Alternative Authorities: New Media, an Ancient City, and the Art of Interpretation

Abstract

This paper engages the emerging, and in fact already contentious, debate concerning the role of the digital humanities in academia. While scholars have certainly accepted it as a powerful way to archive and manage content, many have questioned whether digital humanities can produce insightful academic interpretations. As historians, we are interested in both uses of digital technology, but in this paper we address the potential it holds for contributing to our interpretation of heritage sites. Using a digital reconstruction of the northern parts of the ancient Indian city of Sirkap (located in modern Pakistan, fl. circa 150 BCE – 150 CE), we provide an example of how employing digital technology can move us beyond archiving and managing content and meaningfully contribute to our interpretation of the past.

> Let's be honest—there is no definition of digital humanities, if by definition we mean a consistent set of theoretical concerns and research methods that might be aligned with a given discipline, whether one of the established fields or an emerging, transdisciplinary one. The category denotes no set of widely shared computational methods that contribute to the work of interpretation, no agreed upon norms or received genres for digital publication, no broad consensus on whether digital work, however defined, counts as genuine academic work. Instead of a definition, we have a genealogy, a network of family resemblances among provisional schools of thought, methodological interests, and preferred tools, a history of people who have chosen to call themselves digital humanists and who in the process of trying to define the term are creating that definition. How else to characterize the meaning of an expression that has nearly as many definitions as affiliates? It is a social category, not an ontological one.
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> - Rafael Alvarado, "The Digital Humanities Situation," 2011[1]

I. Introduction

Perhaps there is no better statement of the situation in which digital humanists find themselves than Rafael Alvarado's summary in the above epigraph. While digital humanists have certainly struggled to define this broad movement, the lack of a singular definition has not completely silenced their voices within the academy. For example, there now exist peer-reviewed journals, dedicated annual conferences, and academic research centers associated with the term. However, we find that for our colleagues who populate the more traditional disciplines in the academy, the key question is not *what* is digital humanities, but rather more simply, *what is the point* of digital humanities?[2] In the above epigraph, Alvarado asks two pressing questions for digital humanists: does digital humanities contribute to the work of interpretation, and, even more bluntly, does digital humanities count as genuine academic work? For those deeply committed to

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[1] Alvarado, Rafael C., "The Digital Humanities Situation," in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis: University of Minnesota Press, 2012), 50.

[2] As Alvarado puts it, "To a disconcertingly large number of outsiders, the digital humanities qua humanities remains interesting but irrelevant," Ibid., 52.

digital humanities, the answer to both questions is an unequivocal "Yes." But this confidence in the value of digital humanities for scholarship is not shared by all.[3]

The literary theorist and public intellectual Stanley Fish is perhaps among the highest profile examples of this skepticism surrounding the digital humanities. In a recent series of three New York Times op-eds, Fish put forth a common anti-digital humanities argument.[4] In his third article of the series, "Mind your P's and B's: The Digital Humanities and Interpretation," Fish makes a general argument for "his kind" of criticism and interpretation, a criticism that

> narrows meaning to the significances designed by an author, a criticism that generalizes from a text as small as half a line, a criticism that insists on the distinction between true and false, between what is relevant and what is noise, between what is serious and what is mere play.[5]

Fish argues that digital humanists cannot perform such analyses nor distinguish between these terms; he argues that digital technology *distracts* us from the real work of interpretation which involves close analysis of only the relevant and the serious. Those who use the methods that digital humanists have pioneered must recognize that Fish's doubts about the interpretational value of such methods are widespread in the academy. To address this kind of skepticism, those of us who leverage digital technology in our research must perform two tasks: first, we must carefully deconstruct the assumptions inherent in the arguments against "digital" methodologies, such as Fish's, but just as importantly, we must put forth examples of scholarly work that use digital

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[3] As Tom Scheinfeldt puts it, "[c]oncern over the apparent lack of argument in digital humanities comes not only from outside our young discipline. Many practicing digital humanists are concerned about it as well," see Tom Scheinfeldt, "Where's the Beef? Does Digital Humanities Have to Answer Questions?," in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis: University of Minnesota Press, 2012), 56.

[4] See Stanley Fish, "The Old Order Changeth," *New York Times*, December 26, 2011, http://opinionator.blogs.nytimes.com/2011/12/26/the-old-order-changeth/; Stanley Fish, "The Digital Humanities and the Transcending of Mortality," *New York Times*, January 9, 2012, http://opinionator.blogs.nytimes.com/2012/01/09/the-digital-humanities-and-the-transcending-of-mortality/; and Stanley Fish, "Mind Your P's and B's: The Digital Humanities and Interpretation," *New York Times*, January 23, 2012, http://opinionator.blogs.nytimes.com/2012/01/23/mind-your-ps-and-bs-the-digital-humanities-and-interpretation/.

[5] Fish, "Mind Your Ps and B's."

technology to significantly enhance our interpretations of a particular subject. The balance of this introduction will take up the first part of this task and lay bare the assumptions of Fish's anti-digital humanities argument, and then the rest of the paper will take up the second task and demonstrate how digital technology can enhance our interpretation of the past.

As Fish readily admits, he likes to "generalize from a text as small as half a line." While this strategy might be useful in analyzing a particular literary product, such a small dataset need not be the standard against which all other scholarship is measured. Adhering to his minimalist evidentiary protocol, Fish has read quite narrowly in his exploration of digital humanities. It seems his ideas are based primarily on a small selection of digital humanities theorists located within the discipline of Literature and his perusal of the presentation abstracts in the program book from the 2011 Modern Languages Association Conference, a conference which he did not bother to attend. From these limited sources, he constructs a straw man that he is very eager to attack. That is, Fish ignores the burgeoning literature on the role of digital humanities in the academy, much of which, appropriately, is found freely online, whether in the form of blogs or in other open access venues, and is decidedly interdisciplinary. Thus, without any specificity or critical engagement with a key underlying theoretical proposition of digital humanities, namely that there is a relationship between humans and their tools which effects interpretation, it becomes easy for Fish to dismiss the work of so many scholars.

But more importantly, in his dismissal Fish relies on a set of assumptions that are at the heart of what recent, and in fact not so recent, theorists have exposed as problematic. Fish argues that digital technology inhibits us from distinguishing between what is true and false, what is relevant and irrelevant, and what is serious and merely play. To accept this claim, however, is to implicitly accept the above underlying theoretical proposition of digital humanities, that is that

technology is not neutral, and that it interferes with our understanding of content. Or, in other words, technology has agency. This is not a novel perspective. In 1949, Martin Heidegger argued that technology "enframes" our knowledge, and through technology a phenomenon can be revealed, concealed, or changed.[6] Scholars from diverse disciplines—Thomas Kuhn, Marshal McLuhan, Friedrich Kittler, and Bruno Latour, to name just a very few—accept technology as a full-fledged agent in our everyday lives. Thus, the implicit admission that technology is not neutral is clearly not the problematic part of Fish's claim. It is the negative value that Fish assigns to interpretations constructed by the use of digital technologies that raises questions. Thus, Fish does not offer any qualifications for a "neutral" technology that does not distract from the work of interpretation except for the negative qualification of "not-being-digital." Moreover, he does not share with his readers the qualifications that must be met for a "neutral" technology that will produce true, relevant, and serious interpretations.

But this is not to dismiss Fish's concerns altogether. It is not enough for digital humanists just to claim that these methodologies and digital tools lead to new insights, but rather it is incumbent upon digital humanists to clearly demonstrate the interpretational value of using digital technology in their work. The early implementation of digital technology in the academy has focused heavily on archiving and access, and claims of its "game-changing" power perhaps have been a bit premature. We agree with Mark Tebeau when he writes, "[In digital humanities] we think too much about the archive and not enough about the production of interpretation."[7] The

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[6] Martin Heidegger, "The Question Concerning Technology," in *The Question Concerning Technology, and Other Essays* (New York: Harper & Row, 1977), 3–36.

[7] Mark Tebeau, posted February 27, 2012, in response to Tom Scheinfeldt's, "Game Changing: Digital Technology and Performative Humanities," posted February 15, 2012, accessed April 15, 2012. http://www.foundhistory.org/2012/02/15/game-change-digital-technology-and-performative-humanities/

balance of this paper, then, is an attempt to clearly demonstrate how the use of digital technology leads to new interpretations.

The structure of this paper is as follows. In §II we introduce, for those not familiar with ancient India, the archaeological complex of Taxila, of which Sirkap, the site we explore digitally, is but one component. In this section we also provide a brief review of our work in creating Virtual Sirkap in a three-dimensional Multi-User Virtual Environment (MUVE). In §III, we provide the theoretical justifications for our claim that users of the MUVE can have an embodied eidetic experience of the city of Sirkap—an experience that no other study of the site has been able to access. In §IV, we review the canonical interpretations of Sirkap's Fortifications and Northern Gate, and then in §V we demonstrate how a three dimensional environment enhances our experience, and thus alerts us to alternative interpretations, of the city. Finally, in §VI, we offer some concluding remarks.

II. The Archaeological Complex at Taxila, Sirkap, and Virtual Sirkap

Located in northern Pakistan about twenty-two kilometers to the west of Islamabad and about twenty-five kilometers to the northwest of Rawalpindi, the archaeological complex at Taxila was at one time at the intersection of three great trade routes connecting India, Central Asia, and Western Asia. Its early urban form was developed in the late sixth century BCE, and it flourished from the third century BCE to the seventh century CE. Its decline can be linked to changes in the trade routes and a subsequent population decrease.[8] The site is a vast complex of monasteries, temples, and three separate cities, which taken as a whole covers almost forty-five square

[8] Ahmad Hasan Dani, *The Historic City of Taxila* (Tokyo: Unesco, 1986), pp. 175–176.

kilometers. It was "discovered" by Alexander Cunningham in the late nineteenth century as he travelled throughout India following the pilgrimage routes of the Chinese monks Fa Xian, who also traveled through the Indian subcontinent in the fifth century CE (404-414), and Xuan Zang, who did the same in the seventh century CE (630-644).[9] While Cunningham did not engage in full excavations at Taxila, he did carry out some preliminary digs in and around the area.[10] But it was the twentieth century British archaeologist Sir John Marshall who did the most extensive work there from 1913 to 1934. His finds were steadily published in his yearly Annual Reports, and in 1951 Marshall re-published his data in a three volume final report now known simply as *Taxila*.[11] Although there have been various, smaller archaeological digs in the area since the 1951 publication of Taxila, Marshall's work is by far the most comprehensive archaeological record of the site to date.[12]

In Taxila Marshall identified—in addition to the myriad of temples, stūpas, and monasteries—three separate cities. The earliest, and smallest, was located on Bhir Mound and was founded some time after the fourth century BCE. In the late Mauryan period and during Indo-Greek rule, that is the early second century BCE, much of the population moved from Bhir Mound

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[9] Upinder Singh, *The Discovery of Ancient India: Early Archaeologists and the Beginnings of Archaeology* (Delhi: Permanent Black, 2004), 36–39. For Alexander Cunningham's whole program and details of his years as the Director General of the Archaeological Survey of India, see Singh, *The Discovery of Ancient India*, 23–134.

[10] The archaeological data from Taxila published by Alexander Cunningham can be found scattered throughout his annual reports to the Archaeological Survey of India. See, in particular volumes I (1871), II (1872), V (1875), and XIV (1882), all now reprinted by the Archaeological Survey of India.

[11] John Hubert Marshall, *Taxila: An Illustrated Account of Archaeological Excavations Carried Out at Taxila under the Orders of the Government of India between the Years 1913 and 1934* (Cambridge: Cambridge University Press, 1951). Unfortunately, some 400 pages of Marshall's original notes were lost during the Second World War, as he relates in his introduction, '[s]ome of these I was able to replace with the help of duplicates kept for safety's sake at Taxila; others I could not replace, and have had to fall back occasionally on my memory' (Marshall, *Taxila*, xviii).

[12] Excavations and surveys of note include A. Ghosh, "Taxila (Sirkap)," *Ancient India* 4 (1947-48): pp. 41–84; Muhammad Sharif, "Excavation at Bhir Mound, Taxila," *Pakistan Archaeology* 6 (1969): 6-99; Gulzar Muhammad Khan, "Hathial Excavations," *Journal of Central Asia (Islamabad)* 6, no. 2 (1983): 35-44. A very good summary of many of these excavations can be found in Dani, *The Historic City of Taxila*. Most recently, there has been an ongoing excavation of parts of Taxila by a Korean team, but they have yet to put forth a full publication.

to Sirkap. Sirkap flourished from the late second/early first century BCE to the middle of the second century CE under the rule of three successive groups: the Indo-Scythians, Indo-Parthians, and Kushanas. With the arrival of the Kushanas in the late first-century CE, the city's population began to move to Sirsukh which, unfortunately, has yet to be adequately excavated. At Sirkap, then, most of the ruins belong to the period from the late first century CE to the middle of the second century CE, a period in which the city was slowly abandoned (fig. 1). The long term goal of the Virtual Sirkap project is to build a comprehensive model in both space and time: we hope not only to model the urban and extra-urban landscape, but also to present these landscapes through time, that is, to offer snapshots of the whole complex at Taxila at different historical moments. However, we have only just begun, and at this point we have only modeled a small portion of the middle city of Sirkap (fig. 2), from the northern fortifications to Block D, as it might have stood around 100 CE.[13]

While Marshall "uncovered a city," it is important to note that Sirkap was, and still is, completely in ruin, and the structural remains that survive are comprised mostly of footings and walls which stand between one and two meters high. Thus, while Marshall's excavation was remarkable for its horizontal breadth, he was unable to experience the city in its third dimension. The two-dimensionality of the site is further re-enforced by the methods of traditional archaeological publication. In his annual reports to the Archaeological Survey of India, his 1936 Guide to Taxila, and his 1951 magnum opus *Taxila*, Marshall includes site plans, line drawings, maps, trench sections, and photographs, all of which are two-dimensional. What Marshall

[13] While Marshall identified six strata at Sirkap, he excavated to virgin soil in only a few locations, including (1) the 7200 sq. ft. section of House 2 in Block I'; (2) the 12,100 sq. ft. area at the south of Block C'; and (3) a section of the northern fortification wall. The vast majority of the excavation stopped at strata III. Subsequent studies have demonstrated that the extant city we see now represents the city as it stood in circa 100 CE.

experienced, a two-dimensional city, is the same, limited experience to which subsequent scholars have had access. Thus, whether we walk the ruins as they stand today, study them in the scholarly publications of Sir John Marshall and those who have continued his work in both excavating and interpreting the site, or even view them from the above via the satellite photography now readily available from GoogleEarth, the knowledge produced by these various methods does not account for the ways in which the experience of the built environment unfolded for a pedestrian dweller in the three-dimensional city. In other words, such experiences are ambivalent to any eidetic interpretation of Sirkap.

Alternatively, our reconstruction of Sirkap uses a Multi-User Virtual Environment (MUVE) to try and capture what such a three-dimensional experience might have been like.[14] Once a Virtual Sirkap user dons her avatar, she is virtually teleported into a synthetic perspectival environment that engages more sensory modalities than what is typically afforded by conventional media. However, this experience is certainly not the same as being in the city circa 100 CE, and our project has also been to elucidate the limitations and possibilities for the creation of new knowledge about a site based on such models. Thus, in a previous paper we laid bare our assumptions about virtual environments. And while we do not wish to recapitulate all of those arguments here, perhaps a brief summary of that work will help orient the reader to the argument in this paper.[15]

We argued that representations are contingent on the affordances of the medium in which they are deployed and the ways in which that representation is socially constructed and perceived.

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[14] To download the model and read more about how we created it, see www.virtualsirkap.com. The website and the model are both works in progress.

[15] Daniel Michon and Ahmed El Antably, "It's Hard to Be Down When You're Up: Interpreting Cultural Heritage Through Alternative Media," *International Journal of Heritage Studies* (2012): 1-25.

Most scholars erroneously accept text, maps, and photographs as neutral media for the representation of heritage places. And it was here that we used our three-dimensional model of the ancient settlement of Sirkap to show that canonical interpretations of a heritage place can be questioned when such a place is represented using an alternative medium. That is, a three-dimensional MUVE deployed on a game engine, when used to represent Sirkap, produced new insights into the character of the city. For example, we contrasted the experience of viewing the Block D Apsidal Temple in our model with its canonical interpretations that were generated through the media of site maps. We concluded that the canonical interpretation of the Block D Apsidal Temple as an imposing presence within the city—as the visual and ritual focal point for the inhabitants—was not justified. Our (virtual) experience suggested that the Block D Apisdal Temple did not command such an imposing presence on the built fabric of Sirkap. Instead, we argued that the settlement fortifications overshadowed any other structure, at least in the affluent northern parts of the settlement that we were able to model, and must have imposed their presence on the dwellers of the place. Reading the urban fabric this way led us to question the ways in which the socio-religious life of Sirkap was typically depicted in the canon. The imposing defensive structures suggested that the military apparatus, whether an independent entity or an oppressive arm for the ruling classes of Sirkap, had a stronger role than previously acknowledged.

We want to stress again that our MUVE lends itself to an eidetic three-dimensional experience of a synthetic virtual reconstruction of Sirkap, which we labeled “Virtual Sirkap.” In Virtual Sirkap, users are allowed to don their avatars, walk liberally, and experience the reconstruction of the ancient settlement. As phenomenology is the philosophy that concerns itself with the study of human experiences, it is best suited for a study of the experience of walking the streets of Virtual Sirkap. Moreover, phenomenology is the favorite philosophical theory and

research toolkit for much scholarship on place,[16] especially for post-processual humanist archaeologists.[17]

III. Phenomenology, Heritage Places, and Archaeology

The term "phenomenology" was first coined by the German eighteenth-century mathematician Johann Heinrich Lambert (1728-1777) to describe the science of appearances and was later used by many scholars to denote different concepts.[18] The first philosopher to develop phenomenology into a method of thought was Edmund Husserl (1859-1938) and thus he is conventionally considered the founder of phenomenology in philosophy. Many later philosophers elaborated on Husserl work and developed their own versions, rendering the term almost meaningless unless it is attached to a phenomenologist's name. Examples of such "phenomenologies" include Martin Heidegger's hermeneutic phenomenology, Hannah Arendt's phenomenology of the public world, Jean-Paul Sartre's existential phenomenology, Maurice Merleau-Ponty's phenomenology of embodiment, Simone de Beauvoir's feminist phenomenology, etc. In the past few decades, humanist archaeologists have taken up the challenge of the phenomenological method and applied it to the archaeological record.[19] Christopher Tilley's work on prehistoric Britain has been at the forefront of this movement, and he argues that general beliefs, feelings, and attitudes of humans in the past can be explained by examining the ways in

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[16] Tim Cresswell, *Place: A Short Introduction* (Malden: Blackwell Publishers, 2004), 49.

[17] Bruce G. Trigger, *A History of Archaeological Thought* (Cambridge: Cambridge University Press, 1999), pp. 472–473.

[18] See for example, see Joseph M. Bochenski, *The Methods of Contemporary Thought*, trans. Peter Caws (Holland: D. Reidel Pub. Co., 1965) and Seppo Sajama and Matti Kamppinen, *A Historical Introduction to Phenomenology* (London: Croom Helm, 1987).

[19] Joanna Brück, "Experiencing the Past? The Development of a Phenomenological Archaeology in British Prehistory," *Archaeological Dialogues* 12, no. 1 (2005): 45-72.

which their environments were perceived and then used.[20] If phenomenological archaeology is primarily about the study of experience, then the issue of perception, and in this case visual perception,[21] is of paramount concern in our interpretations of Sirkap. As Edward Casey so eloquently states, "[i]n a phenomenological account, the crux in matters of place is the role of perception." [22] Thus, we must attend closely to the role of visual perception in our interpretations.

In our previous paper, we relied on Michele de Certeau's insights regarding the difference between the "concept of the city" and "urban practices" [23] to re-orient our visual perceptions of Sirkap. We argued that all previous scholars of Sirkap necessarily took the position of de Certeau's "voyeur-god," apprehending, that is visually perceiving, the whole city in one glance as it lay before them in two-dimensions, whether that be via the media of site maps, site plans, satellite images, or photographs of the ruins.[24] This is not a criticism of previous scholarship, but rather a recognition of the limitations of the affordances of the media which were previously available. And while de Certeau served us well in attuning us to the difference in perspective between the voyeur-god and the walker of the city, we ran into a theoretical dead-end when applying his distinction between spatial strategies and spatial tactics.[25] For de Certeau, spatial strategies refer to the

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[20] See for example, see Christopher Tilley, *A Phenomenology of Landscape: Places, Paths, and Monuments* (Oxford: Berg, 1994); Christopher Tilley, "The Powers of Rocks: Topography and Monument Construction on Bodmin Moor," *World Archaeology* 28, no. 2 (1996): 161-176; and Christopher Tilley, "Round Barrows and Dykes as Landscape Metaphors," *Cambridge Archaeological Journal* 14, no. 02 (2004): 185-203.

[21] Part of our Virtual Sirkap project is to add other sensory perceptions beyond vision, such as auditory perception. But we have not added sound to our model yet. Obviously, other sensory perceptions such as smell and touch are not possible (yet?) in a virtual environment.

[22] Edward Casey, "How to Get from Space to Place in a Fairly Short Stretch of Time: Phenomenological Prolegomena," in *Senses of Place*, ed. Steven Feld and Keith H. Basso (Santa Fe: School of American Research Press, 1996), 17.

[23] Michel de Certeau, *The Practice of Everyday Life*, trans. Stevan Rendall (Berkeley: University of California Press, 1984), 91–95.

[24] Of course one could walk the ruins as well, but once again we must remind the reader that the city is completely ruined and only the architectural footings remain. So, while walking the ruins does add a bit of the third dimension (height, volume), it is severely limited.

[25] de Certeau, *The Practice of Everyday Life*, 29–42.

production and imposition of spaces upon inhabitants by dominant classes. Spatial strategies rely upon power relationships to create "proper" space, that is, the built environment is set up to coerce the inhabitant into perceiving and using the space in certain ways, and thus spatial strategies attempt to impose certain meanings through this perception and use. Against these dominant strategies, according to de Certeau, emerge spatial tactics. Spatial tactics are not completely free, but must play on and with the built environment imposed upon them and organized by those in power. Spatial tactics undermine the hegemonic spatial strategies by using space in ways its creators had not intended/imagined. While this schema might be very useful for contemporary studies, it is very difficult[26] to know what spatial tactics individual past inhabitants of Sirkap employed. It is, however, possible to determine the cultural norms of perception of particular architectural features by attending to the presentation of these features in other contemporary media such as reliefs, sculpture, and text. These cultural norms often do not undermine hegemonic spatial strategies at all, but rather reflect them. Thus, de Certeau positions spatial tactics as an oppositional response to spatial strategies, and in doing so he does not elucidate their interdependence and co-production.[27]

In this paper, we find that Henri Lefebvre's trialectics of the production of space is a better schema to employ for excavating the meanings encoded into, and experienced by users of, the built environment at Sirkap. De Certeau was influenced by Lefebvre's work, but in the process of building on Lefebvre's notion of "lived space" and delving deeper into how, as de Certeau calls them, "spatial tactics" work, he flattened out Lefebvre's work. Lefebvre famously argues that

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[26] We hesitate to say "impossible" here, as Henri Lefebvre suggests some ways in which one might be able to recover these "spatial tactics," or what he calls "lived space."

[27] Robert Dutton, "Between Narratives & Practices: A Critique of Michael de Certeau's 'Spatial Stories' (Part 3)," online blog, http://criticalitch.wordpress.com/2012/01/31/a-critique-of-michael-de-certeaus-spatial-stories-part-3-between-narratives-practices/.

"*(Social) space is a (social) product*" (italics in original).[28] Space is produced by the relationship between three elements, and in *The Production of Space* Lefebvre clearly outlines these three elements on two different occasions (p. 33 and pp. 38-39), employing two sets of terminology.[29] We have combined these descriptions below (Lefebvre's two sets of terminology are in italics):

> *spatial practice*, which is closely associated with *perceived space*, embraces production and reproduction, and the particular locations and spatial sets characteristic of each social formation. Spatial practice ensures continuity and some degree of cohesion. In terms of social space, and of each member of a given society's relationship to that space, this cohesion implies a guaranteed level of competence and a specific level of performance … From an analytical standpoint, the spatial practice of a society is revealed through the deciphering of its space … A spatial practice must have a certain cohesiveness, but this does not imply that it is coherent (in the sense of intellectually worked out or logically conceived).
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> *representations of space*, which are closely associated with *conceived space*, are tied to the relations of production and to the 'order' which those relations impose, and hence to knowledge, to signs, to codes, and to 'frontal' relations … [They are] conceptualized space, the space of scientists, planners, urbanists, technocrat subdividers and social engineers … all of whom identify what is lived and what is perceived with what is conceived … this is the dominant space in any society … [and] tend towards a system of verbal (and therefore intellectually worked out) signs.
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> *representational spaces*, which are closely tied with *lived space*, embody complex symbolisms, sometimes coded, sometimes not, linked to the clandestine or underground side of social life, as also to art … [They are] space as directly lived through its associated images and symbols, and hence the space of 'inhabitants' and 'users' … this is the dominated, – and hence passively experienced – space which the imagination seeks to change and appropriate.

Key to Lefebvre's trialectic is that these three realms are interconnected, so that "the individual member of a given social group may move from one to another without confusion … [and they form a coherent whole] only in favorable circumstances, when a common language, a consensus

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[28] Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Malden: Blackwell, 1991), 26.
[29] Ibid., 33, 38–39.

and a code can be established."[30] Lefebvre gives the example of the paradigmatic Western town from the Italian Renaissance to the nineteenth century as a geographical and chronological frame in which these three elements reached a consensus, in which a common code was established that was discerned coherently and convincingly by all on each level. The balance of this paper will reflect our belief that ancient Gandhāra in the early historic period—the geographical and chronological frame in which Sirkap firmly resides—also saw a confluence of 'favorable' circumstances in which a common code (here a visual code more so than a linguistic code[31]) was established, and that because of this it is a very good site to do exactly what Lefebvre wants us to do: make the abstract concrete. That is, as Lefebvre argues, his trialectic "loses all force if it is treated as an abstract 'model.' If it cannot grasp the concrete (as distinct from immediate), then its import is severely limited, amounting to no more than that of one ideological mediation among others."[32]

The visual code that existed in Gandhāra that we seek to illuminate comes from two main sources. The first source is the vast archive of Gandhāran sculpture and reliefs. For the past century and a half, scholars have been actively working to discover and document these works of art.[33] When taken together, it is clear that the region of Gandhāra in the early historical period had a common visual code that was shared by those who created these sculptures and reliefs and those that viewed them. Thus, this archive can be put into conversation with our second source: the urban

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[30] Ibid., 40.

[31] The textual record, the only available linguistic code available to historians and archaeologists, is not examined in this paper. See note 62 below.

[32] Lefebvre, *The Production of Space*, 40.

[33] However, as Rekha Morris argues, "[s]cholarship concerned with the art of Gandhāra has concentrated on two inter-relatied problems: the problem of chronology and the problem of style," in "Prolegomena to a Study of Gandhāra Art" (Ph.D. diss., University of Chicago, 1983), 1. In her thesis, Morris identifies no less than sixteen major works that collect and document Gandhāran art and sculpture. And since the time of the publication of her thesis, there have been even more studies devoted to Gandhāran art. The most recent, and perhaps the most beautifully illustrated, is Isao Kurita, *Gandharan Art: The Buddha's Life Story and The World of the Buddha*, 2 vols., Revised and Enlarged. (Tokyo: Nigensha Publishing, 2003).

architecture of Sirkap. As we have already outlined above, all studies of Sirkap's architecture have been based on two dimensional media, and as such elucidate the conceived space of the city (the space of the architect). Two dimensional media afford neither perceived space nor lived space. We argue that our three-dimensional MUVE, "Virtual Sirkap," affords perceived and lived space, as the users can move their avatar, an anthropomorphic representation of themselves, through the city and experience its multi-dimensionality. However, while we put Lefebvre to constructive use in this paper, Virtual Sirkap also breaches Lefebvre's categories. That is, while we are able to gain insights into how past inhabitants perceived the space by paying close attention to how the architecture is in conversation with the code that existed in Gandhāra, it is very difficult to access past inhabitants' lived space. Certainly, Virtual Sirkap is an environment in which we can dwell with others, but as we "live" in that space virtually, it is our lived space that is elucidated, not others'. Further, we have created a double system: the digital environment we created (Virtual Sirkap) exists and is bounded by our own socially produced physical, not digital, space.

To bolster our theoretical position, that is that we can gain insight into the cities conceived and perceived space, we attend closely to Merleau-Ponty's phenomenology of embodiment, that is the study of the perception of space through the body. For Merleau-Ponty, we are our bodies and no lived experience can exist outside our bodies.[34] Applying Merleau-Ponty's insights to the issue of the impact of conventional, two dimensional, media on our interpretations suggests these conventional media do not afford a rich embodiment. As a result, and according to Merleau-Ponty, they suffer a loss of the ostensible significance of space:

> … if the words "enclose" and "between" have a meaning for us, it is because they derive it from our experience as embodied subjects. In space *itself* independently of

[34] Maurice Merleau-Ponty, *Phenomenology of Perception* [Phénoménologie de la perception (1945)] (London: Routledge, 2002).

> the presence of a psycho-physical subject, there is no direction, no inside and no outside (emphasis in original).[35]

As our current knowledge of Sirkap's history, society, and built environment are limited, we accept that it is difficult to reconstruct the embodied experiences of the inhabitants of Sirkap, experiences that were shaped by socio-historical conditions clearly remote from our present condition. Yet, despite these difficulties, we argue that a reconstruction of an embodied pedestrian experience of the built fabric of Sirkap is still possible, even if it is reduced to a mainly eidetic experience. But by invoking Merleau-Ponty, another complication arises. Since Virtual Sirkap is a virtual synthetic reconstruction of the ancient settlement that is displayed on a two-dimensional screen, how can we compare the virtual user experience to the embodied experiences of someone who actually walked the streets of Sirkap? That is, how can we claim an experience of embodiment in a MUVE? If we can make a sound argument for an embodied experience in Virtual Sirkap, we can then claim that our MUVE affords the spatial practice of a perceived space.

Clearly, there is very little haptic perception (processed input from the sense of touch) in a 3D virtual environment,[36] but this does not mean there is very little kinesthesis. Merleau-Ponty recognized the fundamentally integrated experience created from visual and tactile perception, and he suggested that visual perception modifies tactile data sufficiently to provide a background for a bodily experience of abstract movement.[37] Drawing on the work of Jin Moen and Jonas Herløv Wæver, we understand proprioception and kinesthesis as subcategories of haptic perception. That

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[35] Ibid., 236.

[36] There is some haptic perception: the touch of the player's fingers on the game controller is translated into the movement of the avatar in virtual space. But we are not going to argue that this haptic perception is significant in our kinesthetic experience of a 3D virtual environment. See Steve Swink, *Game Feel: A Game Designer's Guide to Virtual Sensation* (Boston: Morgan Kaufmann Publishers/Elsevier, 2009), 26–28, for a discussion of the "amplified" proprioceptive sense that accompanies such minimal haptic perception.

[37] Merleau-Ponty, *Phenomenology of Perception*, 133–134.

is, as Wæver argues, "proprioception [refers to] all those senses that are initiated within the body, and kinesthesia as the feeling of motion."[38] Thus, this "feeling of motion," or kinesthesia, need not be dependent on haptic perception, but it can be initiated by our kinesthetic memory working in concert with visual and auditory perception. As Moen's study on dance and human movement technology clearly demonstrates, kinesthetic memory—something that is particularly heightened for dancers and athletes who have the "ability to imagine anatomically and physically correct paths without actually moving, making use of their "kinaesthetic" sense and bodily memory"[39]—is central to our experience of the world. Thus, as Wæver concludes, 3D virtual worlds create a modified embodied experience by relying on visual and aural outputs to stimulate the player's kinesthetic perception.[40]

This modified embodied experience which creates a state of mind in which users feel that they are "there" in a virtual place is conventionally called "presence." In a MUVE, there are other characters in the world as well, and thus there is also a feeling of "co-presence," being "there together." As such, presence implies a suspension of disbelief where the user tends to overlook the limitations of the medium, so that these do not interfere with their acceptance of the embedded message. Richard Bartle describes four levels of presence: player, avatar, character, and persona.[41]A user is considered a player when she perceives the virtual environment as a computer construction with which she does not identify. She becomes an avatar when she regards the object she controls as her virtual "representative." At this stage, she often refers to her avatar in the third

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[38] Jonas Herløv Wæver, "Kinesthesia and Game Spaces" (Denmark: IT University of Copenhagen, 2011), 11. Wæver relies on Moen's discussion of these variously defined terms found in her thesis, Jin Moen, "Kinaesthetic Movement Interaction: Designing for the Pleasure of Motion" (Stockholm: Kunglige Tekniska Högskolan, 2006).

[39] Moen, "Kinaesthetic Movement Interaction," 13.

[40] Wæver, "Kinesthesia and Game Spaces," 12.

[41] Richard Bartle, *Designing Virtual Worlds*, 1st ed. (Indianapolis: New Riders, 2004), 154–155.

person. A user turns into a character when her avatar becomes her "representation." The avatar, thus, is an extension of the user's self who refers to it in the first person. The last stage, the persona, is when the user perceives the avatar as herself and all distinctions between avatar and user is gone. The user at this stage typically drops her actual identity upon entry into the virtual place and assumes the identity of her avatar.

Further, Lombard and Ditton identify six dimensions of presence: (1) social richness, (2) realism, (3) transportation, (4) immersion, (5) social agency, and (6) medium agency.[42] Social richness is the extent to which a user perceives a virtual place as personally and socially intimate when it is used to interact with other people. Realism is the ways in which a user perceives a virtual place as the "real" thing. Transportation takes three different forms. A user can perceive herself as transported to a virtual place: She is there. She can also perceive virtual objects or the place itself as transported to her: It is here. Finally, she can perceive herself transported to a virtual place that she shares with one or more persons: We are together. Immersion is the extent to which the medium submerges the user's perception. In other words, immersion is the phenomenon in which a user's senses are partially or totally engaged by the medium and disengaged from the actual world. Social agency refers to the degree to which the user responds socially to an avatar as an actual person and not a representation of that person. For example, it may not make sense for a user to consider and respect interpersonal distances (proxemics) between avatars. Yet, most users do.[43]

At the current phase of Virtual Sirkap, we do not have empirical claims to presence. That is, we did not measure users' response to it, but rely on our own experience of the MUVE. We are

[42] Matthew Lombard and Theresa Ditton, "At the Heart of It All: The Concept of Presence," *Journal of Computer-Mediated Communication* 3, no. 2 (1997).

[43] Ibid.

simply saying that careful design can lead to presence where users can at least engage with the environment at the level of the "player," Bartle's first level of presence. Users may not identify their avatar as themselves or as their representations, but they can still think of avatars as humanoids. Again, Merleau-Ponty helps us here as he recognizes that there are basic human commonalities in perceiving the world:

> In so far as I have hands, feet, a body, I sustain around me intentions which are not dependent upon my decisions and which affect my surroundings in a way which I do not choose. These intentions are general … they originate from other than myself, and I am not surprised to find them in all psycho-physical subjects organized as I am.[44]

Here Merleau-Ponty opens a space for understanding spatial practice in the past.[45] For example, by comparing the size of their avatars to the size of nearby objects, users can construct a sense of scale, just as architects typically put a small model of a human figure in their design models to provide their clients with a sense of scale. Relatively higher meanings, like inside, enclosure, sublimity, etc., can develop as the users move upward on Bartle's scale. The users may also identify the synthetic environment with actual places they experience in actual life. Through these common human processes, they can have, we hope, an embodied eidetic experience of the place that was not available for Marshall and other scholars of Sirkap.

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[44] Merleau-Ponty, *Phenomenology of Perception*, 511.

[45] This is a basic assumption: that we can gain some kind of access to the past. But it is an assumption that is not readily agreed upon, and without agreement this creates problems for interpretation. Lars Fogelin sums up the problem this way: "[p]henomenology was adopted by archaeologists who had … [a strong] commitment to the position of social constructivism—that no objective world exists outside of our own individual perceptions of it … [These archaeological phenomenologists rejected] any commonalities in perception or ways of thinking … Where the goal of archaeological research is an understanding of how people in the past understood and perceived the world, archaeological phenomenologists have argued themselves into a position of irrelevance. This is all the more frustrating since many of their specific observations and conclusions are both insightful and compelling,"in *Archaeology of Early Buddhism* (Lanham MD: AltaMira Press, 2006), 75.

IV. Canonical Interpretations of the Fortifications and the Northern Gate

The city of Sirkap was completely surrounded by a massive, irregularly shaped, stone fortification wall with numerous defensive bastions, conventionally called the Fortifications.[46] The thickness of the Fortification wall varied between 4.5 m and 6.5 m, and Marshall estimates the height to have been between 6 m and 9 m with the bastions being even taller.[47] The number of gateways embedded in the Fortifications is unclear, but most scholars agree there would have been at least four—one at each of the cardinal directions—but there is clear evidence of a large gateway at the northern end of the city, conventionally called the Northern Gate. A full decade after Marshall's excavations ended, a further study of the Fortifications was carried out by Amalandanda Ghosh and Sir R.E.M. Wheeler in 1944-45. Ghosh and Wheeler produced a more detailed map of the extent of the wall[48] and a line drawing of the north-east corner-bastion.[49] Marshall's and Ghosh and Wheeler's excavation reports are invaluable documents for understanding the physical details of these archaeological features. However, for this paper, we are most concerned with the interpretation, that is analysis beyond description of the remains, of these

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[46] For the most recent comprehensive review of fortifications in all of ancient South Asia, see Jean Deloche, "Étude Sur Les Fortifications de l'Inde. I. Les Fortifications de l'Inde Ancienne," *Bulletin de l'Ecole Française d'Extrême-Orient* 79, no. 1 (1992): 89-131. In this study, Deloche does not offer any phenomenological interpretations of the various fortifications, but it is a very good study of both the literature and archaeological data.

[47] Marshall, *Taxila*, 113–114.

[48] On the site map produced by Marshall (see Ibid., plate 1), the fortifications are designed as one irregularly shaped polygon—the north and east sides are quite regular, while the south and west sides are defined in part by the natural contours of the small hills and Tamra Nala river respectively. However, in the more detailed map of the fortifications produced by Amalandanda Ghosh and Sir R.E.M. Wheeler, there is clear evidence of a interior cross-wall (see Ghosh and Wheeler, "Taxila (Sirkap)," figure facing p. 84). This wall is located at the northern edge of the two hillocks in the southern portion of the enclosure. From west side at the Tamra Nala, Ghosh and Wheeler find evidence of an actual fortification wall, and further to the east he writes "Cross-Wall (?)". This wall divides the enclosed territory into (1) a "Lower City" which contains the urban center in a grid-layout, and (2) an "Upper City" which contains two monasteries, a larger structure that is perhaps a Mahal (palace), and a high mound about which Ghosh speculates might have been a Citadel. Ahmad Dani, in further surface explorations, confirms both Marshall's and Ghosh and Wheeler's accounts of the Fortifications, see *The Historic City of Taxila*, 91–92.

[49] Ghosh and Wheeler, "Taxila (Sirkap)," 49 fig. 2.

two archaeological features. But before offering our own interpretation, we will first take up the canonical interpretations of each feature in turn.

Most of the interpretational analyses of the Fortifications revolve around the inter-related questions of their date of construction and cultural affiliation.[50] In examining both of these issues, historians and archaeologists have focused almost solely on, in Lefebvre's terms, conceived space.[51] These are certainly complex and important issues, and they are made even more difficult as the Fortifications were not built all at once, but rather they were strengthened and expanded over at least four centuries, if not more. While there is a body of scholarship focused on masonry analysis which is the preferred method of dating the development of the Fortifications through time, most scholars are more concerned with their original date of construction.[52] Marshall first suggested that the Fortifications were founded in the middle of the first century BCE under the influence of Scythian rule.[53] But after reassessing the evidence in his excavation report, *Taxila*,[54] he argued this was unlikely and that it was the Bactrian Greeks in the early second century BCE who built the stone wall. This foundational date, pegged to the arrival of the Greeks, has been

[50] The focus of scholarship on the Fortifications follows from the scholarship of Gandhāran art in general, which also concerns itself with chronology and style. See n. 32 above.

[51] As Lefebvre writes, historians who study space are inclined to "establish a chronology … [and] study the construction of monumental buildings," (*The Production of Space*, 38) and both of these trends dominate the study of Sirkap.

[52] See Marshall, *Taxila*, 114; Kurt A. Behrendt, *The Buddhist Architecture of Gandhāra* (Leiden: Brill, 2004), 255–268; and T. Fitzsimmons, *Stupa Designs at Taxila* (Kyoto: Institute for Research in Humanities Kyoto University, 2001). Analysis of the masonry types, not only in the various construction phases of the fortification wall but also in the construction phases of stupas and residential walls as well, has become the preferred method of dating the material remains of Sirkap. In refining Marshall's analysis, Behrendt finds evidence for four types of masonry in his chronological system, whereas Fitzsimmons finds evidence for twelve phases. While Fitzsimmons may be right that there were more than four phases of construction, it is very difficult to distinguish many of his phases, and the Behrendt system seems to be more applicable, although less precise, over all of Sirkap.

[53] John Hubert Marshall, *A Guide to Taxila* (Delhi: Manager of Publications, 1936), 78.

[54] Marshall, *Taxila*, 116–117.

followed by many,[55] but it has also been challenged. Ghosh and Wheeler (1944-45) agreed with Marshall's first theory: that the Fortifications were begun in the second half of the first century BCE under Scythian influence.[56] Their date has been backed most recently by Gerard Fussman whose analysis relied on comparative evidence of architecture from Central Asia.[57] More recently, Rachel Mair (2005) has argued that the design of the Fortifications could certainly have emerged from an indigenous Indian tradition, and was not necessary to look to outside influences.[58]

The Northern Gate has received far less attention than the Fortifications, and very little has been said about it beyond Marshall's description and interpretation found in *Taxila*. In fact, all discussions of the Northern Gate merely recapitulate Marshall's speculations.[59] Marshall's main concern with this archaeological feature was to explain both its odd position and its architectural structure. Marshall notes that the Northern Gate "was set, not directly opposite the end of the main street, but a little to the east of it, so that they street itself was masked from view as one entered the gateway."[60] He offered two reasons for this off-center orientation: (1) for defensive purposes, as

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[55] The two most prominent confirmations are found in Dani, *The Historic City of Taxila* and Saifur Rahman Dar, *Taxila and the Western World* (Lahore: Al-Waqar Publishers, 1984).

[56] Ghosh and Wheeler, "Taxila (Sirkap)".

[57] Gérard Fussman, "Taxila: The Central Asian Connection," in *Urban Form and Meaning in South Asia: The Shaping of Cities from Prehistoric to Precolonial Times* (London: University Press of New England, 1993), 91.

[58] While the issue of "influence" is difficult to settle definitively, we think Mairs' argument for significant indigenous influence on the plan of Sirkap has much merit. Her argument is enhanced by using Michael E. Smith's conceptual framework for understanding the nuances of orthogonal city layouts ("Form and Meaning in the Earliest Cities: A New Approach to Ancient Urban Planning," *Journal of Planning History* 6, no. 1 [February 1, 2007]: 12–21). That is, Smith argues that identifying a city as planned if orthogonal and unplanned if not, is simplistic. There are planned cities that do not rely on orthogonal principles, and there are also varieties and degrees of orthogonality. For example, Sirkap's grid-like layout fits under Smith's category of an integrated orthogonal plan, which "occurs when buildings are aligned orthogonally with respect to one or more large-scale features" (p. 15). For Sirkap, the main feature is the Main Street which gives the city its structure. Integrated orthogonal plans can be found in Harappan period city planning as well: both Mojenjo-Daro and Harappa are also highly planned cities which use a main thoroughfare as their structuring principle. Note here that we modify Smith's identification of Mohenjo-Daro's city plan as semi-orthogonal, and we would rather see it identified as an integrated orthogonal plan.

[59] See Dilip K. Chakrabarti, *The Archaeology of Ancient Indian Cities* (New Delhi: Oxford University Press, 1995); Dani, *The Historic City of Taxila*; and Deloche, "Étude Sur Les Fortifications de l'Inde. I. Les Fortifications de l'Inde Ancienne," 89–131.

[60] Marshall, *Taxila*, 115.

this orientation would "check any sudden rush of assailants and prevent them from sweeping through the gateway and up the Main Street." And (2) for sanitation purposes, as "during the rainy season the flood-water pouring down the Main Street would expend its force to some extent against the city wall, or rather against the very solidly built guardhouses on its inner side," before entering a drain that ran under the wall. As for the architectural structure of the Northern Gate, Marshall is emphatic that "[h]ere in Sirkap, the plan was not, of course, Indian."[61] In his descriptions, he employs the architectural principles and language of the western Classical world and medieval Europe, identifying such structures as the "barbican" and the "battlements." Marshall is not unaware that ancient India had different architectural principles and its own terminology, but he, like many others, assumes that these structures were derived from non-Indian sources. Marshall came to this conclusion because the footprint of the Northern Gate did not conform to the plan of a typical Indian gatehouse as described in the ancient Indian text the *Arthaśāstra*. Here, then, is an example of the powerful normative force that an ancient text exerts on modern interpretation: many scholars have given more weight to a disembodied, idealized textual description of the ancient South Asian city than to actual, excavated ancient cities themselves.[62] Thus, both the

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[61] Ibid., 115, note 1.

[62] The use of idealized textual descriptions of how cities should look rather than exploring how cities did look—that is relying on text rather than material culture—in the analysis of ancient Indian cities is not limited to Marshall. Historians of ancient India rely almost exclusively on normative texts such as the *Arthaśāstra*, the *Mānasāra*, the *Mayāmatā*, and the *Kāmikagāma* (the first text is a manual of statecraft, while the last three are ancient architectural manuals) to identify the cultural coding of meanings within the built environment. Just a short list of estimable historians who have used this methodology includes B. B. Dutt, *Town Planning in Ancient India* (Calcutta: Thacker, Spink & Co., 1925); A.M. Hocart, "Town Planning," *Ceylon Journal of Science* (Section G) 1, no. 4 (1928): 150-156 and "Town Planning," *Ceylon Journal of Science* (Section G) 2, no. 2 (1930): 86-87; Jeannine Auboyer, *Daily Life in Ancient India, from Approximately 200 BC. to AD 700*, trans. Simon Watson Taylor (London: Weidenfeld & Nicolson, 1965); R. Thapar, *Asoka and the Decline of the Mauryas: with New Afterword, Bibliography, and Index* (New Delhi: Oxford University Press, 1997). For an incisive critique of such textual methodologies using the ancient city of Anuradhapura (located in modern Sri Lanka) as it subject, see R. A. E. Coningham, "The Spatial Distribution of Craft Activities in Early Historic Cities and Their Social Implications," in *South Asian Archaeology 1995: Proceedings of the 13th Conference of the European Association of South Asian Archaeologists*, ed. F. R. Allchin and Bridget Allchin (New Delhi: Oxford University Press, 1993), 351-363.

Fortifications and the Northern Gate have been studied primarily from the perspective of conceived space as that is what both the conventional two-dimensional media and the textual record afforded. In our MUVE, however, we are able to reconstruct these walls and experience them as a three-dimensional enclosure, and thus we can begin to think about the experience of Sirkap's perceived and lived space.

V. The Fortifications and the Northern Gate: Interpretations Emerging from the MUVE

Entering the city through the Northern Gate is an excellent example of how the use of a MUVE can enhance, and even change, our experience, and thus our interpretation, of an ancient city. As discussed above, the canonical interpretations of the Northern Gate have centered on its functional uses for defense and sanitation, but nothing has been said about its meaning. That is, as Henri Lefebvre argues, historians "concern themselves chiefly with events might be inclined to establish a chronology of decisions affecting the relations between cities and their territorial boundaries, or to study the construction of monumental buildings,"[63] but there is little interpretation of how the city was experienced by its inhabitants.

Archaeologists have tried to convey the experience of entering through the fully built Northern Gate by including photographs from just outside the ruins. For example, Marshall includes a photograph in Taxila with the caption "View from the Northern Gateway with a peep into the city," (fig. 3).[64] Similarly, Dani includes a photograph he took of the Fortifications and the Northern Gate in his book *The Historic City of Taxila* with the caption, "northern fortification wall

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[63] Lefebvre, *The Production of Space*, 38.
[64] Marshall, *Taxila*, plate 11b.

and with the main entrance [Northern Gate] and bastions," (fig. 4).[65] Marshall's "peep" is really more than a "peep" as the viewer can see much of the ruins of the city behind the wall, while in Dani's photograph we see the east-west orientation of the Fortifications, but not much else. In both photographs, the ruins are, for all practical purposes, two-dimensional: they document just the footings and do not suggest any kind of three-dimensional experience. For example, in Marshall's "peep" we are left with the paradoxical experience of seeing both too much and too little at the same time. We see "too much" because the Fortification walls are in ruins, as are all the walls of the city buildings beyond, and therefore we see deep into the city: our sightlines are not blocked by three-dimensional structures. But we also see "too little" because this vision is a jumbled mass of footings of which we can make no real sense: there are no identifiable buildings with which to orient ourselves. Dani's photograph offers the same vision: we are able to look directly over the top of the 1.5 m high footings of the ruined Fortifications and Northern Gate into an equally flat city, that is a city with no vertical demarcations. These photographic "experiences" of approaching the city from the north are not any different than the experiences available to all subsequent scholars and those visiting the site today.

On the other hand, in Virtual Sirkap, the visitor who first encounters the Fortifications from outside the Northern Gate has a very different experience, an experience to which no scholar or visitor has heretofore had access. For this visitor, the Northern Gate is an imposing, three-dimensional structure and a landmark that highlights the entrance to the settlement. From a distance, the buildings inside the Fortifications are not visible at all, but rather, the only experience available is that of the stone wall and its military apparatus (fig. 5a). The same experience holds

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[65] Dani, *The Historic City of Taxila*, fig. 19.

true from the point of view of a visitor approaching from an oblique angle (fig. 5b). As the visitor approaches the Northern Gate head-on, the Block A stupa court, located within the walls of the city, comes into view, and it is visually framed by the Northern Gate itself (fig. 6). This visual experience is absent in all previous analyses. Such a framing delivers a message, that is it supplies meaning, to the approaching pedestrian about the relationship between religion and the state in the life of settlement: the military apparatus and the religious community are intimately intertwined. But this is not a one-time message given as the visitor approaches. Rather, once the Virtual Sirkap user has passed through the Northern Gate, the imposing presence of the Fortifications does not diminish. As she begins to explore the city, she notices that the guards patroling the top of the Fortifications are able to follow her movement in all open areas. Whether on the Main Street, in a side alley, or even in a sacred space, the visitor is easily surveilled from above. That is, both the outward and inward viewsheds (figs. 7a and 7b), to use the terminology of Geographic Information Systems (GIS), are dominated by the military apparatus.

This experience of an imposing military apparatus, of being surveilled, and of the omnipresence of the State has not been expressed in any of the previous literature on Sirkap. In fact, the few attempts to express the "character" of the city and its inhabitants have all focused on its religiosity. For example, Marshall imagines walking the city and writes:

> . . . between the shops [that run down Main Street] can be seen sacred temples and shrines overlooking the main thoroughfare; for the people of Taxila are a devout people, and the monuments of their faiths are as conspicuous a feature inside the city walls as they are in the country roundabout.[66]

[66] Marshall, *Taxila*, 140.

The assumption that ancient Indians were "religious" in character, and thus the main "meaning" of their cities was religious as well, is quite common.[67] That is, most analyses of ancient Indian cities look to high-level meaning—the cosmological and supernatural symbolism that may be encoded in buildings and city layouts—as the only meaning expressed.[68] When exploring Sirkap through our three-dimensional MUVE, the "conspicuous features" are certainly not the "monuments of faith" that might be indicators of some kind of cosmic schemata, but rather what we might call the "monuments of the military." In fact, even within the confines of one of the very "monuments of

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[67] In the last quarter of the twentieth century, scholars turned away from functional-economic based interpretations of the plans of ancient cities and towards paradigms which understood the ancient city in terms of paradigmatic replicas of cosmological principles. These scholars have generally followed the theoretical works Mircea Eliade, *The Sacred and the Profane: The Nature of Religion*, trans. William R. Trask (New York: Harcourt, 1959); Paul Wheatley, *City as Symbol* (London: Lewis, 1969) and *The Pivot of the Four Quarters: A Preliminary Enquiry into the Origins and Character of the Ancient Chinese City.* (Edinburgh: Edinburgh University Press, 1971); and Jeffrey F. Meyer, *Peking as a Sacred City* (Taipei: Chinese Association for Folklore, 1976). Both Wheatley and Meyer focus on urban form and meaning in China, and a series of studies focused on Indian urban form followed, see for example see Robert I. Levy and Kedar Raj Rajopadhyaya, *Mesocosm: Hinduism and the Organization of a Traditional Newar City in Nepal* (Berkeley: University of California Press, 1994); Rana P. Singh, *Cosmic Order and Cultural Astronomy: Sacred Cities of India* (Newcastle upon Tyne: Cambridge Scholars Publishing, 2009); and the edited volume dedicated to the subject, J. McKim Malville and Lalit M Gujral, *Ancient Cities, Sacred Skies: Cosmic Geometries and City Planning in Ancient India* (New Delhi: Aryan Books International, 2000). As John Fritz (p. 257), in introducing his argument that 14th-17th c. CE Vijaynagara was a cosmic city, writes, "Indeed, some cities seem to have *no other purpose* than to act as sites of worship," in "Was Vijayanagara a Cosmic City?," in *Vijayanagara-City and Empire: New Currents of Research* (Stuttgart: Steiner, 1985), 257-273 (italics mine).

[68] The terminology employed in this section—high, middle, and lower level meanings—comes from Amos Rapoport's work. He argues that we can discern three levels of meaning that built environments communicate:

a. "High-level" meanings [are] related to cosmologies, cultural schemata, world views, philosophical systems, the sacred, etc.
b. "Middle-level" meanings [are] those communicating identity, status, wealth, power, etc., i.e. the latent rather than the instrumental aspects of activities and behavior.
c. "Lower-level" [meanings are those] everyday and instrumental meanings: mnemonic cues for identifying the uses for which settings are intended and hence the social situations, expected behavior, privacy, accessibility, penetration gradients, seating arrangements, movement, etc., which enable users to behave and act appropriately and predictably, making co-action possible.

"Levels of Meaning the Built Environment," in *Cross-Cultural Perspectives in Nonverbal Communication*, ed. Frenando Poyatos (Toronto: C. J. Hogrefe, 1988), 325.

While we are acutely aware of the criticisms directed at environment-behavior studies (EBS), and we think this is not the place to rehearse all these arguments, we are inclined to agree with David Seamon who finds that phenomenology and EBS employ similar theoretical underpinnings when trying "to reconcile the difficult tensions between … firsthand lived experience and second hand conceptual accounts of that experience," (David Seamon, "A Way of Seeing People and Place: Phenomenology in Environemnt-Behavior Research," in *Theoretical Perspectives in Environment-Behavior Research: Underlying Assumptions, Research Problems, and Methodologies*, ed. Seymour Wapner et al. (New York: Kluwer Academic/Plenum Publishers, 2000), 157-178.

faith" that Marshall alludes to, that is the Block A stūpa court, the dominance of the Fortifications remains paramount. That is, inhabitants circumambulating the main stūpa in the Block A stūpa court are always subject to the surveillance of guards on top of the Fortifications (fig. 7b). Likewise, every time they raise their sight above the Block A stūpa courts walls (fig. 7a), they would inevitably engage with a military presence. These are clearly middle-level meanings—communicating status, wealth, power—encoded within the built environment.

We also find lower-level meanings—communicating everyday and instrumental meaning—encoded in the built environment of Sirkap. For example, the Fortifications, Northern Gate, and Block A Stūpa Court form an organized, purposive system of movement. A visitor is funneled from outside the Fortifications, through the Northern Gate, and directly to the entrance of the Block A stūpa Court (fig. 8). This is achieved by offsetting the Northern Gate to the east of Main Street—as noted above, a feature of the city for which Marshall an all others have noticed and offered explanations. This link between the Northern Gate and the Block A stūpa court is further strengthened by what seems to be a walkway that invites the visitor to enter the court. Note that the site map as presented by Marshall in *Taxila* (plate 10), obscures this connection. That is, this site map includes some structures that were constructed significantly later than 100 CE. It is only in carefully reading Marshall's description of the remains between the Northern Gateway and Block A that this becomes clear.[69] Thus, it seems the Block A stūpa court was the initial site of interaction for any visitor to the city, and the link between the military apparatus and the religious

[69] According to Marshall, *Taxila*, pp. 141–142, the houses in Block 1 were not built until the late Indo-Parthian period and thus belong to late stratum II only. Without these poorly built houses, the entry to the city would lead the visitor directly to the Block A stūpa complex—there is a direct line from the entrance to the city (square 2-68') to some rubble (square 15-68') that indicates some kind of walkway leading to the entrance of the stūpa court from Second Street (square 15-65').

community is made quite plain. This is not to say that Marshall's interpretation of the offset Northern Gate is wrong. Surely, features of a city plan, much like architectural features and material culture in general, can have multiple purposes. So, the fact that the Northern Gate is offset from Main Street could be for sanitation, defense, and controlling movement.

With just these few interpretations of the built environment put forth, we need to ask, are these visual messages that we have identified similar to the visual messages that inhabitants of the city would identify in 100 CE? Here, we need to circle back to Lefebvre's notion of a "consensus" or "code" that a member of any social group (even one temporally displaced by two millennia, that is, us!) can discern coherently and convincingly. As argued above, we think that the region of Gandhāra in the early historic period had such a visual code that we can coherently decipher. This visual code is embedded in the ubiquitous reliefs and sculptures throughout the region. In many of these images the military apparatus and political/royal power is clearly linked to religious themes. For example, many of these images depict the life of the Buddha as told in the *Jataka* tales, and in "translating" these stories into images, the military/political apparatus is invariably evoked. There are many scholarly works dedicated to Gandhāra art and architecture which collect these images, and it does not take long as one peruses through them to see that the "code" of a military/political-religious nexus is dominant.

Deciphering the code in its entirety is another massive project itself, but perhaps the best way to demonstrate what we mean in an efficient, yet hopefully convincing, manner is to look at volume I of Isao Kurita's two volume masterpiece, *Gandhāran Art: The Buddha's Life Story and the World of the Buddha*, which supplies hundreds of such images. In volume I, *The Buddha's Life Story*, Isao collects various scenes depicting the *Jataka* tales. While the texts of these tales make few references to the military and political structures, the images of these tales are often set in an

urban, militarized setting. Of course Siddhartha Gautama was born as a nobleman, so we would expect depictions of his early life to be saturated with such imagery, but even in the depictions of his renunciate life, the military/political apparatus remains a strong element. Backgrounds—including city walls, militarized gateways, and defensive bastions—frame many of the tales.[70] Reliefs depict stūpas which often bear the marks of royalty and power.[71] Let us give just two explicit examples, but there are many more. (1) There is an interesting analogue to the framing of the Block A stūpa court as experienced in our MUVE. In one image depicting the ascetic life that Śākyamuni led in the Tuṣita heaven before descending to incarnate on earth as Siddhartha Gautama, he is enframed by a trapezoidal gateway (fig. 9).[72] One might assume this trapezoidal structure was the entrance to a small stūpa chapel, but he is surrounded by no less than nine figures and standing under a canopy. This suggests, rather than a small shrine, a large gateway similar to the one at Sirkap. We see here a convention depicted in an image which is also evoked as pedestrians approach Sirkap and enter the city. (2) In the popularly depicted *Jataka* tale "The Visit of Indra and His Host to the Indrasāla Cave," the Buddha is shown meditating in said cave. He is not alone, but rather surrounded by figures, many of them bearing weapons and wearing military armor.[73] Further, while he certainly is meditating, he is often depicted meditating on a raised royal dias which is often decorated with other symbols of royalty, such as lions (fig. 10a).[74] In a number of particularly powerful images, flames shoot out from the Buddhas shoulders. (fig. 10b)[75] While

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[70] The number of images with these themes is too great to list, but some particularly fine representative examples are Isao Kurita, *Gandharan Art I: The Buddha's Life Story*, vol. I, II vols., Revised and Enlarged. (Tokyo: Nigensha Publishing, 2003): p. 139 P3-IV and P3-V; p. 141 P3-VII; p. 144 P3-XI.

[71] Ibid., p. 259 figs. 536, 537, and 538. These stūpas have both banners (*dhvāja*) tied to them and are flanked by lion crested pillars. Both of these are symbols of royalty.

[72] Ibid., I:23, fig. 12 (Gray schist, h. 35 cm., probably from Barikot, now in a private collection in Japan).

[73] Ibid., I:170, fig. 330 and 171, fig. 333.

[74] Ibid., I:171, fig. 331 and 332.

[75] Ibid., I:pp. 171, fig. 331 and 173, figs. 338 and 339.

Isao invokes Alfred Foucher's interpretation that these flames are the fire (*tejas*) which ignite during meditation,[76] there is another interpretation that one of the authors (Michon) have put forward which argues that solar symbolism, particularly flames emanating from the busts of kings on coins in the first few centuries on either side of the common era, are a common convention, or code, to indicate the elevated status of kings, to link earthly rulers to the world of the sovereign gods, and to establish the bearer of such flames as the royal *devaputra*, "son of the gods."[77] Clearly, there is a consistent "code," or a "consensus" of the visual imaginary, in Gandhāra, and that code allows us to interpret the visual experience of the architecture of Sirkap.

VI. Conclusion:

It is important to remember that the above analysis and interpretation of the effect of the visual perception of the Fortification and Northern Gate is but one possibility. We have made particular assumptions about the lifeworld of the pedestrian encountering this built environment. That is, at the first level of meaning embodiment refers to the shape and innate capacities of the human body. Our bodies have a certain size, they have arms and legs. We can understand that an object is tall because of our understanding of the size of our bodies. But at another level, there are also basic general skills at play in embodiment. We make sense of the world by what it affords our bodies. We know that we can grasp a pen because it affords grasping. We know that a certain object affords climbing, falling from, getting underneath, or bumping into relative to our bodies'

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[76] Ibid., I:322

[77] This argument is part of Michon's dissertation, see Daniel Merton Michon, "Material Matters: Archaeology, Numismatics, and Religion in Early Historic Punjab" (Ph.D., United States -- California: University of California, Santa Barbara, 2007), pp. 242–243.

skills.[78] However, according to Merleau-Ponty, there is yet another level of meaning attached to embodiment, a level in which perception is preconditioned by a cultural system of meanings and by our intentions. To put it another way, the body is our general medium for having "worlds." Sometimes the body is restricted to the actions necessary for the conservation of life, and accordingly it posits around us a biological world; at other times, elaborating upon these primary actions and moving from their literal to a figurative meaning, it manifests through them a core of new significance: this is true of motor habits such as dancing. Sometimes, finally, the meaning aimed at cannot be achieved by the body's natural means, it must then build itself an instrument, and it projects around itself a cultural world.[79] These cultural skills associated with our bodies allow us to decipher the meanings of objects beyond our own bodies. And when the cultural code is stable enough to be experienced relatively uniformly by all, then we, as historians in the present, can access the possible meanings of objects from the past. But it is also true that the experience of pedestrians entering Sirkap through the Northern Gate and walking the streets just inside that Northern Gate would have varied according to their class, caste, race, gender, etc. The experience of a towering and imposing military structure may have been gratifying for a soldier or a class that enjoys the protection of the military, whereas it may have been a source of "imposition" and "dominance" for the class oppressed by such an apparatus. But nevertheless, the link between built environment and projected meaning is there, and we, even two millennia removed, can begin to decipher it.

We think Stanley Fish, in his conclusion to the second piece of his New York Times series, is exactly right to invoke Jerome McGann and ask two important questions:

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[78] James J Gibson, *The Ecological Approach to Visual Perception* (New Jersey: Lawrence Erlbaum Associates, 1986).

[79] Merleau-Ponty, *Phenomenology of Perception*, 169.

> The pertinent challenge to this burgeoning field has been issued by one of its pioneer members, Jerome McGann of the University of Virginia. 'The general field of humanities education and scholarship will not take up the use of digital technology in any significant way until one can clearly demonstrate that these tools have important contributions to make to the exploration and explanation of aesthetic works.' ('Ivanhoe Game Summary,' 2002). What might those contributions be? Are they forthcoming?[80]

However, we think his answer to McGann's challenge and these two questions in his third piece—that is, that digital humanities is but a distraction which offers no contribution to serious research and scholarship in the humanities, and further that there are no contributions forthcoming—is shortsighted. In this paper, we have taken up the challenge to make an important contribution to the exploration and the explanation of the city of Sirkap. Certainly, architecture and urban planning arelegitimate expressions of the human aesthetic impulse, and thus we hope we have convincingly demonstrated how leveraging digital technology can make an important contribution to the exploration and explanation of aesthetic works.

[80] Fish, "The Digital Humanities and the Transcending of Mortality." Here, Fish cites Jerome McGann, "Ivanhoe Game Summary", 2002, http://www.speculativecomputing.org/ivanhoe/framework/summary.html.