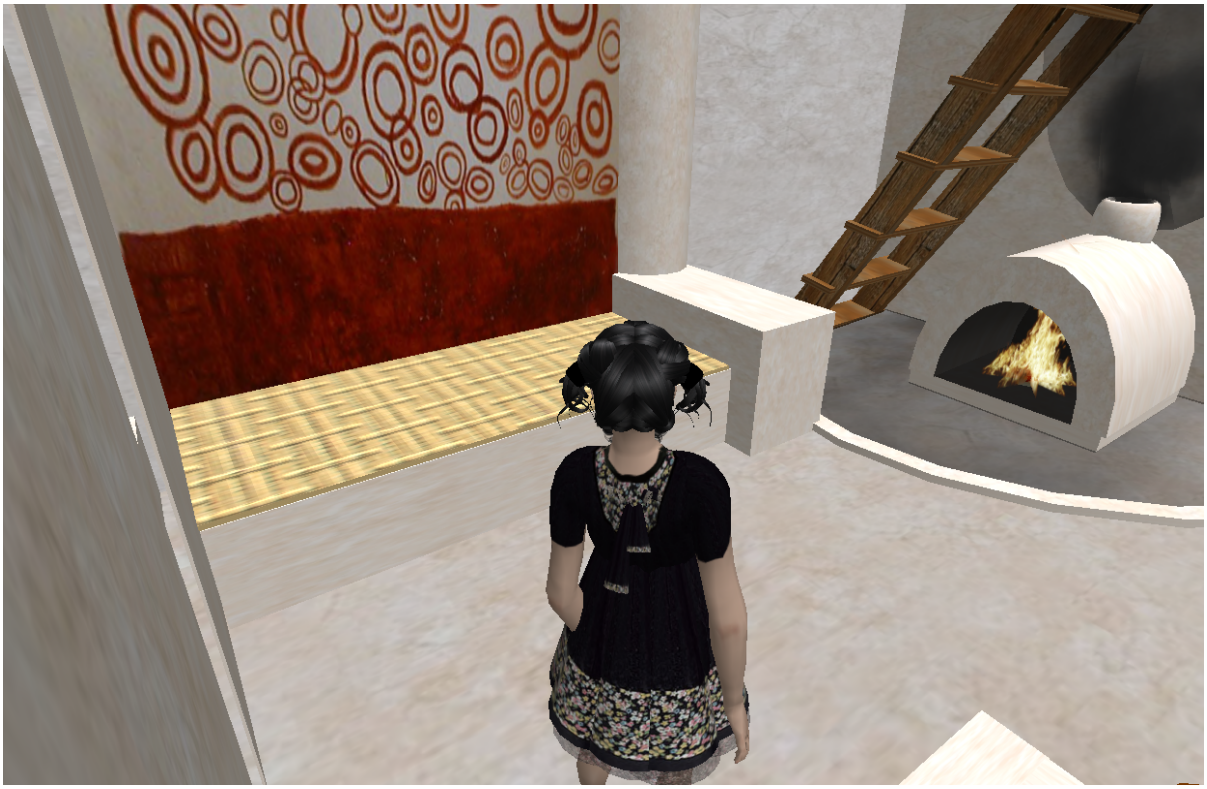


Figure 6.4 Interior of Çatalhöyük building in Second Life

After the open house event I decided to recreate the interior of one of the structures at Çatalhöyük (Figure 6.4). I based my reconstruction on a generalized house plan of excavated buildings; most buildings had ovens adjacent to the wall on the south side, a ladder up the wall over this oven, and platforms on the eastern and northern edges of the building. I added a few baskets, a wall mural, and an animated fire with smoke in the oven. While the problem of the ovens at Çatalhöyük is well known on site (Stevanović 2012) it was possible to recreate the oven in several different forms and I was intrigued by the possibilities of the virtual world to provoke questions

about the archaeological record (Morgan 2009). This initial foray into building was a fascinating exercise as an excavator, modeling features that I have methodically deconstructed over the years. The process of opening up the room led to several interesting archaeological questions. For example, after virtually plastering the interior of the reconstruction house, the sun set in Second Life, filling the house with evening light, illuminating the walls. The light soon became too dark to correctly model the platform I was working on, and I had to start considering the in-world time of day when choosing visual aspects of the reconstruction. As another example, when Ruth Tringham wanted to find the house containing the reconstructed room among the dozens of nondescript, light brown structures, she wondered how people in the past might have distinguished between house exteriors and especially how each of the dwellings would be identified from the outside if one were unfamiliar with the community. This relatively limited exploration of the building tools available in Second Life encouraged further experimentation with presenting archaeological interpretations situated within a larger virtual world. It also provided insight into the goals and the methods of virtual archaeology, and into problems that are usually ignored in the implementation of these interpretations.

Figure 6.5 Interior burning at Çatalhöyük in Second Life

When the original OKAPI island team of students and technical staff did not reassemble after the first year, a small, dedicated team of URAP (undergraduate research apprenticeship) students continued to work on the island. From 2008-2010, URAP students and I greatly enhanced the island. We retextured the terrain from the basic Second Life green to reflect the yellows and browns of the mound during the dry summertime, adding plants, fences and pathways that made the mound eerily verisimilar to people who had seen Çatalhöyük in real life. We added a large swamp and the river Carsambra to the west, a source of game animals and materials to the Neolithic inhabitants of

Çatalhöyük. We added more realistic mudbrick textures to the Mellaart reconstruction, and covered the island in snow and icicles, as none of the researchers had actually experienced winter in Konya and therefore most of the recreations (and the thinking of the archaeologists) was based on their experience of the hot days and cool nights of the Anatolian summertime. More room interiors were reconstructed and we endeavored to make simple changes, like the ladders from the lower rooms all coming out at the appropriate angles. We populated the island with the animals that we knew were there from the archaeological record, including owls, rats, dogs, sheep-goats, water birds, vultures, pigs, and an auroch in the swamp[4]. While there was an ambient soundtrack of Turkish music on the island for the opening day, it was replaced by a mix of sounds from sheep, pigs, cicadas, and other sounds that would have not been out of place in the Neolithic at Çatalhöyük. Working closely with Karl Harrison, a forensic anthropologist specializing in the analysis of fire scenes and burning, we showed the burning sequence associated with Building 77 (Figure 6.5). We were unable to animate the sequence so we improvised: using four adjoining rooms on the northern side of the Mellaart reconstruction we showed the same room in four stages of burning, carefully replicating the conditions that Karl Harrison outlined regarding the intensity and duration of the blaze.

Figure 6.6 View of the dig house at Çatalhöyük in Second Life

Along with these additions to the reconstruction of the Neolithic era of Çatalhöyük, we added more modern-day structures to the island (Figure 6.6). We recreated the entrance to Çatalhöyük, complete with the dusty dirt road, the entrance gate and signage. Across the road was Sadrettin Dural's shop where the archaeologists get soft drinks and ice cream after work, the experimental Neolithic house (a virtual reconstruction of an on-site experimental reconstruction—sadly we did not play with this concept of a simulacrum within a simulacrum), and finally the dig house quarters and the Chicken Shed directly to the east of the dig house. The bonfire was moved to this location,

[4] I never could find a sisluk—a groundhog that burrowed through all of the archaeological remains and were the bane of the excavators.

and remade entirely to appear more like the weekly bonfire that is lit on Thursday nights at Çatalhöyük. The dig house interior was never finished, but the seminar room where I spent most of my time working was replicated, along with the terrace and the area where tents were set up for the overflow population from the dorms. I added a water tower in the northeast corner and power lines leading to the dig house, as these figure prominently in the low skyline of the site. In this, I was recreating the most important parts of Çatalhöyük according to my own experiences there; a bioarchaeologist would have certainly recreated the bone lab, while one of the site cooks[5] would have perhaps recreated the kitchen and the small room at the top of the stairs where they would nap in the afternoon.

Recreating the dig house was an incredibly detailed and difficult undertaking; the architecture, while initially designed by an architect, was essentially vernacular, with odd angles, and unexpected dimension changes between different portions of the building. Just as reconstructing archaeological architecture led me to new questions about the past, reconstructing standing architecture made me observe it more closely, and think about recording aspects of it should there be any changes. When Daniel Eddisford and I found out that the Chicken Shed was slated for demolition, we performed a standing buildings survey on the structure, fully documenting the dimensions, construction, varied use and phasing of the building (Eddisford and Morgan 2011). The dance floor, bonfire, and Chicken Shed were all important areas to the excavators employed at Çatalhöyük; these were areas where the social boundaries between specialists, students, and staff could be relaxed. These areas served a similar function in Second Life, and our subsequent in-world events generally closed with all of the participants dancing on the dance floor.

Reconstructing the modern built environment in addition to the ancient environment both decentered the authority of the depiction of Neolithic Çatalhöyük and provided a virtual sense of place for past and present participants in the excavation. Providing a holistic meld of the current appearance of the archaeological site along with more fantastic reconstructions/constructions of the Neolithic past at Çatalhöyük is a means of showing reflexive authorship; the site of the production of archaeological knowledge is presented along with the results of the research. To address the virtual "sense of place" that was created at Okapi Island it is important to go beyond a sense of verisimilitude achieved by a hyper-real environment (Forte 2009). Archaeologists make a temporary home of "the field," annotating the place with both physical modifications and with the stories that they document, either by retelling the stories or by recording them and replaying them with multimedia tools.

The connective tissue between virtual and actual Çatalhöyük for archaeologists is clear through their experiences with the actual place and their interactions with archaeologists whom they have met there, but the reconstruction on Okapi Island also incorporates the experiences of people who have never been to actual Çatalhöyük, yet feel connected to the place after working on enhancing the environment or even merely experiencing the recreation. I argue that this connection is achieved in the three following ways: first, by building on Okapi Island, students are reliving the experience that archaeologists have when they modify the landscape with their trowels; the act of creation creates this connection with the place. Secondly, the community that comes with collaborative building, which will be expanded upon later in the chapter. Finally, beyond the act of creation of objects on the site, the person can position themselves in respect to the reconstruction, and incorporate elements of the reconstruction into their online personhood (Figure 6.7). This latter

[5] Perhaps Nevriya, from the previous chapter.

element plays with the emerging genre of self-photography enabled by ready access to digital cameras, yet is set within a virtual world.

Figure 6.7 Avatar at Çatalhöyük in Second Life

Two of the three elements require building access to Okapi Island, access that was strictly limited outside of the confines of the sandbox. The sandbox allowed a certain amount of self-expression in regard to the site; one day as I was cleaning up—returning stray motorcycles, coca-cola bottles, and other elements that were unrelated to Çatalhöyük content, I noticed a large representation of the famous figurine of a large woman seated between two leopards had been copied from the site, enlarged, and then a small votive offering was left in front of the figurine (Figure 6.8).

Figure 6.8 Offering left for "goddess" figurine reconstruction at Çatalhöyük in Second Life

Avatars - embodiment in virtual archaeology

Why should our bodies end at the skin, or include at best other beings encapsulated by skin?
Donna Haraway, A Manifesto for Cyborgs

Figure 6.9 Clementine Glass, Colleen Morgan's Second Life avatar

Even as we consider the archaeology and architecture of the virtual world, we must attend to our embodied experience of this space. In his consideration of photography, Roland Barthes states that landscapes "must be habitable, not visitable" (1980:38). When he sees "an old house, a shadowy porch, tiles, a crumbling Arab decoration, a man sitting against the wall, a deserted street, a Mediterranean tree" he wants to live there, and is imbued with "a kind of second sight which seems to bear me forward to a utopian time, or to carry me back to somewhere in myself" (40). Yet Barthes "cannot penetrate, cannot reach into the Photograph" as it is "flat, platitudinous in the true sense of the word" (106). In virtual reality the visual representation is arguably penetrable, and this is certainly true for virtual reality as it was first envisioned as a fully immersive environment. With the shift from full immersion with its attendant headgear and gloves to telepresence enacted behind a computer screen, our habitation of virtual places is more ambiguous; yet even the move from typewriters to computers can be seen as immersive. Similarly to Barthes' description of photographs as "flat", N. Katherine Hayles describes the experience of typing on a typewriter: "one keystroke yields one letter, and striking the key harder produces a darker letter. The system lends itself to a signification model that links signifier to signified in direct correspondence, for there is a one-to-one relation between the key and the letter it produces. Moreover, the signifier itself is spatially discrete, durably inscribed, and flat" (26), whereas using electronic media allows Hales to write "in a medium as fluid and changeable as water". Following Allucquere Roseanne Stone, Hayles proposes that we think of subjectivity as a multiple warranted by the body rather than contained within it" (27).

Though telepresence can give rise to corporeal multiplicity, this multiplicity is not stable; experiences of virtual archaeological reconstructions are not homogenous and can vary widely on a

spectrum between Barthes' designations of "habitable" and "visitable." While some archaeological reconstructions are "visitable," the occupant has no connection with the reconstruction as a place, cannot inhabit the world. This sense of involvement has been called "immersion" in studies of video games. When Brown and Cairns (2004) attempted to define the concept of immersion, they found three levels of involvement with rising intensity. The first level, "engagement," has a great deal to do with the gamers' preferences and willingness to invest time, effort and attention into playing the game (1298). The second level is engrossment, which relies on the construction of the video game (1299). At this level of engrossment the gamer has invested a large amount of time, effort, and attention into the game and this is reflected in their emotional investment; gamers "want to keep playing," their "emotions are directly affected by the game" and they can feel "'emotionally drained' when they stop playing". Finally, what Brown and Cairns call "total immersion" causes the gamers to be "cut off from reality and detachment to such an extent that the game was all that mattered. Crucial to this sense of "total immersion" was a need for empathy for the characters and the relevance of the construction atmosphere of the game—a sense of mise en place.

Building on this qualitative work are quantitative studies that use "electroencephalography, electrocardiography, electromyography, galvanic skin response and eye tracking equipment" to measure the bodily responses of gamers during game play (Nacke and Lindley 2008:81). Correlating the information collected by the monitors of valence and arousal with self-reported subjective experience, Nacke and Lindley found that more challenging game play caused "joy" more often than victory or success (86-87). Even with increased knowledge of elements within 3D environments that afford the sense of immersion, the specific attachment of a gamer with a game is deeply subjective as it depends partly on how much the gamer decides to invest in the game. Even so, archaeologists have not explicitly engaged with any of this knowledge of gaming or immersion while building their virtual reconstructions. To create reconstructions that are not just "visitable" but "habitable" requires more attention to and interaction with both the wider gaming literature and with the potential audience for the reconstruction. This is particularly remiss in light of recent intense interest in embodiment in the archaeological literature.

Though the topic of embodiment has received considerable attention in archaeological investigation (Joyce 2005), the concept has not informed research on virtual archaeological reconstructions. Importantly, both Rosemary Joyce (2005) and Lynn Meskell (1999) cite Elizabeth Grosz's definition of a body as "a concrete, material, animate organization of flesh, organs, nerves, skeletal structure and substances, which are given a unity and cohesiveness through psychical and social inscriptions of the body's surface" (Grosz 1995:104) and Meskell makes the crucial point that "the body is not tantamount to embodiment" (1999:36). The elements that Meskell suggests as the related experiences of embodiment include the materiality of the body, but also noting that "for some the body is not skin-bound, but may connect to other bodies, ancestors, spirits, and so on" (37). I would add to this the corporeal plurality that can be evoked by total immersion in a virtual environment. I argue that approaching virtual reconstructions while attending to a fully embodied experience can decenter previously established narratives about the past and contribute to a feeling of connection and participation in constructing the past. But a fully realized, theoretically informed, immersive archaeological reconstruction is still difficult to achieve, especially with the limited funding and resources that characterize archaeological digital media work.

Critics of virtual archaeological reconstructions have called them "slick and uncanny" (Frischer et al. 2002), have accused them of utilizing "the *appearance* of many voices and multiple stories, while subtly undermining the presumed power of multivocality to contest dominant

narratives" (Silberman 2008:139) and a causing an interpretive crisis - "the illusion that the model is real can lead to a lack of critical awareness about the process of interpretation on the part of the viewer" (Tringham 2009). Responding to each of these criticisms of the use of virtual reconstructions can seem like an impossible challenge on the part of the creator of virtual reconstructions. Recommendations regarding how to address these criticisms include making a "provocative, uneasy coexistence of alternative interpretations and significances…the kind of fascinating and often maddening confusion and crossed-purposes characteristic of Robert Altman's films" (Silberman 2008:141). Another suggestion is to have a "philologically edited CVR model explicitly marked up" indicating where there is incomplete or insufficient data to make an accurate projection (Frischer et al. 2002). Neither of these suggestions incorporated or discussed the avatar of the gamer as a stakeholder and potential site of engagement.

A consideration of avatars in virtual archaeological reconstructions is important in any project that hopes to include an emancipatory, multivocal, and reflexive approach to constructing 3D models. As used on the internet, avatars are representations of an individualized presence on the internet. While graphical representations are common, textual descriptions such as those used in MUDs (Multi-user Dungeons) and MOOs (MUD, object oriented) are also considered avatars.[6] The creation of avatars has come under scrutiny, primarily by Lisa Nakamura who notes that "when users create or choose avatars on the Internet, they are choosing to visually signify online in ways must result in a new organization and distribution of visual cultural capital" (Nakamura 2008:17). The construction of avatars is often normative, privileging young, white, skinny and often male representations of people. Still, in spaces that are created for and by women and marginalized online communities, Nakamura shows that avatar-making fits into "the sense of a shared obligation to contribute to the formation of a visual habitus, a beautiful home or room online, as a major responsibility that attends membership in this online community" (146). In making avatars, the online participant is helping to create the visual landscape, even if the surrounds are not directly modifiable. While it could be argued that a cursor arrow is a form of embodiment in navigating virtual landscapes, research into role-playing games such as "first-person shooters" wherein your "see" through the eyes of your avatar, suggests that adding your avatar's limbs into your sight-lines enhances the feeling of immersion into the game. In contrast, Tom Boellstorff makes the argument that immersion can also be caused by sociality, that the "striking graphics and creative possibilities" in a virtual world are secondary to understanding immersion in social terms (2008:115). Salen and Zimmerman term this the "immersive fallacy" that "the pleasure of a media experience lies in its ability to sensually transport the participant into an illusory, simulated reality" (2004:450) whereas immersion should be framed more as a co-created state wherein the participant is able to negotiate, manipulate, and communicate as they will.

Immersion by co-creative sociality has implications for avatar use and creation within archaeological reconstructions. In MUVEs, avatars are created with the intention of interacting with other avatars in some way. These avatars "provide access points in the creation of identity and social life" in order to more "fully inhabit the world" (Taylor 2002:40). Avatars are used "to greet, to play, to signal group affiliation, to convey opinions or feelings, and to create closeness" and their "bodies root us and make us present, to ourselves and to others" (41). In addition to the concept of immersion, researchers of virtual worlds also use the concept of "presence" to describe interactive experience; the term copresence relates to the sense of "being there" comes not just embodied

[6] For an interesting discussion of the history of the avatar in MUDs, MOOs, and other online communities, see Tom Boellstorff's 2008 discussion.

practice but as a result of embodied social practice (Schroeder 2002:4). While our attempts to reconstruct many architectural aspects of Çatalhöyük satisfied my interest in enhancing the virtual built environment, more attention to creating social spaces and providing more consistent interaction with archaeologists and students that made Okapi Island could have enriched the immersive potential of virtual Çatalhöyük for non-members.

A consideration of avatars came relatively late to our experimentation with Çatalhöyük in Second Life. Most of the initial participants in the creation of the island used the stock avatars provided by Second Life with little modification. These participants were primarily students with a short-term, semester-long commitment to the project. Later, when students engaged with the medium for multiple semesters, there was a shift in their avatars' appearance to a more personalized look. In most virtual archaeological reconstructions, the user is not allowed to choose their own identity or appearance. Their individual perspective is made generic, a sideline to the main attraction which is the reconstruction itself. In Second Life, users can change gender, height, age, and ethnicity as easily as changing clothes, and many of them have several different "skins" that they don for different occasions. Much of the Second Life market appeals to this impulse, with customizable nuances such as eye color, nail polish color, and other minute aspects of avatars. The basic, ready-made avatars that were used by our students are disdained by much of the Second Life population. While this may seem a pointless and frivolous aspect of online interaction, many users see it as a lack of commitment to the medium.

Participation in the larger community of Second Life is an important part of interaction within the world, and elaboration of the basic avatars is an indication of interest in the platform (Messinger et al 2008; Garau et al 2003). Moreover, the manipulation of avatars teaches basic building and in-world object manipulation, an important first step in becoming conversant with operating within Second Life. Most full-sized avatars cannot fit into the storage rooms at the reconstructed houses at Çatalhöyük, but children have no problem going inside and squeezing in the small spaces between some of the houses. In Roma, the large online reconstruction of Classical Rome, new users are encouraged but not required to don free togas and sandals. Much more than this simple costume play is the ability to embed actions into costumes and objects. While wearing an object, the avatar can perform certain preset actions that they would not be able to do without the object. A mano and metate, if activated, causes the avatar to sit down and start grinding at the stone. Trowels and sieves allow the avatar to excavate, accompanied by ongoing commentary—a train of virtual thought about the process—as the avatar finds pieces of plainware in the soil. Using programmable objects such as the previously mentioned mano and metate allows avatars to act as their own guides to the past, populating the re-created ancient landscape with avatars of people interested in the past, interacting with artifacts and taking on roles suggested by these artifacts. This is simple for archaeologists who are accustomed to telling stories through objects and adds another level of interactivity to the virtual reconstruction. Still, it was only in the third year of development that I made the first Neolithic-style clothing for Çatalhöyük in Second Life.

Figure 6.10 Clementine Glass, wearing the "skin" of a Neolithic inhabitant of Çatalhöyük

The first set of virtual clothing developed was crude, yet it introduced new questions to the interpretation of the material record. In contrast to artistic reconstructions, Second Life does not allow for obscurity in relevant details. Decisions about footwear, body markings, and necklines force the archaeologist to reconsider details about daily life and practice in the Neolithic. Add to this a seasonal element, and the complexity is dramatically increased. The avatars must negotiate the virtual landscape in their clothing, piloting boats, gathering willow branches, and tending fires, adding explicit considerations of maneuverability and visibility to the interpretation. While recreating one of the famous leopard-print bandeaus of Çatalhöyük, it occurred to me that what appears to be leopard print in figurines, may instead represent the repeated pattern of a stamp seal, applied to fabric (Figure 6.10).

Figure 6.11 Neolithic clothing developed by Allie Habeeb

Allie Habeeb, a gifted digital artist and UC Berkeley undergrad, created a second, more refined set of clothing and we made it available to visitors to the island (Figure 6.11). The clothing was also used to costume students for a machinima—a movie made entirely within the virtual world of Second Life. I will discuss this machinima further in the concluding chapter, but elaborating the process of costuming ourselves can further the discussion of embodiment, avatars, and archaeology.

Figure 6.12 The many iterations of Clementine Glass.

The development of my avatar followed the progression of my involvement in Okapi Island in Second Life (Figure 6.12). I participated fully in the 1980s-present emergence of video games, in their console form, then on computers with Interactive Fiction games and early Role-Playing Games, and then in online games such as MUDs and MOOs, moved through the more complicated and interactive console games, but as I was entering college I eschewed the Massively Multiplayer Online Role-Playing Games (MMORPGs) as I was afraid that they would take away from my studies. I still played the complex and immersive RPGs that came out on both consoles and computers, such as Neverwinter Nights, Dragon Age, and the Final Fantasy series, but I hesitated at joining the move to MMORPGs as the social immersion was not something I sought from a game-

playing experience at the time.[7] After reading about it online I joined Second Life in 2006, before the Okapi Island project, made a basic avatar (the stock avatars were not available yet) and explored the world. Like many other early experimenters with Second Life, I did not find the experience particularly compelling; I much preferred the complex, gorgeous, "complete" worlds of RPGs. Later, when I organized and hosted an in-world film festival on Okapi Island, I decided that my avatar needed to dress appropriately. Using currency gained on Second Life through regularity of logging in (at that time it was 5 Lindens per day), I purchased hair, a dress, and shoes. These items were made by people who had mastered the Second Life building system, and often spent hours on a single, custom item. As Boellstorff notes, self-expression in Second Life is tied to capitalist consumption, a "creationist capitalism" that drives the Second Life political economy (2008:118). My avatar's clothing was relatively cheap and I kept my original skin and shape. The process of modifying the hair I bought to fit my avatar was difficult and I would not master fitting the various objects to my avatar until much later on. After I started building and adding to the Okapi Island landscape, I refined my avatar even further, adding a shape and a custom skin. The shape file controls the proportions of the avatar and the skin covers the shape of the avatar. Custom-made skins and shapes are often superior in detail and are more realistic than the appearances that are available through the Second Life avatar creation process.

As noted previously in Nakamura's work, the process of creating Second Life avatars is extremely normative. Most female avatar shapes are thin and well-endowed and male avatar shapes are lean and muscular. There are virtually no older avatar skins, and the children avatars are closely monitored for inappropriate behavior.[8] After I found a shape and a skin suggesting a short, full-figured, elderly woman and dressed it in our Çatalhöyük Neolithic clothing—one of the bandeaus and a loincloth, such as suggested by the "goddess" figurine found by Mellaart, I was shunned and denigrated by the wider, non-Okapi Island Second Life community. To have the ability to be normatively and superlatively gorgeous and choose to be other than such was seen as degenerate and aberrant behavior (Boellstorff 2008:136; 145-146). After playing my part in our machinima, I quickly changed back to the avatar appearance that I was more accustomed to, the avatar that I saw as reflecting me in Second Life, albeit this avatar being a thinner, more attractive, and more tattooed version of myself. Though this avatar could change quite a bit, adding skins that were impressionistic or twisted goat horns or wearing elaborate togas, I still felt there was a persistence and inner logic of selfhood that was utterly absent when wearing the shape and skin of a Neolithic mother goddess. Users of avatars in virtual worlds are more fully immersed when their bodies "feel right" and allow them to "construct, express, and perform the identity they are seeking" (Taylor 2002:52). Some users feel as thought their avatars are "truer" reflections of themselves, as "'more them' than their corporeal body" (54). This sense of identification did not necessarily imply that the avatars looked anything like the users controlling them; Ruth Tringham's avatar had green skin, a trait that she was loathe to lose, even when asked to change to a more Neolithic shade for a machinima. Yet Ruth's avatar represented her in-world self so evocatively that she started using the representation in other media, for lectures and on her Facebook wall (Figure 6.13).

[7] As Tom Boellstorff writes, "There is a need for a theory of cybersociality that takes into account how some people enter virtual worlds to be left alone. (2008:125).

[8] Linden Labs has an "ageplay" policy that strictly prohibits 'participation by Residents in lewd or sexual acts in which one or more of the avatars appears to represent minors." Even so, when I went looking for child shapes for the children portrayed in the machinima, associated content was often disturbingly close to child pornography.

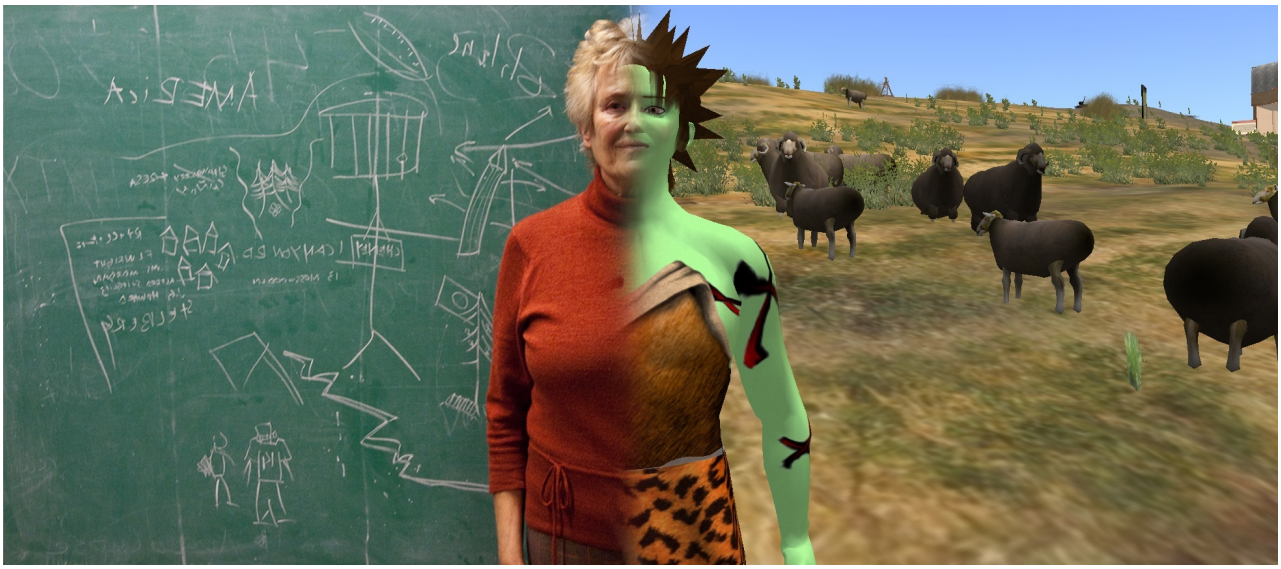


Figure 6.13 Ruth Tringham in two worlds

In instances of actual and virtual copresence wherein users of Okapi Island were online together but also in the same room, relationships and authority were immediately reconfigured. There were students who were more competent at building or at other aspects of Second Life and we looked to them to teach us how to negotiate the virtual world. Changing clothes was also awkward, as the realistic skins that we bought for the machinima often had secondary and sometimes primary sex characteristics. I added a "dressing room" space inside the Chicken Shed to avoid awkward naked encounters with students. The avatars became inextricably an extension of ourselves, but also obscured traditional classroom interactions. I have argued for the non-inclusion of Non-Player Characters (NPCs) in virtual archaeological reconstructions (Morgan 2009), yet donning the "skins" of Neolithic residents was extremely uncomfortable; even in situations when we had to "film" during consecutive weeks, many of the avatars chose to go back to their "normal" appearance in-between filming dates.

Avatars within virtual archaeological reconstructions remains a deeply under-investigated realm; as informative as we found Okapi Island to be regarding embodied interpretations of the past, there remains room to push the medium further. 3D reconstructions are becoming ubiquitous in presentations of the past, yet these remain for the most part de-peopled. As archaeologists become more familiar with the tools of 3D reconstruction and presentation, it is necessary to maintain a rigorous engagement with the ideas of presence, co-presence, immersion, and the depiction and maintenance of avatars to better move our sterile architectural shells toward a fully-figured and robust interpretation of the past. To directly engage with the idea of a emancipatory digital archaeology for virtual reconstructions, I now turn to specifically address the reconstruction of B79, attending to the four points considered in Chapter Three: context, multivocality, authorship, and openess.

Conclusions

Context

The computer screen goes black, then blue, then a dialog box opens:

Teleporting to http://slurl.com/secondlife/Okapi/128/128/0

Large blocky colors resolve into browns, blues, a smudge of white on the left side, some green straight ahead. A small jump and shift in perspective, then the pixellated colors become shapes, then objects, then a yellow sign appears:

< Çatalhöyük

You have been teleported to Çatalhöyük in Second Life on Okapi Island.

Figure 6.14 The entrance gate at Çatalhöyük in Second Life

When I decided to replicate the entrance at Çatalhöyük in Second Life, I was thinking of the bus loads of tourists entering the site through a small gate (Figure 6.14), of the local people who parked their motorbikes along the fence and hung out at Sadrettin's cafe, and of all the people who have studied this very site, most of them never seeing the archaeological site in person. I was

unceremoniously dumped out of a cab on a hot Friday afternoon, unsure of where I was, and dragging a bright red rolling suitcase. The wheels of the suitcase were riotously noisy; they ground and skipped along the rocky path to the suspiciously quiet dig house. I was nervous and excited and feeling very alone. A few people were sitting on the veranda, chatting on their day off. I paused at the entrance to the courtyard of the dig house, looking for the single person I knew. She wasn't there. I took a deep breath, smiled at my own nervousness, and went to join the group on the veranda.

I can not virtually reconstruct the close heat of that day, the smell of the dead and dying grass, the small push of courage it took for me to get out of the cab and enter a large, famous archaeological project, even as these black works on a white page can represent the full sensorial range of a moment. We do not yet have fully immersive virtual reality in any medium, but we can provide a structure for communicating these experiences while still allowing for new experiences to be formed. The front gate at Çatalhöyük provides an anchor for those who have entered the site through that rusty gate, but also as a means to orient virtual visitors. The entrance area is configured to evoke the feel of the actual entrance to the site and when I approach it I think back to that day in the cab and the attendant sensorial memories—it is a close enough simulacrum for a "sense of place," qualified by memory and deepened through imagination (Tuan 1977; Hillis 1999). It is not an exact replica and there are accommodations for virtual visitors who have never experienced the actual site. There are information boards that do not exist at the actual site, clothing boxes, and a place to leave comments about the site. These items provided a way for virtual visitors to interact with the site when there were no other avatars present. Many of the visitors to the site chose to post in-world photographs of their avatars and some aspect of the site, while others commented on their interest and engagement with Çatalhöyük or thanked us for the reconstruction.

Taking a cab and teleporting are dissimilar experiences; I wanted the visitor to the site to enter at the same point in virtual Çatalhöyük as they would in actual Çatalhöyük, to walk (or fly) past the experimental house, the dig house, the Chicken Shed, and then venture up the tell to the Mellaart area reconstruction, to the BACH tent, and perhaps down the eastern side to the museum and the sandbox. The southern side of OKAPI Island, on the edge of the Mellaart reconstruction was relatively out of the way for the site visitor, and that is where Daniel Eddisford and I placed the reconstruction of B79. In the initial stages of the reconstruction we kept the building separate, near the sandbox, but the standing structure looked lonely and improbable without the surrounding buildings. Compared to the entrance to the site, Building 79 is not so prominent of a place; few visitors to the site or even archaeologists have seen the building during excavation. The actual Building 79 still exists at Çatalhöyük; the architectural elements of the building and the last phase of occupation were revealed in 2010, but the building was then filled in with the remainder left unexcavated. Virtual Building 79 in Second Life was built in 2010-2011 and disappeared with the end of the island, but photographs of it taken in-world remain in the Çatalhöyük 2010 Archive Report (Eddisford 2010) and there are screenshots and in-world footage of the building. The location of the building in respect to the Mellaart trench was approximate, the reconstructions covered roughly the same area of the trench, but while B79 was farther east in reality, we chose to locate it farther west near a flat part of the tell for ease of reconstruction. The footprint of the building was similar enough that we were able to build it into the side of existing reconstructed architecture, architecture that had likely been removed in the years of Hodder's team excavating in the same trench. The object of the reconstruction was not necessarily correct phasing in regard to the buildings around it, but as the footprint of the buildings at Çatalhöyük do not vary wildly, so the

surrounding architecture could provide a good enough approximation for the purposes of the reconstruction.

Investigating the context of a reconstructed building in a virtual world can be a complex undertaking; an active reconstruction is not a *momento mori*, a captured moment that is sliced out and frozen in time such as a photograph or a film (Sontag 1977), but is a mutable, ongoing remediation of the past. Virtual worlds are more akin to a process that can yield photographs or videos, not a fixed and impermeable entity. I have provided the actual context of B79 in regard to the actual excavations at Çatalhöyük and the virtual world of Second Life, but there is a third context that is also important to scrutinize, that of the other reconstructions of Çatalhöyük. These reconstructions are comprised of a wide variety of media. The replica house at Çatalhöyük was built during three seasons from 1998-2000 to address questions regarding architecture, the Neolithic built environment, and the social organization required to perform the intensive labor required to construct a mudbrick house (Stevanovic 2012 447-448).

The replica house is located at the entrance to the site and is accessible to site visitors who can then better visualize the archaeological remains present on the site (468). The interior of the replica house has been periodically maintained and the murals found on site have been reproduced to scale on the walls. These fresh murals have been photographed and used in Okapi Island houses as they are not as degraded as the original murals. This replica house is the most immediate access for visitors as a physical interpretation that they can interact with and images of this house are often part of the photographic assemblage alongside photographs of the excavated remains of houses. The replica house has been used as a backdrop to a number of film, photographic, and sketched reconstructions, perhaps most famously in an episode of the British children's television show, *Blue Peter*. The replica house is seen as an authorized "true" reproduction of a Neolithic building, even though there are a number of discrepancies, in that it is an amalgamation of typical features of Buildings 1, 3, and 5 at Çatalhöyük. The replica house also includes a ground-level doorway and plaster consistency and texture differences that substantially affect the sensory dimensions of the reconstruction. Without signage or accompanying explanation there is nothing to decenter this authoritative interpretation.

Other material reconstructions of the architecture at Çatalhöyük include an extensive display in the Museum of Anatolian Civilizations, a temporary exhibit at the Science Museum of Minnesota, and a temporary museum display in Istanbul. The reconstructed room at the Museum of Anatolian Civilizations is based on James Mellaart's 1960s excavations and is likely the oldest of the material reconstructions. The building that holds the reconstruction dates from the 1400s and the room itself is domed, with a complex skylight that casts shadows over the reconstruction. The reconstruction is not accessible by visitors, offering a traditional museum tableau with buchrania, platforms, wall niches, and a sculpted "bear" from the site. The bear, the centerpiece of the room, looks shabby and out of place as it is one of the two elements of the room that comes directly from the site; the rest of the room is smoothly molded plaster. There is a window into one of the platforms where the other Neolithic artifact lies—a skeleton in a crouched position. This reconstruction also has the authoritative voice of an established institution behind the veracity of the interpretation. While it has been updated recently, the room retains its style from the 1960s date of installation and is both too large and too uncluttered to mesh with modern interpretations of the architecture at Çatalhöyük.

Another material reconstruction was shown in 2006 and 2007 in Istanbul as part of a Yapi Kredi (a Turkish bank). This exhibition showed smaller versions of the outsides of houses, including

roofs and ladders, as well as reconstructions that visitors could enter. Other features such as a buchrania-lined bench found by Mellaart were reconstructed and free-standing in the exhibition. Though the exhibition was temporary, it was on one of the busiest pedestrian streets in Istanbul, the Istiklal Caddesi, and garnered a large amount of traffic. Finally, a third material reconstruction was performed by the Science Museum of Minnesota in 2002. First a website and then a display titled *Mysteries of Çatalhöyük*, the exhibit was unique in that it situated the excavations in terms of the archaeologists working on site and did not attempt to reconstruct the Neolithic houses. The experience of living and conducting research as a modern-day inhabitant at Çatalhöyük was the main focus of the exhibition and to this end, the museum reconstructed the dig house veranda with a conversation amongst the excavation team at that time, as well as an excavation diorama with a similar conversation. Interestingly, the Science Museum of Minnesota also reconstructed the entrance to Çatalhöyük with the sign and a standee of Sadrettin welcoming the visitor to the site. To further contrast this reconstruction with those present in Ankara and Istanbul, the Science Museum of Minnesota also featured a modern kitchen where visitors were encouraged to contrast their modern diet to the Neolithic diet (http://www.smm.org/static/exhibitservices/Çatalhöyük.pdf). To date, these four are the main material reconstructions; after the inscription of Çatalhöyük in 2012 there is a larger museum planned nearby wherein more may be hosted.[9]

Reconstructions of Neolithic Çatalhöyük in other media include drawings, paintings, sculptures, and virtual reconstructions[10]. It is outside of the purview of this dissertation to examine each of these reconstructions, but I will address them broadly. Archaeological illustrators have been employed at Çatalhöyük during both the Mellaart and the Hodder excavation years. Nessa Leibhammer (2000) and John Swogger (2000) examined the role of visual images produced by artists on site, showing how "images do not only serve to illustrate texts but, in themselves, shape knowledge in ways of which the viewer, as well as the illustrator is often not aware" (Leibhammer 2000:129). The illustrators rely on "realism as a stylistic convention…based on a belief that a stable entity called the 'real' world exists and that it is possible to observe it and render it in aesthetic form" to lend credence to the reconstruction, though it relies heavily on the illustrator's imagination (137). Leibhammer singles out virtual reconstructions as having a "powerful appeal in the public domain" but lacking the introspection of personal interpretive drawings (139) whereas Swogger writes that these boundaries between media are artificial and can be destroyed by "redefining our understanding of what archaeological illustration is" (2000:144). The illustration process at Çatalhöyük is primarily performed on site and is informed not only by the archaeological finds and reports but by the impressions of the excavators and other staff. Swogger elaborates on the process of reconstruction as a "means for bringing together the wide and often confusing range of experiences, questions, analyses and interpretations" (147). Yet the danger of archaeological illustrations is that they are static, often even more static than publications and are not always updated as interpretation of buildings changes. This is true with material reconstructions to a certain extent, though the replica house at Çatalhöyük has been updated and changed throughout the years. Virtual reconstructions can mitigate the static nature of archaeological visualization, but only if the virtual environment is actively maintained.

While not as numerous as drawn illustrations, there have been several virtual reconstructions of the Neolithic architecture at Çatalhöyük. Martin Emele and his team published an account of

[9] There are also more esoteric reconstructions such as the representation of a Çatalhöyük house at the 2008 Beijing Olympics which featured a large, red, porous structure with Neolithic imagery.

[10] There have also been reconstructions in the form of cakes, bonfires, and textiles.

their reconstructions based on Mellaart's drawings and interpretations. One reconstruction can be accessed as a Quicktime VR movie on the Çatalhöyük website (http://www.Çatalhöyük.com/media/news_quicktime/catal.mov). Emele notes that his colleague, Burkhard Detzler, stated that the two-story room in their reconstruction was structurally impossible, yet the team decided to keep the reconstruction as it was to correspond with the Mellaart illustration (Emele 2000:223; Siliotti 1997). The reconstruction was originally created for a CD-ROM about Çatalhöyük and is difficult to view within Quicktime VR; the room is difficult to negotiate and the textures are shiny and bizarre. Yet this reconstruction was cited as so compelling that archaeologists working on site could "no longer see what is in front of them when excavating at the site" (Emele 2000:225).

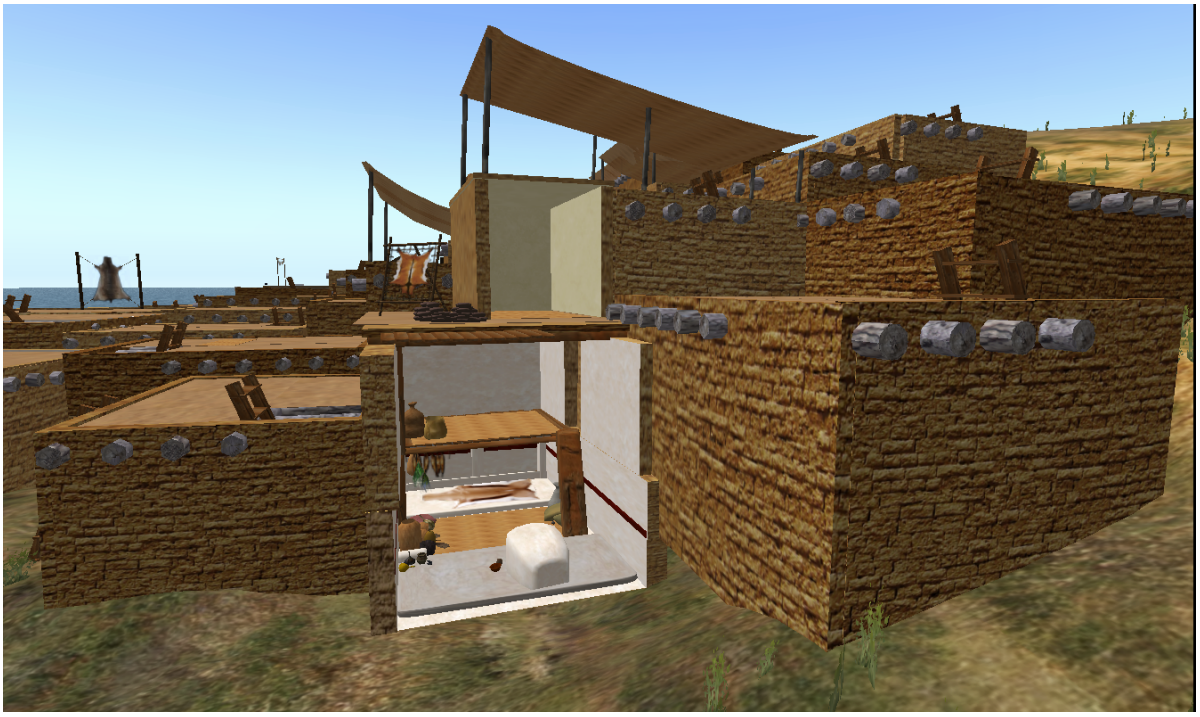


Figure 6.15 The reconstruction of Building 79 in Second Life, one wall removed to show interior

Our reconstruction of Building 79 was undertaken in multiple contexts; in the context of a simulacrum in Second Life partially based on actual material objects, as a reproduction of sensory experiences of the present site and reconstructed Neolithic experiences, and in a wider context of the previous reconstructions performed of the site in all media (Figure 6.15). After taking all of these other reconstructions into consideration, B79 on Okapi Island addresses some of the shortcomings present in virtual reconstructions, yet some issues still persist. As previously stated, B79 was not necessarily as static or monumental as illustrated reconstructions (Swogger 2000). After the initial Mellaart illustration was projected into 3D and placed on the model of the tell, the appearance of the buildings was continually modified over time, with second stories, mudbrick textures, roofing infrastructure, snow, and animals. Several of the structures were "burned down" and many received various interior remodels of the features. We reconstructed B79 toward the end of the uselife of Okapi Island and therefore the building did not receive as much modification as it could have, though we did reconfigure the building to display the architectural features and then filled it with artifacts that were indicated by the excavated remains. Still, after the demise of Okapi Island, B79 is

now only visible in the screenshots that were taken as part of the report on the building, bringing the problem of illustration full circle. Another problem identified with previous Çatalhöyük reconstructions was how sterile the buildings appeared (Emele 2000). B79 had more objects than previous reconstructions, and was set in a generally "messy" exterior, though we did not reconstruct middens, which is a telling omission (Figure 6.16). Finally, Hodder's desire to link the database to a virtual overlay was possible, though indirect. While Hodder's desire for virtual reality to serve as a non-specialist front-end for the archaeological database has been unrealized to date (Hodder 1997), a team led by Maurizio Forte has been experimenting with laser scanning during excavation. This does not provide direct reconstruction visualizations, but may enhance interpretation and understanding of the site. We were able to embed information in the reconstructions directly, with links to further data available to anyone who interacted with the object. It is possible to make the object "speak" to the avatar, but we opted for informative signposts when necessary. In the case of B79, we modified the final screenshot of the interior with labels of the feature numbers so that the illustration would link to the text describing the stratigraphy of the building (Figure 6.17).

Figure 6.16 Interior of Building 79 reconstruction in Second Life

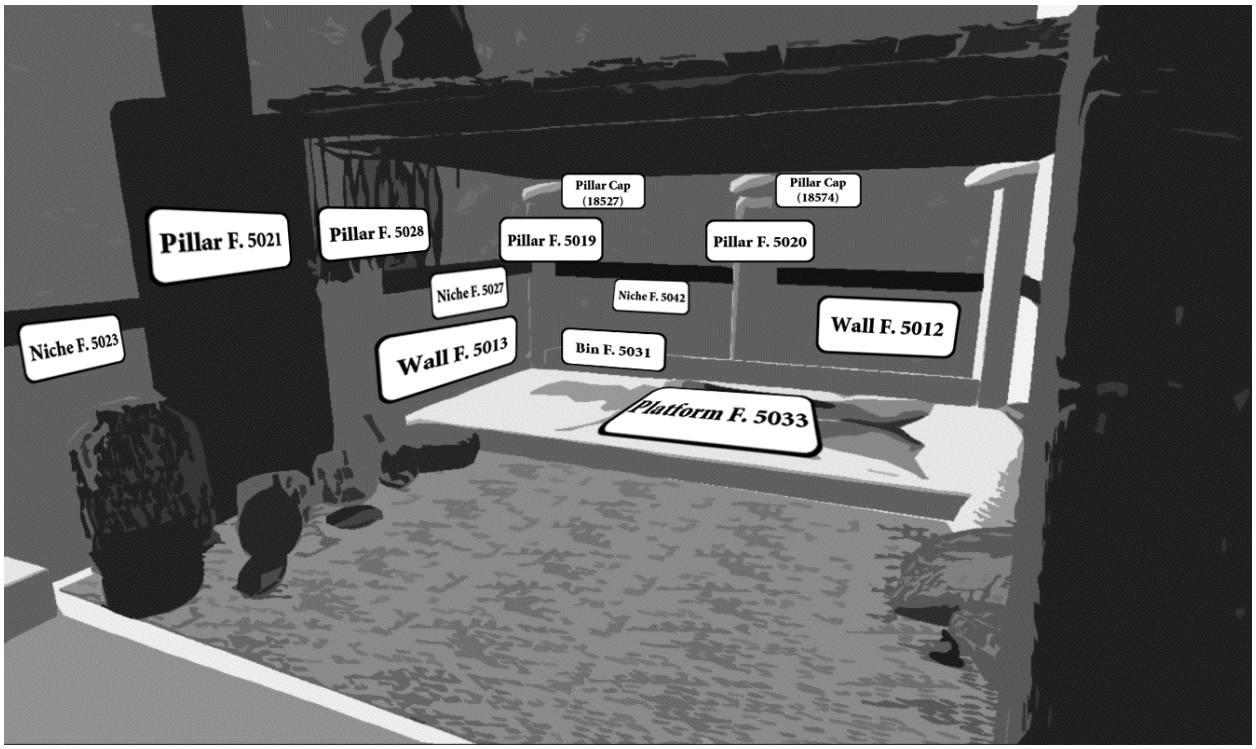


Figure 6.17 Interior of Building 79 reconstruction with labels connecting the reconstruction to the archaeologial record

Building 79 clearly has antecedents, and will very likely have successors. Finding the multiple contexts allows us to examine the place of this digital object in respect to other reconstructions. This is a unique position of working at Çatalhöyük; there is a wealth of interpretive materials, specialists, and illustrators who have been trying to understand the Neolithic at the site for many years. Indeed, that there are both previous virtual reconstructions and future visualizations planned places Çatalhöyük in a rarified cadre of a handful of sites. As visualization software becomes more inexpensive and widely available, there has been a flurry of reconstructions; indeed simple virtual reconstructions are fast becoming a standard product of archaeological projects. These reconstructions generally have little reference to the larger context of virtual reconstruction in archaeology. Building 79 no longer exists in a virtual environment and has become an illustration, with the attendant virtues and criticisms (James 1997; Perry 2009).

Multivocality

> "I think there needs to be more stuff."
> "How much more?"
> "I basically think of them (the Neolithic inhabitants of Çatalhöyük) as hoarders."
> "But they plaster[11] their houses once or twice a year, right?"
> "Something like that."
> "So they'd have to haul all of their junk out of their houses each time—up a ladder."
> "Well, not necessarily all of it. They could move it to the middle of the room."
> "Not when you are plastering the floor at the same time."

[11] The "plaster" is actually a clay marl, but the terminology persists.

"What about the micromorphological evidence?"
"Inconclusive. The stuff didn't have to all be in the house at the same time."
"So you are saying that instead of them being hoarders, they were Ikea-style minimalists?"
"Well, not exactly. But they weren't stack-your-house-full hoarders."

—Conversation during the construction of B79

Figure 6.18 Daniel Eddisford and Colleen Morgan working in Building 79 at Çatalhöyük

Figure 6.19 The avatars of Daniel Eddisford and Colleen Morgan reconstructing Building 79 in Second Life

As an archaeologist that came out of the Americanist tradition, I found the causal, dialogic style of British excavators at Çatalhöyük to be distracting and confusing at first. Fellow professional archaeologists did not come to "have a chat" about your excavation area. When I finally understood that the archaeologists were not threatening me or trying to intimate that I was an inept excavator I reveled in this practice, asking constant questions of the more experienced archaeologists, happy to interrupt or be interrupted. This conversation continues later in the evening over beer in debates over specific architectural details, casual chats about finds or the validity of specialist opinions. The conversations go largely unrecorded and do not show up in the dry archive reports or the formulaic site "diaries." Most of the participants in the conversations—professional archaeologists and the occasional students who escaped from the labs for the evening—have less money, education, and power than the specialists on site. While some of the "faultlines" noted by Carolyn Hamilton between the excavators and specialists had healed, there was still relatively little cross-fertilization of ideas—the specialists held seminars and the excavators talked to each other in bar in the chicken shed. This, of course, is a gross generalization as there were people, like myself, who moved between the worlds. Still, and especially after the decision of Hodder in 2011 and 2012 to first fire the specialists and then the excavators, what little trust had been there was gone. Though one of the tenets of Hodder's reflexive methodology is, explicitly, multivocality, there was little evidence of such on site or in publications.

Building on Okapi Island was necessarily multivocal; teams of students and professors came together and worked on various aspects of the site. These initial collaborations required intensive participation on the part of the members who had actually been at Çatalhöyük; though readings regarding the tell were assigned to members of the team, the readings rarely directly translated into information that could be made into virtual environments. The collaborations between two site participants who had excavated the building being reconstructed were dramatically different. When Daniel Eddisford and I reconstructed B79 together in Second Life, we were both equally familiar

with the excavation data and the Çatalhöyük literature, though I was a more advanced 3D reconstruction user. Still, we did not agree on all of the aspects of the reconstruction, as the conversation above illustrates. Building the reconstruction together revealed dissonance in interpretation between two archaeologists that had worked on the same building at the same time, two archaeologists who agreed on the interpretations written in the archive report (Figure 6.18, 6.19). While we would have benefitted greatly from input from micromorphologists or forensic anthropologists regarding the fire or the contents of the building, this reconstruction was done by participants in the excavations at Çatalhöyük who were generally left out of the final interpretive process. Daniel Eddisford is a professional excavator, and while his opinion was valued in the field, he was not asked to collaborate on publications outside of the archive reports and final building reports. His work was seen as existing outside of the academic realm, gleaning information to be processed and published by academics who did not actually excavate. I was a student participant on site, the remains of the Berkeley Archaeology at Çatalhöyük team, although the BACH phase of excavation was over and the rest of the team had moved on to other roles within the Çatalhöyük project. The relative ease of the building tools in Second Life made it possible for two non-specialist, non-illustrator, excavation-oriented archaeologists to reconstruct a building that they had excavated a few months prior.

Multivocality in 3D reconstructions does not have to result in a single, agreed-upon output. It was relatively easy to create a version of B79 that showed only the features, showed just a few artifacts, or showed artifacts piled to the ceilings. In Neil Silberman's critique of virtual reconstructions he calls for the concept of multivocality to "challenge dominant interpretive narratives and to create spaces and structures at heritage sites that will promote the co-existence of potentially conflicting approaches and perceptions of the site's significance" (Silberman 2008:141). While the reconstruction of B79 might ultimately be rejected by the dominant site narrative (or more likely ignored), building the reconstruction in Second Life revealed counternarratives that challenged our ideas about life at Neolithic Çatalhöyük. This refutes Emele's worry that "virtual reality will merely reinforce our own preconceived ideas about the world as it was then…archaeologists have meanwhile complained that the computer reconstruction has become so lodged in their minds that they could no longer actually see what is in front of them when excavating at the site" (2000:225). The key to this process was engaging the interest and cooperation of the original excavators of the building, beyond simply building a mock-up and asking if it is somewhat accurate. We, the excavators, were involved in each step of the process and we had ownership of the final product. Still, none of this work was paid, and we did this on our own. Indeed the excavators at Çatalhöyük are not paid to write archive reports and are expected to write the bulk of their interpretations on their own time. While this is standard procedure for academics, academics are working toward social capital within a field whereas field excavators are working for a wage. Until excavators are brought into the interpretive process and involved in the visualization and reconstruction of sites, and collaborated with in publications, claims of on-site multivocality are moot.

Authorship

"All these virtual reconstructions look like computer games. That's not what the past looked like, the past looked like a nice little watercolor sketch." - Daniel Eddisford

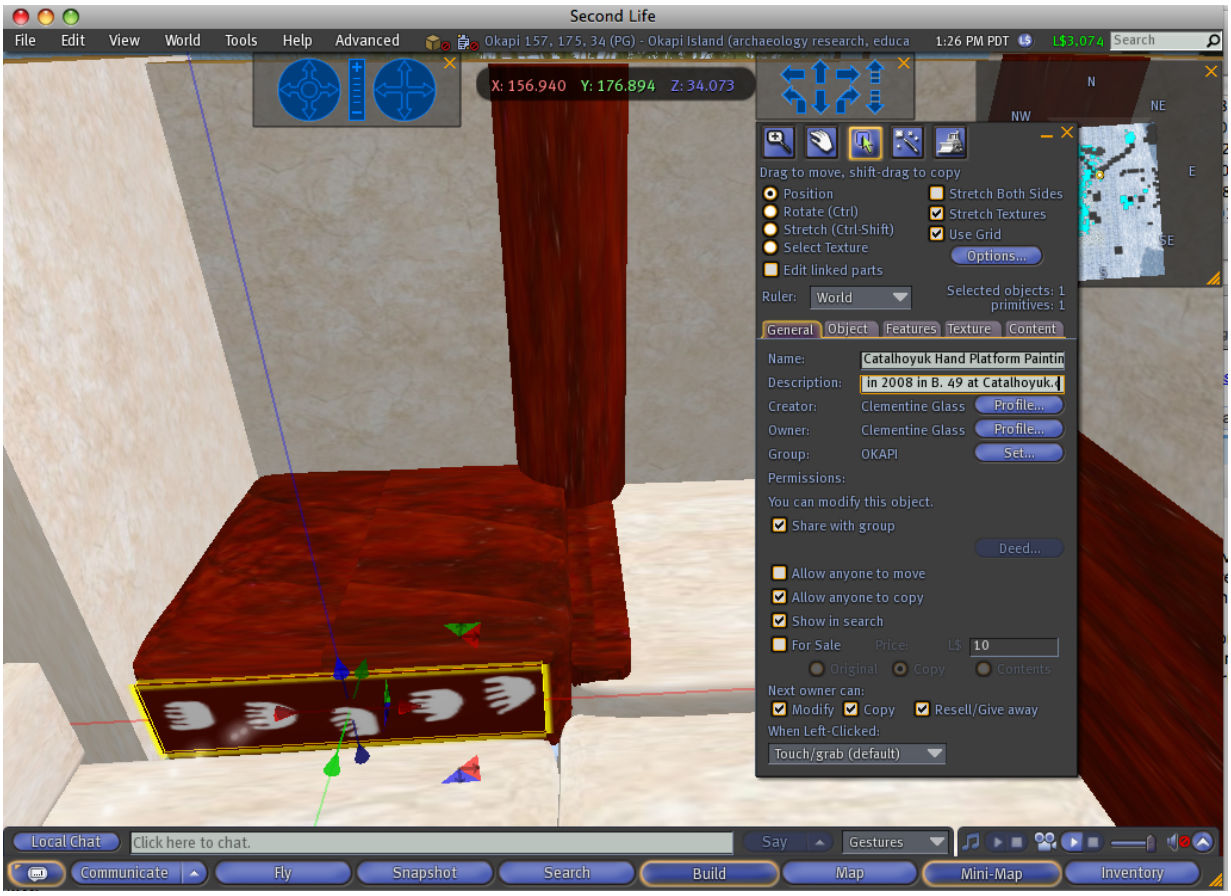


Figure 6.20 Interior of Building 44 reconstruction with Second Life construction interface

In the case of the reconstruction of B79, collaboration and authorship are closely intertwined. To contrast with desktop-based non-immersive 3D reconstruction software such as 3ds Max, building in a shared virtual environment such as Second Life requires the presence of an avatar. The link between creation and avatars in Second Life is direct; the object emerges out of a glowing tether attached to the avatar's hand (Figure 6.20). Once the object is placed in the world, the avatar retains authorship in the object's metadata. The object creator can then choose to share, a topic that will be covered below. Larger structures and features are generally made up of several objects and textures, each of which has its own authorship and permissions until explicitly joined together by the creator. If the creator does not have the correct permissions for any one of these objects, the object cannot be joined together may limit the interactivity of the object. Thus, authorship is embedded in the object's metadata. Yet even as indelible as the embedded authorship and permissions are written into the objects, descriptions and object titles disappear if the object is joined with another object. This is an important consideration when reconstructing archaeological objects; while it is possible to reference particular texts or illustrations as informing the reconstruction within the object, it is difficult to ensure that these references remain with the object. Still, Second Life allows embedded authorship, allowing relative transparency in the interpretation and reconstruction process. When collaborators join each other in world as avatars and can each manipulate the reconstruction, collaboration in archaeological illustration takes on a new dimension. Usually archaeological illustrators or digital archaeologists discuss reconstructions with the excavator or the site director, occasionally just referencing the archive reports, photographs and plans, but in-

world interaction encouraged close collaboration as avatars can walk around the model, see it from all sides, and alter it at will. Many participants in the excavation can come together and take ownership of the interpretation and visualization of the past. Ideally these reconstructions would come under the same scrutiny as peer-reviewed articles (Perry 2009), but removing the barriers between on-site interpretation and off-site presentation through dialog and empowerment of field archaeologists moves the discipline closer to a more open, reflexive archaeology.

While many field archaeologists may not wish to participate in creating 3D reconstructions of the remains that they have excavated, and certainly there is rarely funding for them to do so, I have found that most are enthusiastic about their inclusion into a process that usually occurs months after the excavation is over. Perhaps this is what the Emele's excavators meant when they "could no longer see" the site in front of them, not that the reconstruction was fantastic, but that it was so separate from their own interpretations that it was impossible to reconcile the two (Emele 2000:225). As avatars Daniel Eddisford and I were immersed in the virtual environment together, building together, much as we had excavated together. Different parts of the reconstruction could retain individual authorship through the previously described embedded metadata, but the end result was a shared vision. In contrast to B79, there were many other buildings that had been furnished by individual students working to understand both the Neolithic and 3D modeling simultaneously. These reconstructions were primarily informed by illustrations of the site, produced by both Mellaart and Swogger. These "legacy" illustrations will continue to inform reconstructions of the site, calling into question our ability to reconfigure interpretations with new findings. It may be more accurate to state that it is archaeological illustrators and visualizers who can "no longer see the site" without echoes of these past interpretive works. As Simon James writes, "A misleading image may become the kind of *idée fixe* which inhibits re-interpretation and new perspectives" (1997:26). Using past illustrations as models for virtual reconstructions can compound the error, as these reconstructions are precise and detailed by virtue of the tools used; Alan Sorrell's "clouds of smoke" that obscure relevant details do not translate into virtual environments. Framing the reconstructions as continual, habitable remediations of these past illustrations makes virtual reality less of a radical break in media than a continuation of understanding the past.

Still, though 3D reconstructions are informed by the illustrations, I argue that the technology used radically shapes virtual reconstructions, especially those done in less sophisticated virtual environments or by less skilled practitioners. Skilled archaeological illustrators such as Alan Sorrell, John Swogger, Kathryn Killackey and many others have their own style that is discernible though their subjects may vary in time and space. This individualistic style is not as apparent in 3D reconstructions that rely heavily on standardized tools. Reconstructions in the less sophisticated modeling tools in Second Life or Sketchup conform to the virtual environments in which they are made whereas reconstructions in 3ds Max and Blender have more flexibility and can conform to individual styles, though generally do not. Still, self-expression in reconstructing archaeology in virtual environments is possible in many ways; the most apparent in Second Life is the use of screenshots as an experimental photographic form. During the reconstruction of B79 we took several screenshots to show the progress of the building process, then final shots for publication, much the same as standard archaeological site photography that features stylistically distinct working and publication shots. We also chose to take more expressive shots, including the self-portrait ubiquitous in Second Life and a photograph of the interior of the building from the imagined perspective of a clay ball inside an active oven. The previously mentioned machinima is another way that style can be expressed within virtual reconstructions. In contrast to standard, normalizing

isometric views of architecture, unorthodox framing help to decenter the stark authority prevalent in virtual reconstructions, showing them to be the product of interpretation (Figure 6.21).

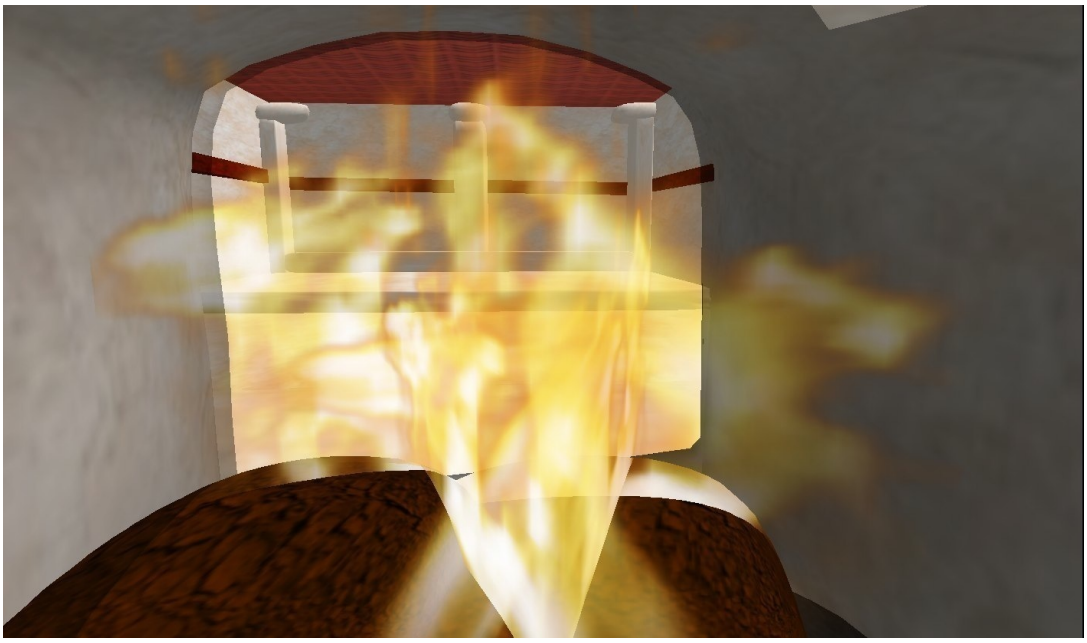


Figure 6.21 Unorthodox view from the interior of the oven of Building 79 reconstruction

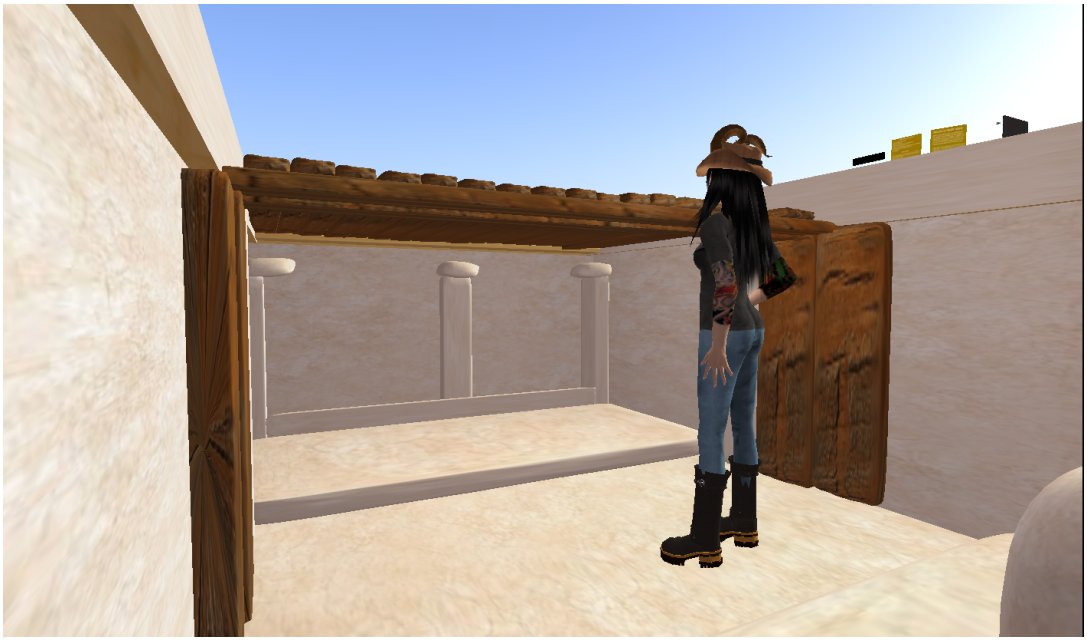


Figure 6.22 Interior of Building 79 with 5'5" avatar for scale

Openess/Transparency

Building 79 was only a small part of the archaeological research in Second Life performed under the auspices of the OKAPI group. OKAPI was founded to promote open knowledge through Creative Commons and Open Source licensing for academic projects, and our work in Second Life

embraced Okapi's mission to "explore the potential of the Internet and new digital technologies to foster learning, creativity, and dialogue across borders and communities" (http://okapi.wordpress.com/about-okapi-2/). Most of the Çatalhöyük media content that reconstructions efforts relied upon such as reconstructions and photographs were licensed under Creative Commons, allowing us to draw freely upon these resources. Even with a clear ethos of sharing and the intention to license all of the works under Creative Commons, negotiating the highly proprietary world of Second Life made the implementation of these values difficult. While it was easy to track authorship, the issue of ownership was problematic. Further, the emphasis on individually-constructed virtual objects occasionally made collaborative building nearly impossible. Finally, the land-based economy of Second Life became prohibitively expensive, ultimately bringing about the demise of the island.

The virtual reconstruction of the blended modern and Neolithic environment was built using both original prims and textures and pre-made items that were purchased in the Second Life Marketplace. Building items "from scratch" in Second Life requires a mastery of the in-world item creation tools. More sophisticated items requires learning a modeling program such as Blender or 3ds Max and then importing files into Second Life. Modeling objects becomes even more complicated by addings scripts that animate avatars. Adding scripts requires another piece of software and a working knowledge of programming to create the proper sequence of actions. While some students would come into the class or working group knowing the fundamentals of 3D reconstruction, many would have no experience at all. The situation was exacerbated by the semester system and receiving new students and having to start all over again. Happily a few students remained involved in Okapi Island and these students became adept at navigating and creating in 3D worlds.

Many of the items created for the Neolithic reconstruction had to be built from scratch as "prehistoric" was not a popular building genre and the artifacts at Çatalhöyük were unique and not popular enough to garner imitation[12]. We repurposed some items such as bundles of grass and generic pottery forms that were close to the simple pottery found at Çatalhöyük. Happily there some scripts that we could appropriate; there was a quern stone that animated avatars so we were able to simulate some prehistoric actions. Animals were also relatively easy to obtain, if expensive and occasionally scripted to be too noisy. The oinking of our herd of pigs sometimes interrupted film showings and discussion groups and the water birds that would "swim" in the marsh would sometimes swim into the land and get stuck. Many of these animals and furnishings were expensive and we would rely on occasional infusions of real-world cash to continue building on the island. When an avatar would buy an item for the island, we would try to only select items that were copyable and modifiable so that we could customize and reproduce the item to use across the island. The bought items that allowed the new owner to "transfer" their ownership were the best for our purposes as we could then share ownership and more than one avatar could modify the item. The items that retained strict ownership permissions were the most difficult to deal with and often had to ultimately be removed from the island entirely.

Object ownership was at times annoying, as students that did not continue with the project would build or buy items that were then unmodifiable by other students, yet it was object permissions that was the ultimate impediment to collaborative building. The objects built in Second

[12] Many monumental sites have been recreated; as of 2012 there are 92 versions of Stonehenge, 13 "Aztec" temples and various Greek, Roman, and Egyptian furnishings for sale on the Second Life Marketplace.

Life were set to non-sharing by default; we had to internally modify each element of the objects that we'd create, including textures and scripts. The earliest construction on the island was built by a student that quickly moved on and we had to track him down and repeatedly ask him to either login to change his object permissions or allow us access to his avatar, a possibly morally questionable transaction between teacher and student. After two years of unregulated building we developed a series of protocols that I discussed in a September, 2009 blog post on Middle Savagery[13]:

> "We believe that these protocols not only apply to our particular reconstruction, but should be applied more broadly for archaeological site construction using the Second Life toolkit. By applying these protocols a maximum of contextual information, authorship, and interpretive surety is maintained. Additionally, we believe that all objects should be copyable generally, and specifically repackaged for consumption and use off the island. In this way, our work and interpretations live beyond the relatively limited life of this particular reconstruction."

These protocol were followed for the most part, but the non-sharing-by-default object creation designation was a constant problem in collaborative building. This non-sharing stance is due to the emphasis on the in-world object creation and retail that Tom Boellstorff terms "creationist capitalism" (2008). In-world creation is a "mode of capitalism in which labor is understood in terms of creativity, so that production is understood as creation" (206). The production of in-world identity relies on the quality and quantity of goods that are produced and consumed by the avatar. Reselling objects created by another avatar was a particularly contentious issue, with un-checked item copying seen as "an attack on copyrights and trademarks, but also an attack on creativity itself" (214-215). As educators we did not have special dispensation, though a cooperative arrangement with the skilled builders in Second Life might have been a beneficial direction for Okapi Island[14].

Owning an entire island within Second Life gave us tremendous freedom to create an isolated reconstruction of Çatalhöyük. The location, off the main continents, protected the island from "view pollution" wherein the construction efforts of the owner on the next parcel of land could disrupt the immersive experience with the modern buildings, large signs, and neon lights that are prevalent in Second Life. Other archaeologists who build in Second Life have circumvented this problem by ringing their reconstructions with large barriers that have landscapes mapped on them, much in the way of backgrounds in museum dioramas. Owning such a large parcel of land was not without its downsides; Okapi Island was expensive with the initial educational discount and exorbitant after this discount was ended in 2011. The island attracted "griefers" who wanted to use the isolated island for their own construction projects, generally on large floating platforms far above the island. We finally considered this to be abuse of the island's shared building space, the sand box, and would remove any large structures that were made. This kind of maintenance was relentless and the island was fallow during the summertime and during semesters that there were not active projects using the island. The digital abandonment and reuse that occurs on archaeological websites had a very distinct echo on Okapi Island. Neglect of the island was immediately noticeable and the result was immediate reuse that was an incredible hassle to continually clean up. Finally the maintenance and perpetuation of the island fell entirely on my shoulders as the initial participants moved on to other projects.

[13] http://middlesavagery.wordpress.com/2009/09/15/Çatalhöyük-in-second-life-fall-2009/

[14] Virtual Rosewood is an example of this method.

The death of Okapi Island

Despite massive online protest, Linden Labs ended the educational discount within Second Life on January 1, 2011, effectively tripling the cost of Okapi Island. Unable to raise the money necessary to continue the project, we pleaded our case to Linden Lab, but they never responded. We were an open, educational consortium operating within the bounds of a private corporation with proprietary software. After it became clear that Linden Labs were not going to move to preserve the archaeological site, we shifted into a familiar mindset—rescue archaeology. We had to preserve what we could, and digitally archive everything that we could not save. One of the students involved with the project was specifically assigned to methodically screenshot every aspect of the island and tag the shots with the appropriate metadata. Ruth Tringham captured as much as she could in the form of an in-world movie, and I took copies of everything I could and placed them in my avatar's inventory. In theory we could then recreate the island at another time in another place. When the island was not immediately shut down on January 1, we began to explore other options.

OpenSimulator , as previously discussed, seemed to offer a way to preserve Okapi Island wholesale; there were online explanations about how to port Second Life builds into OpenSimulator. The process was complex and required more in-depth knowledge of system administration than we had readily available. As I learned more about the transfer process it became clear that it was unfeasible for Okapi Island. The collaborative building that we valued as a pedagogical tool ultimately led to Okapi Island's downfall. It was not the termination of the educational discount but the problem of object permissions that resulted in the true "death" of the island. The transfer process required us to attain the passwords of all of the student avatars that had helped us build the island over the years that it was active. Even then, a large amount of the objects and architecture incorporated parts that were bought or that were even obtained for free but that we did not own the permissions to transfer or copy the objects. There could have been ways to negotiate these losses or we could have started fresh with OpenSimulator, but most of the team had moved on to other projects and none of us were actively conducting Çatalhöyük-based research. The island was finally shut down on January 21, 2012.

Second Life was an imperfect venue for hosting archaeological reconstructions, yet it brought the Çatalhöyük to an audience that might have not interacted with the Neolithic site otherwise. OpenSimulator is not as popular, has comparatively primitive scripting and building capabilities and is more difficult for users to interact with. Okapi Island would have been even more isolated in OpenSimulator, without the larger social context and the low barrier to entry for avatars who are interested in exploring virtual environments beyond shopping or clubbing, the island would get few casual visitors. Using Second Life was good for raising awareness about virtual reconstructions in archaeology and Çatalhöyük, and perhaps there will be reason to reoccupy the virtual environment. The reports of Second Life's demise in both academic and commercial contexts appears to have been premature; there has been a resurgence of interest in Second Life with an accompanying rise in profits[15]. Okapi Island may rise again, but we do not know if Linden Labs has merely shelved the space or if it could be resurrected. When I attempted to visit the island after it closed, I was redirected to a nearby adult-themed club. I have an enormous amount of the items of Okapi Island in my avatar's infinite inventory. I have thought about placing these items "for sale" in the Second Life marketplace for a nominal fee of a single Linden, effectively a penny. This would

[15] In 2010 Linden Labs was having financial trouble, but as of 2012 the company is making 75 million dollars each year: http://www.gamesindustry.biz/articles/2012-03-15-linden-lab-the-weirder-the-better

again place the Neolithic within range of avatars, who could then integrate these items into their own environments. Other than my own inventory, Okapi Island exists in the archive we have created for the project. Making this archive available to a wider audience would also be a beneficial step toward the perpetuation of the reconstruction's memory.

I have logged into Second Life a handful of times since Okapi Island has shut down. I continue to explore other archaeological builds, and to make sure that I know the full extent of changes in place as Linden Labs improves the technological capabilities of Second Life. But I feel adrift, after spending so much time building and socializing with others on Okapi Island, my avatar is now homeless and friendless. The incredibly expensive garden that I tended no longer exists, and I wonder how other avatars make homes for themselves when the prices of the land makes casual building in Second Life untenable. I remember the "griefers" squatting on Okapi Island in the sky, using the resources that we took for granted, and I understand their tenacity for homesteading in the virtual world. Building 79 was just a small part of Okapi Island, but it was part of my home.

Chapter Seven: Conclusions

A successful digital archaeology threatens disciplinary boundaries, makes epistemic injustices visible, disrupts subject/object divisions, and contributes to a more robust, multivocal, reflexive discipline. The central question of this dissertation, what does it mean to practice new media in the context of archaeology and the corollary questions, how do new media technologies shape inquiry within archaeology, can new media theory change interpretation in archaeology, and can new media serve as a mechanism for an emancipatory archaeology have framed the object biographies of a photograph, a video, and a 3D reconstruction. These object biographies elaborated an explicitly critical, political methodology that emphasized grounding each object in its context, explored the concepts of multivocality and authorship in digital object creation, and evaluated the relative transparency and ability to share each of these objects. While the research methodology I used to examine these objects was consistent, the affordances of each kind of media led the biographic narratives in different directions. While boundaries between media can be extremely porous, the narratives provided useful distinctions between media and enabled me to built a robust structure to further examine archaeological digital media.

As I have demonstrated in the previous chapters, the use of digital media to create interpretive archaeological objects cannot continue to remain under-interrogated or under-theorized. Reflexive digital archaeological practice requires intensive investment at every stage of the object's creation, interpretation, and curation. By examining digital objects that I created, rather than those that others created, I perhaps sacrifice an outside perspective of these media, yet my insights from the creative process were incredibly valuable in disentangling the threads of technology, remediation, and the position of stakeholders in the process. A brief revisit of Alfred Gell's semiotic approach toward objects and agents in *Art and Anthropology* (1998) is illuminating in this respect. As the agentive figure of the *Artist* in the uselives of these digital media, the object indexes my position as a maker, as my particular authorial perspective speaks to my interpretation of the Prototype, or the ideal or original representation of the object. As an artist, or as I prefer, a *maker* of digital media in archaeology I create and interpret these media, though the media undergo a recontextualization on the internet or in one of the multiple formats that are available to digital media by the *Recipients* who translate the object into their own meaningful context.

Through object biographies I have shown the interactions of these agents within digital media creation. Yet in concluding this examination of digital media, two further emphases emerge as important yet open-ended questions. A tentative exploration of these questions extends my research questions beyond the limited scope of this dissertation and opens up room for future research in the field. First, the creation of digital archaeological objects is occurring in the wider context of the rise of *makers* as a subculture devoted to sustantiating personal creations in contrast to the overwhelming industrialism of the early 21st century. Experimental archaeology is an early example of exploration of making in order to illuminate the lived experience of the production of an archaeological artifact. Extending this willingness to experiment with ancient modes of living by sharing them digitally has the potential to communicate archaeological ideas to a wider group of stakeholders. Further, positioning yourself as a maker, as reflexively invested in the creation of digital archaeological artifacts emphasizes a multivocal, iterative process. Beyond the context of making in archaeology, I realize that the tidy categories presented as object biographies at the heart of this dissertation are fictitiously discreet; digital media are rapidly mutating into forms that defy easy categorization. This confusion and hybridity creates difficulties for the academic and the maker, yet the potential in these

media must not be ignored. Finally, after exploring the utility of an emancipatory methodology for changing forms of digital media, I discuss a future for digital archaeology.

Making and craft in digital archaeology

"*the risk-takers, the doers, the makers of things*" - Barack Obama

Author and former editor of *WIRED* magazine Chris Anderson (2012) argues that the Information Age is the third Industrial Revolution, marked by digital and personal manufacturing. Makers identify niche markets and "make a virtue of their small-batch status, emphasizing handcrafted or artisanal qualities" and create these items with computer desktop design tools (Anderson 2012:50). Creativity is fostered in nearly a thousand "makerspaces" (or hackerspaces) all over the world, places created by communities where people can access the space and tools needed to realize their designs (18). Anderson attributes this rise to a generation of "digital natives" who are "starting to hunger for life beyond the screen...making something that starts virtual but quickly becomes tactile and usable in the everyday world is satisfying in a way that pure pixels are not...the quest for 'reality' ends up with making real things" (18). The emergence of consumer 3D printers allows users to directly translate their designs to material goods without being beholden to large manufacturing companies (18). Beyond this nascent movement of personal manufacture, Matt Ratto calls for "critical making," to use material forms of engagement with technologies to supplement and extend critical reflection…to reconnect our lived experiences with technologies to social and conceptual critique" (Ratto 2011:253). The process of critical making requires three steps: first, compiling relevant literature and useful concept and theories, then "groups of scholars, students, and/or stakeholders jointly design and build technical prototypes", and finally, there is an "iterative process of reconfiguration and conversation and reflection begins" (253). This "emphasis on critique and expression rather than technical sophistication and function" moves away from modes of design and engineering that result in an end product "intended to stand alone and speak for themselves" (253). The shared process and act of making material objects is the goal of critical making and "participants in critical making exercises together perform a practice-based engagement with pragmatic and theoretical issues" (253).

Critical making in digital archaeology is a mode of engagement that can overcome what Ratto characterizes as a separation between the technical and the social in disciplinary practice (258). As I have illustrated in Chapter Three, there is a schism between makers of (digital) things in archaeology and the creators of interpretations in archaeology. Recognizing this schism and working to remedy it by both integrating multiple interpretations into digital media and rewarding alternate forms of publication engenders a more robust digital archaeology. Further, critical making provides an in-depth exploration of the affordances of types of media, allowing us to move beyond replication and translation of past forms of media into a digital format. Finally, Ratto cites Latour regarding the "weakening" of things as "matters of fact" (Latour 2008) in "turning the relationship between technology and society from 'matters of fact' into a 'matter of concern'" (Ratto 2011:259). Similarly, digital artifacts in archaeology have been treated as "matters of fact" while I have shown them to be matters of great concern. I have shown that within the critical making movement, archaeological digital photographs, videos, and 3D reconstructions can be reconfigured as activist, agentive media, as equal participants in the construction of archaeological knowledge. Only when digital media are recognized and utilized as artifacts as matters of concern will digital archaeology fully mature as an interpretive paradigm.

Interruptions/Hybrids/Skeuomorphs/Blended Media/Mutants/Polyvalent Media/Digital Readymades

The initial configuration of new media consisted of "old media" that had been digitized; Lev Manovich (2001) characterizes this process as "transcoding"—translating media from one format to another format. Jay Bolter and Richard Grusin broaden this translation, defining the representation of one medium in another medium as remediation (1999). Media are increasingly "born digital[1]", without an intermediary analog stage or initial representation or conceptualization to be remediated. These "born digital" artifacts are easily transcoded into other formats; digital photography can be remixed into digital videos with traditional cinematic effects added such as cross-cutting transitions and the Ken Burns effect, lending motion to a still photograph by zooming in or focusing on a single aspect of the photograph. Yet a digital photograph is still remediating a representation of the world that was not computer generated, though it may be manipulated through Photoshop. Difficulties start to arise when digital objects are "conceived digital"—there is not an analog corollary or "real world" representation with which to compare the digital object. While these digital artifacts can be approached in terms of traditional media, they easily transgress set boundaries, making digital media a slurry of representation. The elusiveness of this media is demonstrated in the title of this sub-section; no single term elegantly describes these "conceived digital" objects. Two examples of these transgressive media forms are machinima, movies "filmed" entirely within virtual worlds, and animated GIFs, images in the Graphics Interchange Format that are animated in some way. Each of these examples blur interpretive categories, in the case of machinima, between virtual worlds and film, and GIFs, between film and photography. By briefly exploring these two digital artifacts I hope to obscure the rigid categories set out in previous chapters, but also demonstrate the durability of this robust interpretive scheme for digital artifacts.

Machinima

Machinima, a portmanteau of machine and cinema[2], are films made inside virtual worlds or with video game engines. Machinima are an emerging genre of hybrid media made by amateurs who create these works and share them online through social media. Though some remain within the lingua franca of film, including familiar tropes such as one-shot, two-shots, over the shoulder, cross-fades, title screens, and scrolling credits, machinima can also describe short films that depict live game play with little editing or remixed footage of video games with alternate voice-over tracks. On the surface machinima appear to be similar to animation, yet a key distinction is that the action is provided by at least one avatar, whether that avatar is simply present in the virtual world and absent from the film or is the central character interacting with other avatars, the author of the film is *inside* the film. Machinima are often characterized as a "found technology" or a "digital readymade" as they are unintended products of available software (Lowood 2007b). They are an interesting mode reversal; as Janet Murray states in her seminal *Hamlet on the Holodeck* (1997), digital stories are incunabular, an infant media, untested and unwise in methodology and scope. While machinima hearken back to a well established genre, movie-making, for its tropes, these tropes are performed by hacking video game avatar viewpoints, painstakingly creating animation scripts outside the normal range of avatar movement, manipulating in-world lighting, and using software such as

[1] Interestingly, this term was also adopted to describe "children who were born into and raised in the digital world" (Palfrey and Gasser 2010).

[2] http://en.wikipedia.org/wiki/Machinima

Blender and Photoshop to create clothing, textures, skins, props, and backgrounds for the action. Though the machinima may remain within the lingua franca of film, it is skeuomorphic, a video game reconfigured to be a movie. These machinima are contextualized within the genre of video games, where they "transform gameplay through performance, spectatorship, subversion, modification and player communities" (Lowood 2007a). Makers of machinima subvert both filmic tropes and video game worlds to create a new mode of visual expression with low-budget technology.

After re-constructing the blended modern and Neolithic world of Çatalhöyük in Second Life on OKAPI Island as described in Chapter Six, our research team began to use the virtual environment for tours, classes, events, film festivals, and live broadcasts of lectures. There had been machinima made since nearly the inception of OKAPI island, but these were more akin to live captures, wherein avatars were interacting without knowledge of being recorded. This was done simply as a method to record interactions with the virtual environment. A second, short, introductory Youtube video was made by Elizabeth Ha[3], wherein the avatars of the research group involved in making the island introduced themselves and their research on the island. Later, I experimented with the format alone, this time creating very short film fragments recreating Neolithic life at Çatalhöyük, using the buildings, objects, and clothing we developed on the site.

Figure 7.1 Clip of machinima made at Çatalhöyük in Second Life

These machinima fragments were intended to show a brief insight into Neolithic life, and were the culmination of thousands of hours of archaeological research, 3D modeling, and intensive discussion about the past at Çatalhöyük. I was not merely piloting a camera through a virtual environment; as an avatar-actor in the Neolithic world, the embodiment of a rotund, elderly lady (Figure 7.1), I was uncomfortable and extremely aware that the border between my virtual self and real-world self was permeable (Boellstorff 2008). I filmed the first machinima alone to test out the requisite software, animations, and sound before involving more actor-avatars. The scene was set:

[3] http://www.youtube.com/watch?v=6CCVfUuZqV8

my avatar was kneeling by an indoor oven, using the light from the fire to weave a basket. There is no narrative action, just this small moment in time that is decipherable in the archaeological record. We find basket impressions and we find the remains of ovens and mats; I attempted to keep the machinima very simple and directly linked to the archaeological record. Still, this small scene represented a large amount of work in modeling individual artifacts and actions, not to mention navigating a confusing array of questions that emerged regarding my assumptions. First, why is she weaving baskets at night when it is hard to see? Also, why is she inside? Her clothes and the sound of the cicadas outside seem to imply summertime, when it is assumed that people slept on the roof. Why did I assume that the basket-makers were female? I later filmed small scenes with our research group, keeping to the same format of attention to archaeological detail and working to make the interpretation more multivocal. These first machinima looked lovely with exquisitely made costumes and props and close attention to detail, lighting, and sound. There were also a bit boring, uncanny, and captured very small moments in time with little narrative. Could these actually show the interpretive complexity and range of possible lifeways at Çatalhöyük?

Later, Ruth Tringham and I conducted a class wherein we produced a machinima of much longer length; finding and making appropriate costumes, skins, and props for all of the student avatars was a constant concern. The students developed a few scenarios gleaned from readings about Çatalhöyük that we could act out using Okapi Island and we assigned the parts by drawing roles out of a hat, giving parts for females to males, and in one case, assigning a male to embody an ancestor spirit that he interpreted as female. None of the roles were speaking parts; all of the action was either scripted with special tools or adapted from scripts that were available in Second Life. We acted out a hunt for an auroch, the birth of a lamb, and the death and burial of an inhabitant. All of these moments were crafted from our knowledge of the archaeological record, yet participating in the machinima was strangely dissonant from my experience excavating and dwelling at Çatalhöyük. While many reconstructions are in certain aspects performed collectively, relying on information gleaned by excavators and specialists, the end product is a synthesis of this work and the artist's personal opinion and style. The collective reconstruction was disorienting, not cohesive, fragmentary, not a wholly realized artist's vision. In this way the machinima contributes to a multivocal reconstruction of past events; as a collective reconstruction it did not necessarily privilege the artistic vision of a single creator but showed aspects of the past that were either counter to the dominant narrative, or portrayed scenes differently than I would have imagined them. As a digital archaeologist who has authored many reconstructions and enhancements, I found the loss of authority frustrating and was nervous about including ancestor spirits in the storyline. Yet this project reflects many of the elements of critical making as a practice-based engagement with the interpretation and dissemination of digital archaeological artifacts.

The discomfort involved in making these machinima was considerable and we had many false starts and frustrating set-backs. The context of Second Life, paired with an unfamiliar task of creating and filming a virtual play with avatar-actors in an incunabular medium stretched the capabilities of the students and required a large time investment from us as instructors. An additional context to consider is that of the classroom—while our research group had spent a long time exploring Second Life and building together, the students in the Serious Games class were only invested in the format of Second Life and the topic of archaeology until the end of the semester, as all of the students were non-majors, taking the class for an outside requirement. The collaborative relationship required for multivocal interpretations strained under the knowledge differential and the more structured environment of a classroom. Though both Ruth Tringham and I strive for a progressive, feminist approach to teaching, a collaboration on the scale of an in-world virtual movie

based on archaeological remains required more representation from archaeologists who were versed in the complexity and nuance involved in interpreting Çatalhöyük. After the "filming" was finished, Ruth and I edited movies from the resulting footage. These movies were edited without consultation from the students, as adding editing film onto the list of technical skills required from them was beyond our time allowance. Still, the students viewed the final product and were happily surprised at the results. Though there were considerable flaws in all aspects of the class machinima, we made the effort to communicate about our inexpertise transparently and encouraged students to take on authorial and technical aspects that we were not fully capable of handling ourselves.

The Animated Graphics Interchange Format

Perhaps not as flashy or layered in multiple technologies and media formats as machinima, the animated Graphics Interchange Format (GIF) has a comparatively long, and mostly invisible presence in hybrid digital media. The GIF was created by CompuServe in 1987 as a "standard defining a mechanism for the storage and transmission of raster-based graphics information" (1987). In 1989, CompuServe released an enhanced version of the GIF which supported animation delays (1989). The ability to store multiple images in one file allowed simple, low-resolution animations to be viewed on the World Wide Web. These animations were wildly popular on early websites and have persisted for nearly a quarter of a century as technology has changed and file formats have multiplied. Joshua Kopstein (2010) traces the history of GIFs as "versatile, digital zoetropes" that can be used to examine moments of time both as suspended, looping movement and as an artifact of the speed and technological complexity available at the time they were made. Tom Moody, an internet artist, states, "animated GIFs have evolved into a kind of ubiquitous 'mini-cinema,' entirely native to the personal computer and the World Wide Web…they are the purest expression of the democratic web and along with JPEGs and PNGs comprise its most authentic visual language" (2009). As a "somewhat retro and somewhat activist" format, animated GIFs appeal to artists as an anti-corporate commitment to technology" as most makers of GIFs do not identify as artists (McKay 2009). Animated GIFs blur the boundaries between still images and short films as well as between art and non-art. Sally McKay explores the affective qualities of the animated GIF, linking the intensity of affect to the restrictions of file size and download times and resultant "jerkiness" that contrasts to the smoothness of cinematic animation (2009). Yet these technological restrictions are becoming less of a consideration with the ever-growing bandwidth becoming more widely available.

More recently, Jamie Beck and Kevin Burg have moved animated GIFs into the realm of high fashion and art photography in what they term as "cinemagraphs" which are "more than a photo but not quite a video" (Cinemagraphs 2012). As an antithesis to the frantic flashing and jerkiness of earlier animated GIFs, the movement in Beck and Burg's cinemagraphs is often very subtle, the glint of an eye, or the flutter of a dress in the wind, while the rest of the image remains still. The cinemagraph destabilizes the photograph, causing the viewer to search an image for any sign of movement, the anticipation becoming interminable, then finally the satisfaction of catching the action. This is most visible when the cinemagraphs are put into the context of a photography blog, wherein some of the juxtaposed photographs look similar, but do not contain movement. The anxiety caused by the wait and the subsequent *lack* of movement in contrast to the cinemagraphs resituates the expectations of digital photography.

In the case of constantly looping animated GIFs depicting a scene, the image shows the briefest movement of time, telling the shortest story, repeating soundlessly over and over again. The

first viewing of the scene is confusing and surprising, as we may come into the scene not at the beginning but at mid-way or near the end. Then we watch the clip again, with full knowledge of the action on the second run through, anticipating the joke or the action, then a third viewing, relishing the details we missed on the first or second pass. The punctum of the animated GIF is brutally enforced by the maker of the image; there is no mystery to the question: *What do GIFs want*? Animated GIFs reinforce their imagery through looping, a perhaps unintentional citation of digital music, bringing rhythm and motion to a formerly inert entity. Many animated GIFs do not cite photography or videography at all, but are animated from computer graphics, and some GIFs blend drawing, text, and photography. As a digital artifact, animated GIFs are a fascinating blend of still image and motion, a persistent feature of self-expression on the World Wide Web, exceedingly difficult to categorize, and are almost completely ignored by scholars of visual media.

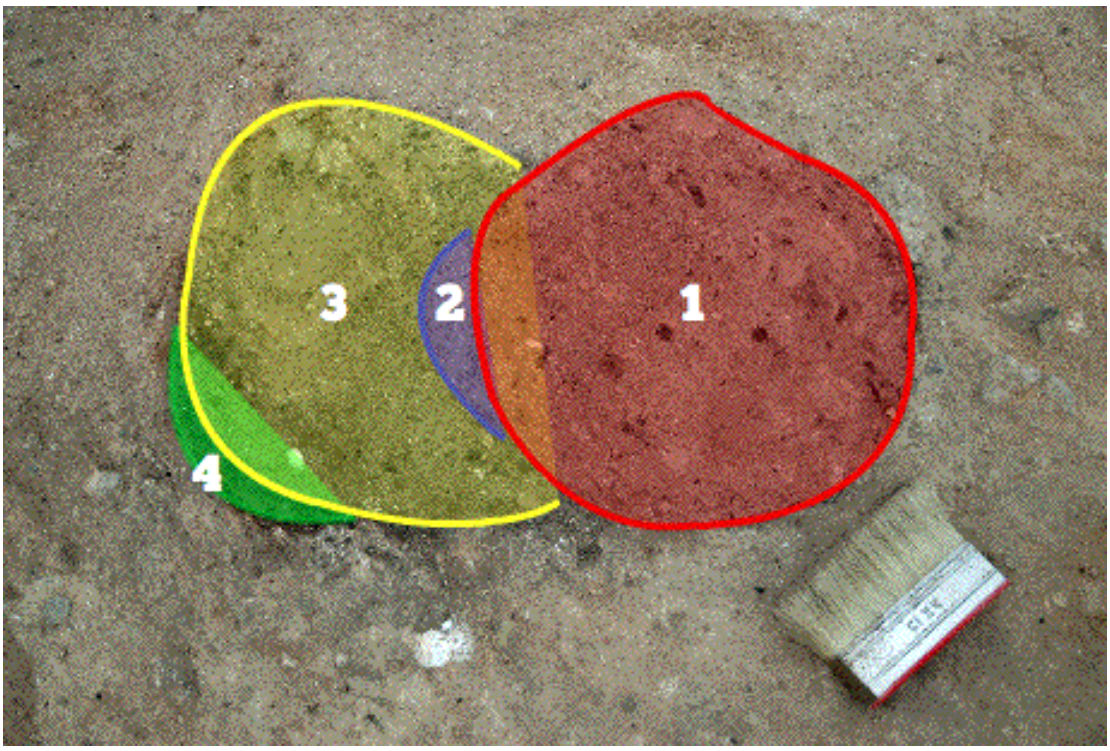


Figure 7.2 Screenshot of an animated GIF created to show the excavation sequence of a series of fire pits

In early 2012 I experimented with animated GIFs to illustrate archaeological vision and illustration in my article "Archaeology and the Uncertain Edge" in the journal *The Unfamiliar* (Morgan 2012). Using Adobe Flash, I made two animated GIFs to appear with the article. For the first, I drew multi-colored circles around firepits and then animated the circles to indicate the order in which the deposits should be excavated (Figure 7.2). For the second animated GIF, I chose a wide-angle photograph of areal excavation, then inscribed the surface with lines indicating where the various deposits in the image were, including the particular drawing conventions used to delineate the deposits in archaeological drawings. While not necessarily artistic or groundbreaking, these animated GIFs illustrated concepts that are difficult to describe using photographs and are such a small event that it does not seem suitable to film[4]. Similarly, anthropologist Glenn Davis Stone

[4] Though I did film archaeologist Ruth Hatfield excavating a similar intercutting sequence of firepits at the same site. In that case it was over 20 pits, whereas this series featured only four pits.

(1997) used animated GIFs as a heuristic device to demonstrate patterning in complex graphs portraying the history of territory and land use among the Tiv and Kofyar farmers in central Nigeria. Sadly, the animated GIFs Stone created were unpublishable in print format, and the link supplied with his article to access the animated GIFs now leads to a score of broken images. Neither anthropologists nor archaeologists have further pursued the animated GIF as a format for research or publication, which is unsurprising as it continues to be unpublishable and is held in little regard.

As ubiquitous and yet invisible animated GIFs are on the internet, they are a fantastic digital artifact to think with. I made the animated GIFs for *The Unfamiliar* shortly after taking the photographs from which they are based on in Qatar, to upload to a server in the United States, to be published in a journal from the University of Edinburgh. The file size for the animated GIFs is enormous, difficult to handle even for the more advanced broadband available today; the multicolored fire pit image was 10MB, and the larger landscape shot, 64MB. This was too large to attach to emails and so I had to deliver the animated GIFs through a file sharing program. Further, though *The Unfamiliar* is published online, the papers are stored in PDF form, meaning that I was not able to embed the animated GIFs. Fifteen years after Stone wrote "we are obviously heading into a period in which the concepts of publication and web-based scholarship will change" (1997:16), publishing has not changed and animated GIFs do not fit within the parameters established by even web-based publications. Still, the ability to create and distribute animated GIFs is constructed as democratic and pluralistic by Sally McKay, though creating animated GIFs requires an investment in technological knowledge. This democratization occurs as the animated GIF is copied, translated, and remade through various iterations, remixed and embedded in blogs and other social media. A popular trope on the internet is to use well-known television or movie moments showing a single emotion or a transition of emotions as illustrating a reaction to a situation. These are called "reaction GIFs" and are curated and tagged to ensure that they can be found and reused to illustrate concepts or statements linked to "fear", "pride", "jealousy" or "rage"[5]. The creator of the animated GIF is almost never cited and retains no control over the image after it is released. The animated GIFs I created for *The Unfamiliar* are unlikely to be reused in this way as they are not translatable to emotive reinterpretation. Finally, while animated GIFs are ubiquitous, their use was not always without controversy. The website Burn All GIFs[6] was not an aesthetic reaction against the form, but was dedicated to removing GIFs from the internet in reaction to their restricted use under software patents held by the company Unisys. When Unisys acted to collect fees on their licenses, there was a widespread and severe reaction against the company.[7] The relevant patent expired in 2003 and the GIF format can now be used freely[8]. In this relatively rare instance, using proprietary file formats did not impact the longevity or the useability of animated GIFs thus far, though the freedom and security to use this format was only achieved after wide-spread protest from the developer community against patent enforcement.

As polyvalent media forms, machinima and animated GIFs destabilize categories set during media's analog incarnations. I have used the examples of animated GIFs and machinima to show the difficulties in treating digital media as discrete entities that can have methodologies associated with previous forms of analog media. Using an abbreviated form of the methodology I set out in Chapter Three, I examined each of these digital media artifacts through their context, multivocality,

[5] See http://gifreactions.tumblr.com/
[6] http://burnallgifs.org/archives/
[7] See http://www.amigareport.com/ar304/feature2.html
[8] http://en.wikipedia.org/wiki/Graphics_Interchange_Format#Unisys_and_LZW_patent_enforcement

authorship, and their relative openness. Examining the objects as matters of concern reveal their status as provocative forms of digital media outreach. Both machinima and animated GIFs also deeply involve the *maker* mentality; though there have been works in these formats by digital artists, these media are overwhelmingly created by communities interested in digital self-expression who receive no recompense and little recognition for their efforts. Experimenting with these formats has led to precarious ground, but an active engagement with an emancipatory methodology paired with a explicitly theory-laden consideration of digital artifacts allows us to rigorously assess their position in our archaeological meshworks. While there is no completely safe way to conduct these experiments with digital artifacts, our failures, outdated displays and outmoded formats push us into productively reconfiguring archaeological knowledge and interpretations, which, as I have demonstrated in this dissertation, occasionally leads to greater insights into our field.

Conclusions

In conclusion, I have shown that an emancipatory approach to digital archaeological artifacts is flexible enough to address emerging polyvalent forms of digital media such as machinima and animated GIFs as well as forms of digital media that are more direct or "respectful" remediations of previous analog forms such as digital photographs. Working through these object biographies I have demonstrated that engaging with and producing digital media in the context of archaeology allows a wider range of interpretations by multiple stakeholders and broader distribution of these interpretations through sharing via social media on the Internet. Digital media shapes inquiry within archaeology by its affordances; for example, the reconstruction of Building 79 shaped my perception of all of the buildings at Çatalhöyük. When we reconstructed the multi-storied building, the small rooms that we had been focusing no longer appeared to be the nexus of social life as the top floors reconfigured our sense of space at the settlement. This shift of perception changed my interpretation of the settlement at Çatalhöyük—I wondered if we had been digging up the Neolithic equivalent of basements for many years. I also found that it was possible to make digital archaeological artifacts a part of emancipatory practice. The digital photography performed at Dhiban as discussed in Chapter Four was co-created by virtue of the LCD screen on the back of the digital camera that allowed subjects of photographs to review the photograph and accept or reject it as a legitimate expression. I was allowed to take the photograph of the coffee pot and allowed to keep the photograph after I showed that it was devoid of people who did not want to be photographed. While this exchange may seem like a minor act, an ethical, socially responsible, politically aware praxis in archaeology must take place during these everyday situations. To build these relationships, create digital artifacts together and forge a more multivocal archaeology, we can make an emancipatory digital archaeology. Yet we must do so starting with the ostensibly innocuous act of clicking a button.

A full account of theoretically informed, activist, digital archaeology is beyond the confines of a single dissertation. It is a collective effort, forged by a community of passionate, informed, critical makers in archaeology. This community has been built through the strange intimacy of social media, during sessions at academic meetings, and by friendships that can only form in grubby trenches. As archaeology intermingles with new media, visual studies, materiality, and other interdisciplinary forces, encountering 3-D printing, augmented reality, and other polyvalent digital artifacts, my contribution to this community is a sounding-board to facilitate critical discussions in the field. The tradition of craft in archaeology has been brutally squandered; as the de-skilling and devaluation of archaeologists continues through the culture of academic underrepresentation, lack of training, and a world-wide paucity of funding for cultural heritage, recognition for the origin of

archaeological data and its relative reliability has dwindled. Even as complex network analyses of migratory patterns, massive relational databases, and vast 3-D reconstructions of Roman cities are created, the underlying data relies on the skilled labor of craftsmen and craftswomen in archaeology. A better archaeology is a participatory, multivocal, craft-based archaeology that recognizes the value of both dirt and digital archaeologists. Using digital media to highlight inequity, to bring the voices of stakeholders into relief, to de-center interpretations, and to make things and share them is a gift to archaeology, and a threat, and a promise.

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