VISION, MEDIA, NOISE AND THE PERCOLATION OF TIME

Symmetrical Approaches to the Mediation of the Material World

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Abstract

Why in the articulation of archaeological knowledge have wider sensory properties of the material world been over*looked*? This article considers this question in relation to sound. It argues that the neglect of sound is partly the product of human transactions with instruments and media in practice. Moreover, the denial of sound as a relevant category of archaeological inquiry arises out of modernist notions of space-time that reside at the heart of the discipline. So while the visual is linked with spatial properties that are resistant to change, the aural is connected with the temporal and is considered momentary and fleeting in nature. Still, it is argued that sound as a quality of things is fundamental to human sensation – to being. In building upon a non-modernist notion of time where entities and events quite distant in a linear temporality are proximate through their simultaneous entanglement and percolation I suggest we might learn what we can understand from tuning into the acoustic properties of the material past. But rather than reproduce an unnecessary dualism between seeing and hearing, this endeavor will require us to relearn how to see and hear at the same time through other, complimentary modes of articulation and engagement.

Key Words ◆ *belles noiseuses* ◆ located media ◆ media ◆ percolating time ◆ vision

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> Listen. *Walls, town, and port, death's resort, gray deep where breathes the breeze, all sleep. In the plain is born a noise. It is the breath of the night. It bellows like a soul that a flame forever follows. The higher the voice seems a jingle bell. Of leaping dwarf it is the canter. It dashes, bounds, then in cadence, on one foot . . . dances at the tip of the swell*. Fluctuation.
>
> Michel Serres (1995: 26)

INTRODUCTION

In the articulation of knowledge concerned with the material past, archaeology has to show things. It is not enough to talk about the material world (Olsen, 2006; Witmore, 2004b). In the transformation and mobilization of archaeological materials, whether they be a series of 19th-century agricultural terraces on the Greek island of Kea, an Iron Age barrow in the Teleorman Valley of Romania, or a bedroom floor from a freshly abandoned council house in the UK, text, map, plan, diagram, illustration, and photograph work in combination. To be sure, it is this combination of diverse yet juxtaposed media that transforms something of the complexity and presence of such archaeological materials and locales. Mobile and immutable, archaeological media translate certain aspects of the corporeality, specificity and multiplicity of things into compatible and standardized modes of documentation (Latour, 1999; Witmore, 2004a). Beyond what we have to say about the material world, these transformations onto flat inscriptions are overwhelmingly visual.

But while our media are very deeply rooted in forms of visualization, it would be of little profit to enter into a further critique of their ocularcentrism (however, refer to: Jay, 1988 and 1993). To do so would be to miss the subtlety of their action. The basis of archaeological documentation – indeed, the very basis of the 'scientific revolution' – rests upon a fundamental shift in visual perspective and the ability to maintain optical consistency through standardized media; it rests upon a revolution 'of the *sight*' (Latour, 1986: 7, emphasis in original). My purpose in this article is to raise a series of questions in relation to the articulation of other sensorial qualities of the things, the materials, the stuff that archaeology regularly deals with – specifically, I attend to the example of sound. Indeed, while the aural is a fundamental quality of material presence, archaeology has taken little if any interest in the issue of sound. Why?

This neglect of sound provides an occasion to raise a series of much larger questions concerning some classic divides – vision and hearing, humans and things, space and time, past and present – and to offer some potential alternatives. In what follows I argue that this acoustic over*sight* on the part of the 'discipline of things' (Olsen, 2003) is partly tied to its instruments and media. But rather than treat human beings as completely

autonomous freestanding 'subjects' who take in the world as they please, I suggest that maps, along with theodolites, tapes and compasses (not to mention photography and cameras), have a role to play by mutually enhancing and redirecting our senses. Moreover, I contend that while it is more important to understand sound as a quality of things and for archaeology to deal with other sensory aspects of material presence, this rationale alone does not go far enough towards presenting a sufficient justification for what we can actually gain from attending to the aural. I maintain that the problem of understanding the potential for listening in archaeology is also connected to a thoroughly modernist temporality, one that the discipline continues to embrace (Olivier, 2003; see also Lucas, 2005). In building upon a non-modernist notion of time whereby entities and events quite distant in a linear temporality are proximate through their simultaneous entanglement and percolation (which I argue, contrary to Thomas (2004), to be fundamentally archaeological), I suggest we might learn what we can know from tuning into the acoustic properties of the material past.

As this endeavor, I argue, will require a reconsideration of how our instruments and media are mixed intimately into our practice and, as components of our extended, collective selves, they affect sensation, it will also require us to relearn how to see and hear at the same time through other complementary modes of engagement. I therefore conclude with an example of located media which folds the very mode of documentation into the act of bodily engagement with archaeological materials, features, sites, or landscapes.

THE NECESSARY OCULARCENTRISM OF ARCHAEOLOGICAL MEDIA

Contemporary archaeological practice relies heavily upon linear visual perspective (Piggott, 1965; Shanks, 1997; also refer to Ivins, 1973). 'In a linear perspective, no matter from what distance and angle an object is seen, it is always possible to transfer it – to translate it – and to obtain the same object at a different size as seen from another perspective' (Latour, 1986: 7). Linear perspective combined with the ability to maintain a high level of optical consistency and standardization in map and plan allows us to present and mobilize the foundations of a Bronze Age structure from Crete, or the stratigraphic profile of a Neolithic causewayed enclosure in Wiltshire, and thereby to transport such sites anywhere while maintaining something of their reality on a two-dimensional surface. Of course, theodolites, tapes, pencils, rulers, paper, graven images and the printing press have a role in this too (Witmore, 2004a). If we were to take away the ability to translate things onto a flat surface without corruption, there would be no archaeology, no science.

It was with the development of this capacity to mobilize landscape and things through a unique visual language based upon standardized, verifiable and repeatable practice that space would be dealt with in new ways. For example, in the case of Greece, one of the first scholars to utilize two-dimensional plans and maps in combination with detailed textual description in documenting features and places referenced in ancient literature was the military geographer and Classical topographer William Martin Leake (1777–1860). An intimate knowledge of ancient texts (not to mention his military connections, skills and practices) in combination with the optical consistency that was maintained in the translation of an ancient site through a two-dimensional plan or map, rather than a picturesque view, established a template to standardization for dealing with ancient places and landscape features (Witmore, 2004a). With this set baseline for documenting archaeological sites and landscapes, future topographers and archaeologists could continue to build upon Leake's work through further innovation and refinement – for example, the introduction of the actual photographic print in Alexander Conze's 1875 and 1880 publication volumes from the excavations of Samothrace (Conze et al., 1875 and Conze et al., 1880) or Sir Mortimer Wheeler's celebrated section through the strong-room of the Roman fort at Segontium in North Wales (Lucas, 2001: 37; Piggot, 1965: 175; Wheeler, 1958: 60). Things, once transformed without corruption, can be moved, combined and further refined (Latour, 1986). Subsequent practitioners know what to look at and how to translate it into the form of flat-paper inscriptions – a process made all the more straightforward with the aid of precision instruments and their associated media and knowledge (Figure 1).

While it is the introduction of new instrumentalities and modes of documentation that triggers shifts in practice and ways of looking at landscape and thus forms the core footing for what archaeologists do, the baseline of archaeological practice continues to be one of manifesting, transforming, and mobilizing the material past. And while standardized modes provide touchstones for dealing with archaeological materials, sites and landscapes, they also provide the assurance we need in order to mobilize something so complex and multifaceted as the material world (Latour, 1999; Witmore, 2004a). Whether archaeologists are approaching a Bronze Age settlement in Crete or the monumental structures of Teotihuacán, Mexico, we employ similar practices with the aid of similar instruments to produce similar ends. But our media are both the means and the end (Witmore and Shanks, 2004). Without the aid of our visual media we would not *see* anything. Yet neither can we close ourselves off from the other properties of the material world nor be satisfied with continually refining ways of transforming space through new remediated visual forms of the map such as GIS or VR (refer to Webmoor, 2005a).[1] Archaeology also has a responsibility to the tangible, corporeal, material presence of the world.

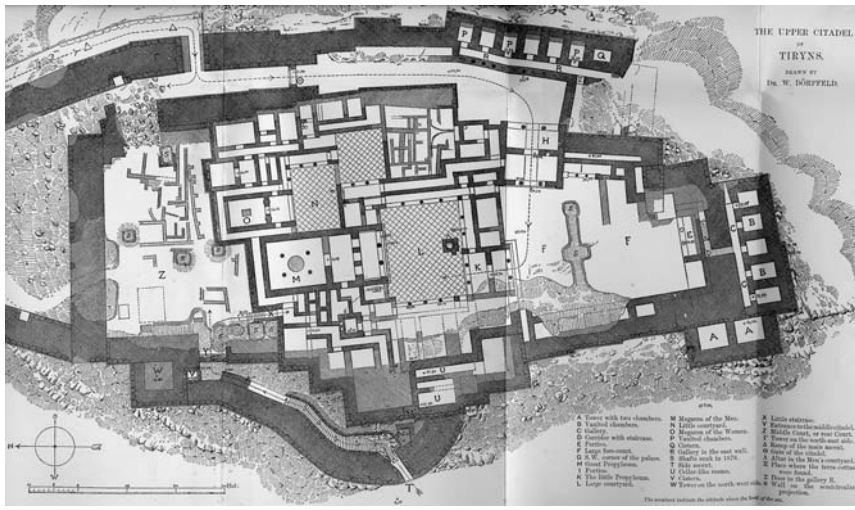


FIGURE 1 Digitized plan of Upper Citadel at Tiryns.
(No. 125 Schliemann, 1886)

To harden the point, archaeology, the 'discipline of things', should not and cannot be beholden exclusively to their visualization.[2] To be sure, we have text, and text allows us to accomplish a great deal in addressing the complexity of things (Joyce et al., 2002; Shanks, 2004). Nonetheless, in gaining some distance from the post-structuralist inspired paradox of 'materiality as text' when we forgot about the virtues of other media and the other qualities of things, and with an aim to dealing with the material world, text by itself takes us only so far (Olsen, 2006; see also Ihde, 1998; Latour, 1986). While our visual and textual media allow us to pull together and amplify particular qualities of materials and places distant in time and space, they also reduce the world in which we are immersed and with which we are entangled. We should always remember that our media and instruments are implicated within a whole process of mobilization – from field-walking or exposing a pit to plotting, note-taking and drawing sections, analysis of organic traces, to the final stages of synthesis and articulation (Witmore, 2004a). In this there is much more to the material complexity of, for example, a series of terraces on the side of a mountain on the Greek island of Kea than can be transformed through the highly refined combination of text, map, plan or photograph upon which archaeology relies. What of the other qualities of corporeal experience? What about the rich sensorial textures of the world which resist inscription – the ineffable qualities of material presence left behind by our most necessary ocularcentric media? Why would we dare to grapple with this complexity?

A MODERNIST SENSIBILITY AND TEMPORALITY – THE TRANSIENCE OF SOUND

Indeed, of all the sensory properties of the material world we can, thanks to many innovations (tied to, among other things, the many visual schematics of engineers), easily, reliably and relatively inexpensively mobilize sound. And yet we do not do so – well, at least the overwhelming majority of archaeologists do not. This is all the more interesting given there now exists a basis of measurement (and standards) – a metrology – for attending to the acoustic qualities of places and things (refer to the exemplary work of Watson and Keating, 1999).

In archaeological practice (with the help of the brigades of visual media, instruments, and our knowledge of the visual perspective) sound is often relegated to the chaotic background agitation of the material world.[3] The background noise – too chaotic, too confusing, too multiple, too messy – is temporally situated. Whether it exists as the tick of the clock, the ring of the bell, the buzz of a passing bee, the clash of thunder, or the steady rhythm of stiletto heels across the pavement of the Via Sacra cutting through the Roman forum, sound is momentary and fleeting. Sound is transient.

Philosophy, to be sure, has a long history of separating the visual and the aural (e.g. Crary, 1988, 1999; Ihde, 1976; Ingold, 2000: 243–87; Jay, 1988; Kant, 1998; Levin, 1993; Welsch, 1997; and for a broader anthropological take on the history of the senses refer to Classen, 1997, 1998). Indeed, it is trivial to note the association, within the 'western' tradition, of vision with the spatial and of hearing with the temporal. In modernist thought, vision and sound are intertwined with an even more mystical and problematic divide – space and time. As Wolfgang Welsch remarks,

> The mode of being of the visible and audible is fundamentally different. The visible persists in time, the audible, however, vanishes in time. Vision is concerned with the constant, enduring being, audition, on the other hand, with the fleeting, the transient, the event-like. (1997: 157)

Our archaeological tradition is attuned to the more enduring traces of the past and not as a rule to those qualities which are thought to have long since disappeared. We can see the traces of what potentially may have been a feasting event from Iron Age Sicily, but, of course, why should we have any concern with the noise produced by this event, which dissipated over two and a half millennia ago? Why should we trouble ourselves with the more transient and fleeting aspects of the material world? Why sound?

Indeed, to pose such a question is to conjure up old differences between modernist and postmodernist thought which have contributed to the further exaggeration of the divide between vision and sound. Placing aside my wish to bypass such an unnecessary dualism temporarily, what

is at stake here is not simply an issue of learning to hear. It is an issue of learning what we can know from learning to hear.

AUDITORY ARCHAEOLOGY? OR THE *BELLES NOISEUSES*

In recent years a growing interest has emerged in the field of acoustics in archaeology. The majority of this research deals with the sounds created by things such as musical instruments or hammer stones in producing rock engravings, and with the acoustic properties of place, ranging from early modern London to megalithic monuments and caves to different areas of landscape (Lund, 1981; Mills, 2001, 2005; Ouzman, 2001; Reznikoff and Dauvois, 1988; Smith, 1999; Watson and Keating, 1999; for a broader literature in anthropology and beyond refer to Bull and Back, 2003). While many researchers' agendas are connected to a critical awareness of the dominance of vision in most archaeological practice, the rationale for this research often comes down to a practical need to address the acoustic traces of the material past that would have been implicit in people's lives.

Some of this research attempts to address the sounds of daily life in the past. In the context of landscape, for example, Steve Mills (2001, 2005) has begun to develop what he calls auditory archaeology on the basis of research in the Teleorman River Valley of southern Romania. In his doctoral dissertation, 'The Significance of Sound in the Fifth Millennium cal. BC Southern Romania: Auditory Archaeology in the Teleorman River Valley', Mills identified auditory character areas, such as woodland, river bottoms, grasslands and so on (2001). The sounds generated in these areas were treated as properties of the corporeal environments of people's everyday lives. Mills argues that sound was an integral component in generating social relationships in the past.

Such studies challenge archaeologists to take sound seriously. In this regard we may consider, along with what can and cannot be seen from particular places in a site or landscape, what can and cannot be heard in the same locales. Considerations of the acoustic qualities of various locales in the ancient Athenian Agora, for example, might be regarded as of immediate relevance for understanding site-specific issues of performance in Ancient Greece (speech, oral poetics, drama or even clandestine gossip). But such issues are not so easily addressed. The architectural fabric of the agora has transformed substantially. Sounds heard today would give us no indication whatsoever of how sounds reverberated off various structures in the 5th century BCE. The continuous and relentless background noises of life in the city of Athens – the lorries, buses, cars, mopeds, and pedestrian traffic – have replaced others. Even at sites like the Ancient Greek theater of Epidauros or the

monumental city of Teotihuacán in Mexico, materialities have been transformed in ways that are difficult to completely account for in questioning their acoustic characteristics in the past. How can we be certain we can ever hear the same sounds as the ones that were implicated in past lives?

To be sure, noise connects us to deeper textures of the material world and qualities of corporeal experience. To hear noise is to hear things (Heidegger, 1971: 26; Ingold, 2000: 244–50). Indeed, some background noise is resistant to the 'flow' of time. Sea noise 'never ceases; it is limitless, continuous, unending, unchanging' (Serres, 1995: 13). The ever-present murmur of Proteus (the sea god who stands at the beginning) outlasts that of even the most seemingly permanent landforms (Serres, 1995: 14).[4] There is also the ceaseless chatter of the wind in the trees, the fall of rain upon the pavement of the streets of Pompeii, the agitation of the cicada in the olive groves of the Mediterranean; all are transient and yet recurrent. These are philosopher Michel Serres' *belles noiseuses* (Serres, 1995). These background noises are the first to be filtered out in archaeological practice and yet they are fundamental, not simply to our experiences of place, they are fundamental to our very being (Serres, 1995: 15; see also Witmore, 2004b).

Imagine the *belles noiseuses* of a lively countryside during harvest as depicted in Pieter Bruegel the Elder's *The Harvesters* (Figure 2). Painted in 1565, *The Harvesters* portrays field hands reaping corn in the countryside in the month of August. For Tim Ingold, the painting 'vividly captures a sense of the temporality of landscape' (1993: 164). In his well-known discussion of the landscape's temporality, Ingold focuses on six aspects of the bucolic scene that unfolds before the viewer's eyes, 'the hills and valley, the paths and tracks, the tree, the corn, the church, and the people' (1993: 166). Each of these elements has a different temporal rhythm; each has a different pace within the flow of time over the long, intermediate, or short term. For Ingold, this temporality is what forms the subject matter of archaeological inquiry. What of the noise?

Bruegel's countryside is full of commotion. But one must move about the scene in order to better hear. Taking a break from a morning of hard work, people eat and drink, and a woman cuts a loaf of bread. The murmur of conversation is broken by roaring and hearty laughter. Scythes slice through stalks of corn. These dry stalks crunch and crackle, as they are stacked into orderly piles for binding into sheaves. Wind fills the leaves of the trees and the corn on the field with a recurrent chatter. Some birds take flight, scared up by people carrying bundles of corn on the path. A bell tolls in the church to the right. A few seconds later, it is joined by a faint series of rings in the direction of the distant village by the sea. More wind provokes a raspy response from the dry stalks of corn as we hear the heavily breathing field hand carrying jugs of sloshing water.

FIGURE 2 Digitized image of *The Harvesters* by Pieter Bruegel.
Transformed black and white image reproduced with the permission of the Metropolitan Museum of Art, Rogers Fund, 1919 (19,164)

Moving through the middle ground of the scene, a donkey bellows. A dog barks. The squeal of axles in need of grease falls in with the steady thud of the mare's hooves upon the dry and compacted path. A great distance remains over seemingly permanent, but ever-changing, hills before we will be able to detect the continuous noise of our destination; the noise, whose temporal range is greater than any other feature of the Bruegel's landscape '*pace* Ingold', of the sea.

Add force to things and we gain sound. These sounds, these *belles noiseuses*, are temporally situated and yet many of these sounds as qualities of things are potentially recurrent. Like the hills and the valleys, perhaps some of the trees and the church or even the scythes some noise persists. But alas this brief example cannot take us very far except into the realm of the imagination, because we are left only with the reality of oil on wood. The 16th-century countryside of *The Harvesters* was mobilized with the aid of paint, palette, brush and so on; but even so, Bruegel, the master painter, did not mobilize the noise. His countryside was solely to be *visualized*.

Our ability to manifest aspects of the multiplicity of the material world depends on our instruments and media whether tape, pencil, and

notebook or paint, brush, and wooden canvas. This holds for a richly evocative poem or a musical composition that relates the sound of a storm. But such transformations filter out the noise of things and animals, our other 'companion species', who also have an impact in the co-constitution of Bruegel's countryside (Haraway, 2003a, 2003b). I suggest that sound is not solely temporal so long as the things remain. Moreover, sound is not simply like the material; it constitutes a form of material action. Yet the chatter of things is often all too easily over*looked*. Things are all too often treated as silent.

Belles Noiseuses and Media – the Case of the Map

It seems to me that questions of vision and sound in archaeology tend to boil down to how the free-standing, intentional, human subject perceives the world (Bradley, 2003; Ingold, 1993; Thomas, 2001; Tilley, 1994, 2004). But in dispelling this myth, could the not-so-silent-things lend their qualities to human sensation? Could our sensory apparatus be a collective one – that is, one based on the entanglement of people and things, one that extends through maps, one that is distributed via survey theodolites and other instruments? Moreover, how do these collectives of people and things work on the ground amongst the *belles noiseuses*?

Let us take another example from the writings of anthropologist Tim Ingold – the discussion of maps, wayfinding and navigation in his *The Perception of the Environment* (2000). Ingold contrasts two different modes of moving about a particular place: navigation and wayfinding. Navigation, for Ingold, is a mode of movement, which involves the intermediary of the map. With the additional means of a topographical map, in moving from one location to another a person situates his or herself on the ground through a comparison to a 'location in space, as defined by particular map coordinates' (Ingold, 2000: 237). This activity is divorced from any historical narrative of place that might have resulted from prolonged inhabitation over time. In navigation there are basically the places designated by the map and the non-places in-between. By means of navigation, Ingold states, 'it is possible to specify where one is – one's current location – without regard to where one has been, or where one is going' (Ingold, 2000: 237). As though connecting the dots, navigation allows a person to move from place to place, these places being translated as grid coordinate to grid coordinate with the aid of a flat projection of the region.

Wayfinding, by contrast, 'depends on the attunement of the traveller's movements in response to the movements, in his or her surroundings of other people, animals, the wind, celestial bodies, and so on' (Ingold, 2000: 242). For Ingold, such ambulatory knowing cannot be accommodated by a conventional dichotomy between mapmaking (cartography) and map-using (navigation). This is because the wayfinder's understanding of the

location of place unfolds over time through the accretion of many different experiences. The wayfinder situates a location in relation to memories of earlier journeys and other engagements. 'Every place holds with it memories of previous arrivals and departures, as well as expectations of how one may reach it, or reach other places from it' (Ingold, 2000: 237). According to Ingold, the wayfinder's 'richer and more varied' sensory engagement with the material world brings about a different understanding of a region (2000: 242). This understanding is one mitigated by a different relationship with things, one that is arguably more receptive to their *belles noiseuses*.

Consider the ambulatory knowledge of the Umela who inhabit the dense and continuous forest of Papua New Guinea. Alfred Gell argues that the forest environment transforms Umela sensibilities so that sensory perception is more centered upon hearing (1995: 235). In the thickly covered forest the Umela 'travelled with eyes downcast, looking for thorns and obstacles on the path (and other signs, such as tracks) while they "surveyed" their surroundings with their ever-receptive ears' (Gell, 1995: 238). Hearing for the Umela is the sense for detecting events and things at a distance. Hearing has spatial associations. The multitude of sounds produced by companion species, the winds, the trees, flowing water or other humans, all were factors in Umela activities involving wayfinding while in the forest. They form a primary aspect of their accreted experiences of the surrounding environment. Admittedly, given the nature of the vegetation and the terrain the Umela are a unique case of people-without-maps – without, that is, flat paper projections of a region. Nevertheless, Ingold's distinction between navigation and wayfinding is a useful way of emphasizing the action of our instruments and media in forming an even more dispersed, posthuman collective (Hayles, 1999).

In both navigation and wayfinding, we find ourselves dealing with particular collectives of people and things. For example, in the case of the mapping of the Peloponnesus, Greece, the French cartographers during the 1829–1831 *Expédition Scientifique de Morée*, with theodolites, tapes, compasses, chronometers, trigonometry, and so on, shifted a great deal of ambulatory knowledge constitution on the ground to a two-dimensional, combinable and standardized transformation of the surrounding landscape that can now form part of the sociotechnical collective (person-with-a-map) that is a navigator (Boblaye, 1836). The flat projection of an absent region printed in Paris can return to facilitate a different mode of engagement with a place in the Peloponnesus. Without the map, subsequent navigators of the region such as English Classical (and Shakespearian scholar) William George Clark might have had to resort to other modes of engagement, perhaps mobilizing other instruments (compass, sextant, or telescope) or relying on local people who possessed ambulatory knowledge of a region, or perhaps he might have had to tune into

other qualities of the material world in order to find his way (1858). Without the map (which is based upon cascades of other inscriptions) humans necessarily are entangled with other elements of place, other things. For the Umela, the *belles noiseuses* of the forest form a rich language (Gell, 1995), which, through the flat projection of the map, are simply background noises.

Indeed, we may recall from the discussion of archaeological media earlier that without our instruments and media we would not *see* anything. This is because so many hours of energy-consuming sensory engagement (which would have incorporated other things) necessary to find one's way through unfamiliar territory (or, indeed, trust in a local guide) have been delegated to a thing – a flat, combinable, fungible inscription – that transforms something of the reality of a place visually through linear perspective, triangulation, and calculation (Latour, 1986; Witmore, 2004a). As navigators (a-person-with-flat-projection) we can now roam freely about the world, but through the prosthetic extension of the map we see and only see.

In both wayfinding and navigation, things have a stake. But we cannot forget the novelty of what it is like to be in the world without the aid of immutable mobiles (such as the map) or scopic instruments (such as the theodolite). Without these media, without these instruments, the character of one's sensory relationship with a landscape changes. Different collectives of people and things relate to the world in different ways. It is in this regard, I suggest, that sounds might have other relevance as qualities of the material world and of the corporeal experience of various places. To argue that such *belles noiseuses* be considered as qualities of the material world is not to say that all that transpires in a place must be documented, recorded and preserved. Sound is, of course, fundamental as a quality of the material world and our companion species but this is not all. There is even more to the issue of noise and to understand this we must boldly grapple with time itself.

FOLDED TIME, CHIASM, PERCOLATION

Modernist thought asserts a radical gap between past and present. Time is cleaved apart at revolutions. We are separated from our pre-modern predecessors by 'Copernican revolutions, epistemological breaks, epistemic ruptures so radical that nothing of the past survives in them – nothing of that past ought to survive in them' (Latour, 1993: 68). The unambiguous arrow of time points in one direction only. However, the notion of linear flow, as Michel Serres reminds us, does not describe the nature of time itself; it is rather only one form of temporality. Time itself is much more complex. Time is much more chaotic.

Let us return to the issue of medium and consider the example of a sheet of flat paper with a timeline representing the history of the Argolid, Greece (Figure 3). The Neolithic spans over 3 millennia from approximately 6850 to 3600 BCE, the 'Bronze' Age fills in the years between 3600 and 1000 BCE, the early 'Iron' Age stretches up to the Archaic period at 700 BCE, the Classical begins at 480 BCE, and so on. History sorts out the chaos of time by imposing linearity. The modernist image of time *par excellence* is the time*line*. The present, as the locus of the modern, is forever poised upon the end, beyond everything that has come before, beyond every historical event that has transpired. As good moderns, archaeologists have been in service to this image of time from the inception of the discipline (Lucas, 2005). After all what else could time be?

The measurement of time should not be mistaken for the nature of time (Serres, personal communication; also Serres with Latour, 1995: 60–1). I now have a tightly crumpled ball of paper in my hand.[5] No longer planar, the 8½ × 11-inch sheet inscription is now folded, twisted, and turned into itself. Points in time once separated by great distances now touch one another. Likewise things, which are proximate in linear time, actually may be quite distant (all one need do is tear the inscription at certain points). This folded, nonlinear, temporal net is representative of archaeological time. Archaeological time is the entanglement, the intermingling, the *chiasm* of pasts and presents. Why must we always iron flat the creases and the folds?

Time, as the folded and crumpled inscription, is related here as the solid, the material – an immutable mobile that visualizes time as a linear and laminar sequence of events, much like a clip from a film reel made up of a series of frames (Olivier, 2003). But this exercise is only a small step toward understanding something of the chaos and turbulence of time. If we follow Bergson and Serres by adding disorder and turbulence to the order and regularity, time is better understood as fluid (Serres, 1995: 108). But, like the hottest of liquids, time doesn't simply pass: *it percolates* (refer to Serres, 1995; Serres with Latour, 1995; also Prigogine and Stengers, 1984). In its continual outpouring, time, for Serres, both passes and turns back upon itself. The flow of time is full of eddies, counter currents and whirlpools (Serres with Latour, 1995: 58–9). At times turbulent and at times calm, time is a mixture of order and chaos. It resembles the weather: *le temps* in French; *o kairos* in Greek, weather and time are of the same

FIGURE 3 Segment of timeline of Argolid prehistory/history.

word in many languages (Serres with Latour, 1995: 60). In English we can do no better than 'tempest', with its proximity to temporality. In time's percolation, the (surviving) materialities of the past are still with us. The past that is possible is here and it is now. Entangled in our daily activities, this accreted past has action; the commotion and ruckus (connotations of the French 'noiseuses') of this past may still even be heard.

Laurent Olivier has recently argued against a laminar form of historicism whereby periods of time are bounded between frames – chopped up into homogeneous sequences (2003: 208; also refer to Bergson, 1998; De Landa, 2000). For Olivier, 'time is emptied of its substance, of its possibility to act, by this quaintly old-fashioned perception of the past, which sees history as the succession of scenes of contexts' (2003: 208). In contrast, Olivier highlights the entanglement of the past and present through memory as manifest in the materials of the past, as materialized through various media. The present is always a rich aggregate mix of multiple times which are not necessarily linear in association. The line of the Roman *decumanus* still directs the flow of people's lives today in the layout of a boulevard in Paris. Olivier reminds us that its past has not passed but still has action today. The fabric of the Roman road and the contemporary infrastructure of Paris are proximate.

This form of folded, chiasmic and entangled time is profoundly archaeological. Archaeologists, to be sure, regularly make aspects of distant eras proximate without regard to what transpired in the interim in recirculating things of the past. Like gourmet chefs we continue to mix things of distant times into the soup of the contemporary. Pound a Neolithic hand-axe into a tree, knock on a Bronze-Age pithos, walk barefoot across a recently excavated mosaic floor dating to second century BCE and we fold time. We experience the recurrence of noise. We hear the past.

What may still be heard from the countryside of *The Harvesters*? Landscape, in expanding upon Ingold, is not solely composed of various passing timescales (Ingold, 1993). Landscape is multitemporal. Its polychronic reality is not the result of passing time but of its percolation. The old bell could still ring. The noise of the wind could still play upon the corn. But, of course, the church could be in ruins. The bell could have been removed. The genetic makeup of the corn could have changed or the fields could be forests or even paved over. And yet, noise can return and re-establish itself within Bruegel's landscape. The old bell could be re-hung. The fields could be resown with a similar strain of corn. A cart could be remobilized in a festival for harvest. Thatch roofs could be rebuilt upon the old cottages. The tempest of landscape 'is multitemporal, simultaneously drawing from the obsolete, the contemporary and the futuristic' (Serres with Latour, 1995: 60).

These chattering things are the *belles noiseuses* of various pasts. Noise is temporary and yet it is recurrent. Here we may highlight the importance

of the 're' in *re*current. While the past does percolate through its material traces and memory, it can also do so through the liveness of performance and physical re-enactment (Kaye, 2000; Lopez y Royo, 2005; Pearson and Shanks, 2001). Events such as these throw up links with and connections to various pasts. This is what we do in excavation or survey when we transform the material past. But why should we only listen to this richness and complexity at the level of experience?

It cannot be overemphasized that in leaping temporal distances, we transform the material presence of the past, which is intermittent, random and messy, into immutable, mobile, legible, fungible, verifiable inscriptions (Witmore, 2004a; *pace* Latour, 1999). The *belles noiseuses*, which are sieved away in this process, have the potential to trigger memories, connections and associations (Olivier, 2003; Serematakis, 1994). Must we always filter these out? Or is the reality of things too multiple and too messy for us to deal with?

I have repeatedly emphasized that, as throughout the process of transformation that occurs during excavation, survey or other forms of archaeological work, we are collectives with our media and instruments. As sociotechnical collectives our senses extend out through the map, the theodolite, or the tape. With these 'actants', with these *sensory prostheses*, we tune into, focus on, and see specific qualities of things. However, I wish to suggest that our mobilization of archaeological events requires a richer diversity of modes of engagement and articulation than those oriented towards paperwork and visualization. In this way, an awareness of the percolating, acoustic action of things must be matched by a recognition of the action of our media and instruments in how we, as collectives, engage with, sense, and transform the material world. But, in returning to the issue of seeing and hearing the past, we have to be symmetrical, not only, in our treatment of people and things, but also in our regard for the eyes and the ears (refer to *Symmetrical Archaeology*, Webmoor and Witmore, 2005). How with this necessary awareness might we articulate (mediate and manifest) the *belles noiseuses* of things, sites, and landscapes?

RELEARNING TO BOTH SEE AND HEAR

The mutual association of the modern and vision has resulted in a counter-monopoly of the ear among some 'postmodern' thinkers (*pace* Erlmann, 2004: 4; as exemplified by Levin, 1993: 3–4; also refer to Jay, 1993). In *Undoing Aesthetics*, Wolfgang Welsch, in the course of amplifying the weight of western philosophy against the centrality of the visual in modern culture, argues that we are currently experiencing an auditive turn (1997). For Welsch, embracing this auditive turn is a necessary step toward righting the wrongs (e.g. colonialism and racism) that arose under the ocular tyranny of the West. Why?

> Both hearing and vision are long-range senses, but vision is the sense that actually forms distance. Vision sets things at a distance and holds them fixed in their place. It is the objectivizing sense through and through. In vision the world congeals into objects. Every glance has something of the look of Medusa: it causes objects to solidify, petrifies them. – It is completely different with hearing, which does not reduce the world to distance, but rather accommodates it. Whereas vision is a distancing sense, hearing is one of alliance. (Welsch, 1997: 158)

As a distancing and objectifying sense, vision is often *seen* at the heart of the exploitative and dominating tendencies of the West (Foucault, 1995). Hearing, by contrast, brings in the world. It connects people. The turn to the ear counters the tyranny of ocularcentrism.

To situate vision and hearing in this way creates a problematic binary and seeks to create an equivalency through a shift in the balance of power between two senses which were not necessarily at odds in other contexts of human experience (e.g. Gell, 1995). Welsch's turn to the auditive is a symptom of an underlying illness that lies deeper than any supposed ocularcentrism. The issue here is not one of the world-for-human-consciousness, but rather one of human/nonhuman collectives (Latour, 1999). Welsch (along with many other postmodernist thinkers) ignores the rich acoustic history of modernism, separated off through the media and instrumentalities of the telephone, gramophone, and radio (Sterne, 2003; see also Kittler, 1990, 1999). Such a denial of the action of things contributes to further asymmetry. What is more, such forgetfulness makes for repetitive intellectual gestures.

In returning to the issue of auditory archaeology, Steve Mills maintains that we need to think in multi-sensory terms. I agree. It is through the five (six, if you count proprioception) senses that we engage with the material world.[6] Still this cannot occur so long as we continue to hear without seeing, or see without hearing in our transformations and inscriptions of what happens on the ground in the course of archaeological work. In swapping properties with things through acts of technical *delegation* through which programs of action shift from one entity to another (Latour, 1994, 1999: 185–90), those instruments and media with which we are now folded in our practices have some role in directing sensation. After a template to standardization is established, as with William Martin Leake's survey and planimetric map of the Bronze Age citadel of Tiryns, Greece, later 19th-century Classical topographers and archaeologists such as Captain and artillery chief Bernhard Steffen or Wilhelm Dörpfeld, familiar with such practice and entangled with the proper survey instruments, thereafter *knew* how to engage with and look at the site (Leake, 1830; Schliemann, 1886: 179; Steffen, 1884). The articulation of 'data' in two dimensions is always linked up with cascades of other inscriptions; it always arises out of the accretion of immutable

mobiles. Likewise, our engagements with place are always implicated along such media chains often within vast heterogeneous networks (Witmore, 2004a).

Since the early 17th century, as Foucault reminds us in *The Order of Things*, the eye 'was destined to see and only to see, the ear to hear and only to hear' (1994: 43). Transactions with more accurate and precise optical instruments further isolated and distanced the ear (Ihde, 1976). The geographer, the surveyor, approaches the coastline not as a lone human, but as a collective of optical instruments and visual media. All together he mobilizes the coastline, but the transformation is solely a visual one. The transformative process behind the flat projection leaves the *belles noiseuses* behind, indeed it has never even listened to them. Auditory archaeologists, by contrast, approach monuments with an arsenal of sonic instruments, whether a simple mini-disc recorder with omni-directional microphone or a DAT recorder with binaural recording. They record what they hear and only later reduce this rich archive of noise and transform their findings into the visual media which constitute the basis of its dissemination (e.g. Watson and Keating, 1999 specifically figures 2 and 6). Through traditional media we continue to sieve away the *belles noiseuses*. So long as we are beholden solely to our most necessary paperwork, 'we are chained to scenographies' (Serres, 1995: 19). We do not hear the countryside of the Argolid, Greece through this article.

Digital technologies permit us to form new collectives in our articulation of the material world. But by now it should be clear that the solution is not as simple as learning how to use such sonic instruments and mobilize sound with the aid of acoustic software. Now that we are beginning to recognize how the action of our media and instrumentalities, in the co-production of particular forms of knowledge based upon standardized and repeatable practices, directs and enhances particular senses we understand how standard visualization practices are cleaved from those of standard sonic recording. Through such asymmetrical practices we inadvertently maintain a dichotomy between hearing and seeing.

We may recall that the scientific revolution was one of the *sight* (Latour, 1986; also refer to Crary, 1988), and so thus we confront the challenge, not only of learning how to hear, but also of relearning how to see and hear at the same time. To do this requires a new philosophy of 'data'. We may delegate this issue to other modes of engagement.

New media facilitate the possibility of reintegrating the eye and the ear. Mixed media templates and collaborative social software allow for the integration of traditional modes of documentation, such as text, map, diagram, photograph with video or audio footage (Webmoor, 2005b; Witmore, 2005; Witmore and Adler, 2004). The recombination of sound with various media transforms something of the complexity of the

material world that cannot be accomplished via those other modes alone (Witmore, 2004b). In this way, such reintegration can now be attained through modes of articulation and engagement which accelerate displacement without the same reductive transformation that occurs with traditional modes of documentation (Witmore and Shanks, 2004).

These modes of articulation and engagement can take the form of what Pearson and Shanks call 'deep maps', following author William Least Heat-Moon (1991). Deep maps are rich collations and juxtapositions of the past and 'the contemporary, the political and the poetic, the factual and the fictional, the discursive and the sensual; the conflation of oral testimony, anthology, memoir, biography, natural history and everything you might want to say about a place' (Pearson and Shanks, 2001: 64–5; also refer to Mclucas et al., 2001). These modes of articulation and engagement can be the social software forums such as *Traumwerk* where various media – video with high quality sound – can be brought together via hypertext in an open, immediately accessible, continually expanding, and collaborative forum (refer to the Metamedia collaboratories at: http://metamedia.stanford.edu/).

We can also fold our media and our material contexts in upon one another for a fuller sensory experience. Such modes can be forms of 'located media' designed to overlay presentation and live experience in a site-specific manner, involving such modes of engagement as situated or peripatetic video (Witmore, 2004b; Witmore and Shanks, 2004). Located media can be designed for a particular location or context such as an excavation trench, or conceived in relation to an archaeological feature such as a megalithic tomb (situated), or activated in the course of prescribed movement through a locale (peripatetic). Furthermore, these modes need not mobilize noise so much as draw attention to it. These modes can be 'pervasive' or 'ubiquitous' media, whereby intermediaries such as a chip, digital tag, or code can be placed upon any thing in any environment and can provide, through the interface of a Palm Pilot or cell phone, text-messages, images, sounds, or indeed video clips (e.g. YellowArrow.org).

Within the series of transformations that makes up the archaeological process we often reduce too much when it comes to the complexity of the material world. Sound is a quality of things, it is an aspect of the material past, and it is fundamental to our experience and understanding of the world. In reconsidering the action of our instruments and media we understand that it need not be severed from other modes of articulation and documentation. Sound, vision, indeed all five senses are entangled with our being (Serres, 1985). As our being is entangled with the things of world we must seek to manifest something of this richness and complexity in order to achieve a more symmetrical understanding of the past/present world in which, and with which, we live.

A Symmetrical Example of Mediation – Located Media

In pulling this article together, I now discuss one of these modes of engagement in more depth – located media. Located media delegate previous knowledge, engagements, or events that occurred in a given place at a later moment in the same place. Located media work through the active *overlay* of video and collated sound footage upon the same ground through the mediator of a small video camera with LCD screen (Figure 4) and surround stereo headphones.

Let us consider, for example, the excavation of a floor level upon which materials rest in situ after the collapse of the roof and outer walls in an earthquake. Through the use of located media we may change and enrich how we attend to the act of excavation and the bodily experience of the moments during which the floor surface is traced and exposed, the ceramic materials are detailed, cleaned, documented, and finally transferred to another archaeological field. Video footage, which manifests something of the mixed sensory reality of this event, may be overlaid at a subsequent moment for archaeologists interested in the excavation or for visitors who wish to have a more actively engaged understanding of the site beyond the conventional presentation of features. Located media articulate process. Through located media what was an event can remain a continuing event. Time, the *belles noiseuses* of various pasts, continue to percolate.

This site-specific spaciotemporal layering is what Canadian media artist Janet Cardiff does in her video-walks such as *In Real Time*. Cardiff collates various sounds, voices, emotional reflections, and so on into a video walk through a library, museum space, garden, or urban area into a video segment (refer to Christov-Bakargiev, 2002). She then presents the video through a small video camera with high quality headphones to a participant while they reiterate the same sequence of the journey following Cardiff's explicit instructions (Figure 5). Past events and experiences are mediated visually and aurally through the video camera, while the fuller realm of bodily engagement occurs through the act of walking through the same locale. This spaciotemporal overlay and folding attends to the blurring of the digital

FIGURE 4 A digital video camera screen in the context of a peripatetic video at the Cantor Arts Center, Stanford University.

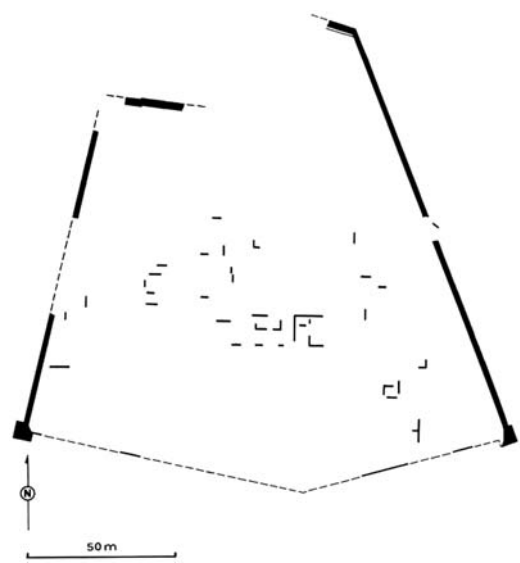
FIGURE 5 Participant in motion from Janet Cardiff's *In Real Time*, 1999 (after Christov-Bakargiev, 2001: 133).
Courtesy of the artist and Luhring Augustine, New York

and the real, in effect, playing new media applications off the material world in an effort to confuse, complicate, or indeed highlight the disparities between the realms of digital media and the corporeal environments of archaeological practice.

Located media such as peripatetic video, in contrast to more conventional modes of archaeological documentation including text, map, plan, diagram, illustration and so on, mediate aspects of a particular engagement within the corporeal setting of that 'original' experience (refer to Figure 4 in Witmore, 2004b: 63). This active media overlay on the place of occurrence involves both exchange and disjuncture between the mode of engagement and the material context focused upon. Associations, connections, and understandings arise through corporeal experience. In this way, such located media are ideally suited for the reiteration of archaeological survey transects at a later moment.

On 19 July 1981, the Argolid Exploration Project Verification Team surveyed the Kastro of Iliokastro in the Southern Argolid, Greece (Figure 6). While team members Tom Boyd and Mark Munn, along with compass, tape, and drawing materials, set to surveying the main Kastro wall and the exposed

FIGURE 6 Digitized plan of fortification walls and orthogonally planned structures at Kastro.
(After Figure A.38, Jameson, Runnels and van Andel, 1994: 520)



building walls, the remainder of the party Dan Pullen, Anne Demitrack, and Michael Jameson began a series of pedestrian survey transects to the south of the Kastro. On 21 August 2003, I revisited the area, reiterated and recorded 'Transect 1' as inscribed as a circuitous line on a 1:5000 map in the verification log from 1981 (Figure 7). Beyond experimenting with manifesting qualities of the material presence unattainable through traditional modes of inscription, the video footage can now be collated as a peripatetic video for future engagement and reiterative research (e.g. documenting landscape conditions, transformation, material presence and so on).

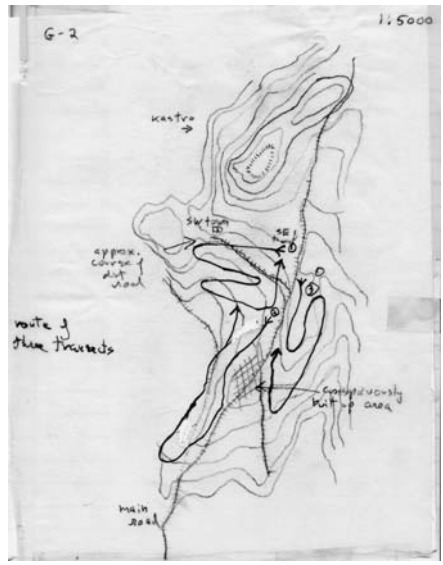


FIGURE 7 1981 Argolid Exploration Project, Verification Log, The Archaeology Center, Stanford University. *(From AEP Verification Log, 1981, unpublished notebook)*

Insofar as the output device is concerned, peripatetic video can be mediated with multimedia cell phone technology, a Palm Pilot or Apple's new video iPod. However, because the prosthetic of a video camera lacks definition in this regard – that is, most people understand it as a video recorder – peripatetic video plays on the illusion of live recording. This is enhanced by the novelty of playing back a video segment while reiterating the same path as that which was recorded.[7] With peripatetic video the visual interface is a small LCD screen, 5×8 cm . In this way, vision although critically important is intertwined with the closed aural environment of the stereo surround headphones. The enclosed acoustics of the headphones allows one to replicate the three-dimensionality of sound through binaural recording – recording with two omni-directional microphones in stereo. The noise in this transect include footsteps compacting recently plowed soil, scuffling across large wall stones, or crunching through the dry stalks of corn. The *belles noiseuses* of the cicada or the wind in the branches of the olives also permeate the video. Indeed, one may play on the acoustic vulnerability of the participant by emphasizing sounds outside of the visual field – the sputter of a diesel engine in a passing tractor. With peripatetic video important qualities of material presence are translated both aurally and visually. The recurrence of noise becomes apparent through its mediation.

CONCLUSIONS

Interest in the action of our instruments and media as sensory prostheses, combined with a different notion of time, combined with the ability to mobilize noise through lesser steps and with greater ease, might altogether warrant a reconsideration of sound. But this should not be sound for the sake of sound. Rather, the complex entanglement of past and present, of materials and ideas, and of sights and sounds that are the material world calls for modes of engagement and articulation which can manifest something of its complexity, multidimensionality, and multitemporality. Through symmetrical forms of mediation we attend to the imbalance which results when we sieve away the *belles noiseuses*, the chaos and turbulence of the material world, and bring forth meaning and order only. Such an imbalance severs us from the matter we claim to know best, namely things, the material past. The commotion of this material past is not merely to be seen. It is not merely to be heard. The commotion, the tempest, the *belles noiseuses* of the material past percolate in accordance with our very being. These *belles noiseuses* constitute legitimate pleats in the accreted, polychronic ensemble that is the material world of now.

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Notes

1. The notion of 'remediation' refers to how media present themselves as refashioned or improved versions of previous media (Bolter and Grusin, 1999: 14–15). GIS or VR often do this in relation to the traditional two-dimensional map or plan.
2. Although it should be noted that we can only now begin to address such issues because we have done such a wonderful job of mobilizing so much of what we work with visually.
3. This was the case even when Aaron Watson and David Keating used 'pink noise' in their study of the acoustic responses of different megalithic structures in the UK (1999). The background noise produced by the wind was regarded as a nuisance to their recording process.

4. Well at least in some cases, such as the city of Athens, sea noise is confined to the very edge of the sea where it competes with the noise of the city. The city won out long ago at distances inland where the chatter of urban life has replaced the once faint murmur of the water.

5. My point of inspiration for this image comes from Serres' evocative discussion of time through the metaphor of the crumpled and torn handkerchief (Serres with Latour, 1995: 60).

6. Proprioception is the sense (yet we are also largely unaware of it) 'that gives us the feeling that we *occupy* our bodies' and that our bodies exist within space (Hayles, 2002). Proprioception projects through things such as footwear, a blind person's cane or the end of a hammer. In other words, a dancer senses the smoothness of a dance floor, a blind person feels the presence of a concrete embankment, or the carpenter measures his (human + hammer) exertion in relation to the depth of the nail not as a lone human but as a collective with this 'sixth' sense extending beyond the skin.

7. It is difficult to surmise how the character of one's engagement will change once located media become more fully defined.

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