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Ephemeral cartography: on mapping sound

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ABSTRACT

With the concurrent rise of internet cartography (e.g. Google Maps) and low-cost digital audio recording devices, soundmapping has become a widespread phenomenon. But soundmapping has a much longer history, reaching back centuries and arguably millennia. Taking a kind of media archaeological approach to such cartographic practices, I consider a number of approaches that have been used historically in systematically combining sound and mapping and offer a rough media taxonomy to elucidate the particular relationships between them (e.g. mappings in sound, of sound, etc.). I begin with Homeric epic and then move through medieval *mappae mundi*, Ottoman nautical charts, linguistic atlases and sonar. My historical endpoint is a cluster of practices that (usually implicitly) constitute the beginning of contemporary analysis of soundmapping: the soundscape, both in its well-known form, as articulated by Murray Schafer, but also in the work of Michael Southworth, whose ground-breaking mapping practices influenced Schafer's own ideas about sonic cartography. Beyond this archaeological rethinking of origins, I also seek to rethink mapping generally from the perspective of soundmapping: not only do soundmaps remind us of the audiovisual mediations of mapping more generally, they specifically assert the temporality of experiencing all maps, whether explicitly sonic or not.

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The call of the Sirens has long held sound studies in its thrall – this essay is no exception.¹ In Book XII of the *Odyssey*, the goddess Circe prepares Odysseus for his departure by giving him instructions for navigating his return, as translated by Robert Fagles: “But I will set you a course [*hodon deixō*] and chart each seamark [*hekasta sēmaneō*] so neither on sea nor land will some new trap ensnare you in trouble” (Book XII, 27–30, Fagles 1996, 272). Fagles takes some liberties in his translation, but the basics are indisputable: Circe narrates for Odysseus the way he must travel to pass by the Sirens (and other sea-monsters). She has verbally created a map *about* sound (the Sirens) *in* sound (her voice) that is then preserved in further layers of sound: this passage is part of Odysseus's own performance of his (mis)adventures in the Phaeacian court, which is preserved through song as the *Odyssey* as a whole, eventually inscribed in text but maintaining a liminal existence between recited/declaimed sound and inscribed object. Indeed, Circe's comments could be construed as marking the entire *Odyssey* as a massive

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soundmap, a charting of hazards and seamarks that renders, in an admittedly criss-crossed fashion, the entire geographies of the Hellenic Mediterranean (and the underworld). Following Circe's sonic mapping, Odysseus and his crew then famously pass by the Sirens: he stops the ears of his men as they row, while binding himself to the mast to listen to the sonic rapture of the Sirens. His sonically-successful passage then allows him to speak with and hear further directions from the dead.

As mentioned above, the Sirens passage gestures toward a broader taxonomy of sonic cartography – a linguistic matrix of media operations in which sound and cartography relate in various ways, signalled by different prepositional connections. First and most obviously, Circe's instruction for Odysseus constitutes a mapping *about* sound: she charts out for Odysseus where certain sounds are located. Examples of mapping *about* sound reach back centuries, from early modern maps depicting sonic objects (e.g. church bells) to nineteenth-century linguistic atlases, continuing to twentieth-century "soundscape" projects like the ground-breaking work of Michael Southworth that visualised prominent sound sources for inclusion on traditionally inscribed maps and would inspire Murray Schafer's better-known World Soundscape Project.

Second, Circe vocalises her narrative, generating a mapping *in* sound (i.e. her voice) – she transmits her cartographic data in a sonic rather than a visual medium – which is then embedded in other such mappings-in-sound, as Odysseus recounts/sings his own past and Circe's directives at the court of Alcinous, which would then be sung anew by countless bards (including "Homer" himself) in performing the epic for generations. Given the ubiquity (and spotty documentation) of oral poetic traditions around the globe, it seems likely that mapping *in* sound has been the most widespread form of soundmapping, as evidenced by poetic-mapping traditions ranging from the Kaluli tribes of Papua New Guinea, who sing elaborate maps of their familial geographies (Feld [1982] 2012), to hip-hop artists like the Clan (1993), RZA (2005), with their sonic remapping of New York City as a transplanted set of East Asian sites appropriated from Kung Fu movies, or Ludacris (2001) who, in the song "Area Codes", raps a map of his sexual escapades by telephone dialling geography. But mapping *in* sound has pushed in other directions beyond oral/verbal poetry as well, as in the fifteenth-century poem on seafaring, the *Kitab-ı Bahriye*, by the Ottoman poet/sailor, Piri Reis, as well as more contemporary sound art compositions/installations, such as Annea Lockwood's *Sound Map* series, both of which I discuss here.

In the past two decades, analyses of the Sirens episode have highlighted two additional (if controversial) ways to conceptualise the operations of soundmapping. One is a more literal mapping of sound, in which sound – often containing cartographic information – is recorded and appended to a map or mapping apparatus. This technique of soundmapping has become the most widespread since the phonograph, as evidenced by projects like the World Soundscape Project's sizeable archive of location recordings, and even more so since the advent of Google Maps and low-cost digital sound recorders, making possible projects like Aporee, a digital soundmap with roughly 30,000 unique recordings tied to individual locations. But in the Homeric context, mapping *of* sound would rely on a very different technology of sound-reproduction: the Greek alphabet. So goes the claim of Barry Powell (1991), embraced by many media theorists, that the Greek alphabet's ability to inscribe vowel sounds and prosody (through various accent markings) in addition to consonants was already a form of sound recording, and indeed one that was developed in

order to commit Homeric epic to writing. Thus, the Sirens episode, once written down, was a mapping of sound, inscribed alphabetically as an instance of what Shane Butler has called the “ancient phonograph” (Butler 2015).

Friedrich Kittler’s explorations of the geography of the Sirens episode in the last years of his life – also indebted to Powell’s readings of Homer – points to a fourth and final technique of conjoining sound and cartography: mapping *by* sound. Kittler, along with Wolfgang Ernst and a few other colleagues, travelled to the Li Galli islands off the Amalfi Coast of Italy, placing opera singers on the cliffs to replicate the Sirens’ voices (Kittler 2005, 57–58; Ernst 2016, 49–56). Kittler’s conclusions are less important here, but the fact that he turned to sound as a cartographic tool to test the geographical narrative of the *Odyssey* highlights the ways in which sound has been turned into a tool of mapping in the past century. The most prominent example of mapping *by* sound has been the use of sonar to map the large majority of the earth that is underwater, a process I discuss below. Kittler’s project also points to another recent development in soundmapping, namely the re-inscription of the imaginary in sonic cartography. In Kittler’s case, it entails a fast-and-loose approach to reading Homer literally (e.g. he presumes that Odysseus was a real person, as were the Sirens, while doubting that Odysseus is telling the truth) while assuming that classically-trained opera singers can readily reproduce one of the most harrowing – and indescribable – sounds of Western (literary) history. Yet his approach points to the ways in which soundmapping, despite its increasing literalness and fixity with high-quality sound recordings digitally “pinned” to particular longitude and latitude coordinates, opens up a space of imagined listenings – and re-listenings – as sonic geographies are reproduced and shared around the globe. This more imaginary notion of soundmapping suggests that, despite prevailing ideologies of precision and certainty at play in many forms of modern mapping, sonic or otherwise, many soundmaps offer a stubborn resistance to such ideals, or at least the potential for such a resistant listening.

Finally, I would argue that although this rough taxonomy gives some sense of the possibilities, past and present, for soundmapping – for articulating what sound maps are without creating unduly narrow definitions – it also speaks to the ontology of maps and mapping more generally. In other words, soundmaps demand a rethinking of what constitutes “regular maps” – that is, visual maps, whether created through handwriting, print or digital technologies. In particular, soundmapping is an exercise in temporal cartography – sound demands time, especially in the form of audio recordings that require real-time playback to experience. That sonic temporality serves as a useful reminder that looking at a visual map is *also* a temporal experience. Christian Jacob has written about the “drifts” of a map: our eyes follow a line, a river or the letters in a city name (2006, 317–327). All maps are time-based media.

Similarly, the fact that many soundmaps must be experienced aurally asserts the multisensory nature of all maps as sites of tactility, aurality and even olfaction in combination with vision. Indeed, arguably the most radical of soundmaps – mappings *in* sound, or those that may not include any graphical object or interface – raise questions about the essential qualities of a map altogether. They suggest the possibility of mapping techniques that may not entail any form of graphical representation at all. In other words, there is no rule that a map must be written down or must exist in space

(despite our general assumptions), and soundmapping cuts to the heart of those ontological expectations.

In the narrative that follows, I explore this four-part taxonomy of soundmapping – mappings *about, in, of* and *by* sound – not necessarily as a chronological history but as an archaeology of sonic cartography. These different prepositions point to a variety of different media relations that have existed between sound and mapping, suggesting an important heterogeneity in the “deep time” of soundmaps that resist a singular, obvious ontology today, despite an apparent, tacit consensus that soundmaps are web-based platforms audio recordings placed onto a particular place on a digital map. Not only does soundmapping have a much longer history, as I show here, it retains a potential to explore and make use of a whole array of media configurations between sound and mapping that are frequently forgotten in contemporary discussions of soundmapping.

Indeed, this limited scope (both in terms of chronology and media relations) characterises most recent scholarship on soundmapping (Théberge 2005; Waldock 2012; Ouzounian 2014; Anderson 2015). Such work helpfully documents the contours of digital mapping, much of which is painfully ephemeral, already inaccessible online just a few years later, while also raising important questions of power, representation and spatiality. However, by unquestioningly prioritising the digital, such analyses take a rather narrow view of how soundmapping works. The nature of web-based platforms also leads to a shared assumption of a visual interface – such scholarship (unintentionally, we can presume) reinscribes the visual dominance of traditional cartography. The cartographic precision of pin-pointed coordinates on a web-based map also can deceive us into presuming some kind of documentary truthfulness about a sonic real captured in audio that is in fact a highly mediated chain of imagined listenings (a point discussed below by sonic cartographers like Annea Lockwood and Udo Noll). In addition, much of this scholarship also passes over some of soundmapping’s most radical contributions to the much longer, broader history of the cartography of the senses: to maps devoid of visibility; to a cartography that includes not only expanses of space but also the passage of time; and to the kinds of sound archives, whether recorded on gramophone records or in orally transmitted songs, that store the sensory data of sonic geography. I hope here to recover some of these neglected but expansive contributions embedded in that longer history of soundmapping.

1285 CE. Mapping about sound I: mappae mundi

The earliest instances of soundmapping all appear to emerge from broader traditions of oral poetry and verbal arts, as suggested above with regard to Homer and hip-hop. Anthropologists working in Papua New Guinea have offered some tantalising suggestions about what kinds of practices of soundmapping might have existed in previous centuries. As mentioned above, Steven Feld has written about the Kalului *sa-yalab* lament, in which Kaluli women create verbal maps as a poetic genre to commemorate and mourn for their deceased relatives (Feld [1982] 2012). Eric Silverman (2001) and Carlo Severi (2004) have also documented verbal traditions among the Sepik people, which similar bring together landscape, memory and poetry, often drawing on a variety of “mnemotechnical” aids, including masks, hooks and knotted cords as cartographic media of representation.



Figure 1. Overview of the Hereford Mappa Mundi (ca. fourteenth century). Facsimile by Conrad Miller, “Richardi de Haldingham seu de Bello Mappamundi inter annos 1276–1283,” 1903. Harvard Map Collection, Harvard Library.

In an even more profoundly embedded case, Alfred Gell has suggested that, for the Umeda people, language and landscape are so intimately bound up that the very act of speaking about place and living things becomes a kind of soundmapping through “phonological iconism”, in which the constituent sounds of words represent the objects they refer to, with sonic distinctions between, say, mountain (*sis*) and knolls (*kebe*), that reflect physical differences. Gell writes: “One can indeed imagine the Umeda world/landscape as a series of mappings between articulatory gestures, syllabic shapes moulded within the oral tract (microcosm) and the macrocosm consisting of the body, social relationships mediated through the body, and other natural forms, particularly trees, and the encompassing physical ambience” (1995, 240). In short, everything from



Figure 2. The Tower of Babel as depicted on the Hereford Mappa Mundi. Facsimile by Conrad Miller, “Richard de Haldingham seu de Bello Mappamundi inter annos 1276–1283,” 1903. Harvard Map Collection, Harvard Library.

the mouth – “the oral tract ... is a little landscape in itself” (ibid.) – to the rain forest is part of a massive soundmapping in Umeda culture.

Similarly, the written record of early European mapmaking suggests a sustained engagement between formalised mapping and longer-standing traditions of oral poetry and other narratives – especially foundational myths and epics – as illustrated particularly well in the genre of *mappae mundi*. Literally maps of the world, *mappae mundi* typically made use of a “T-O model” with three continents centred on Jerusalem, with Asia above and Europe (left) and Africa (right) below. These maps often had a close relationship with larger mythologies that had their roots in oral traditions as well. For example, Gautier de Châtillon wrote an epic poem, *Alexandreidos*, around 1180 CE, recounting the life and deeds of Alexander the Great. Included with the text was a *mappa mundi* that suggests a parallel geographical account of these deeds (Destombes 1965).

Even when mythologies were not explicitly bundled with mapping, they remained closely linked. For example, the Hereford Mappa Mundi (see Figure 1), dating from around 1300, not only depicts a similar geography but also includes considerable text, including names of places, animals and fragments of stories from the Bible and classical mythology, often alluded to through iconic imagery, much of which highlights sonic pasts and futures. For instance, at the top of the map, two angels flank an image of Jesus Christ as they summon the dead to resurrection and judgment. They do so, however, in

a peculiar way, using herald's trumpets that somehow produce vernacular French rather than the Latin used elsewhere on the map (including for Jesus's own speech, "Ecce Testimonium [me]jum"). With their divine megaphones, the angels thus summon the dead: "Arise! You shall come to joy everlasting" (*Leuez-si uendrez a ioie pardurable*) and "Arise! You are going to the fire established in hell" (*Leuez-si alez au fu de enfer estable*).²

The largest image on the map itself captures in turn the sonic mythologies of the past: the Tower of Babel (see [Figure 2](#)), a structure that would bring about global chaos through the incomprehensibility of spoken sound. In a more oblique way, the inclusion of Jason and the Golden Fleece (located in Colchis, not en route) offers a reminder of the same problematic sea routes Odysseus would encounter in passing the Sirens, as recounted in the *Argonautica*, Apollonius of Rhodes's epic poem which also entails sailing past the Sirens. On the Hereford Mappa Mundi, the Sirens are not depicted (though a mermaid sits in the middle of the Mediterranean Sea). However, a variety of other characters with unusual vocal capabilities do appear, like the Blemmyes, thought to speak through their bellies (making them literally "ventriloquists"); the Cynocephali ("Dog-Headed"), people with human bodies but dog-heads and voices; and even the Essedones of Scythia, depicted as cannibals, although the map's text clarifies that they ate their familial dead as an act of devotion (better than leaving the deceased for worms) and accompanied those rites with singing, a grim form of multiple, simultaneous oralities inscribed on the map.

Additionally, the location of the map's display within Hereford Cathedral becomes entangled in sound. Traditionally, it was thought to have adorned the altar itself, the audiovisual centre of the cathedral. Recent scholarship suggests instead that it hung in the south choir aisle, a locus in its own right for sonic activity (the clergy and choir), later to be displaced with organ pipes (de Wesselow 2013). Perhaps more importantly, it was located within a small network of tombs, relics and images comprising the "pilgrimage complex" of St. Thomas Cantilupe (Terkla 2004). A critical image, or rather vocalisation, then becomes a curious, much-debated depiction of a hunt, complete with dogs and a fewterer crying out, "Passe avant" (Go forward). For Thomas de Wesselow, the call is intended to fuse the mapped *mundus* with that of the pilgrims, an injunction both to move forward with pilgrimage but also to contemplate the imminence of death, as suggested by the angels summoning the dead with their French trumpets.

Even more strikingly, the map's creator suggests that the map is already audible in an injunction in the map's bottom-left corner: "Let all who have this history – *or who shall hear, or read, or see it* – pray to Jesus in his divinity to have pity on Richard of Holdingham" (Westrem 2001, 11, italics added). It will come as little surprise to a twenty-first-century audience that one might "read, or see" a map; but Richard begins by suggesting that one will "have this history" by means of *hearing* it. Whether one "hears" this map by hearing it narrated by someone else (e.g. reading aloud or describing its images) or by some other form of auditory imagination, Richard's understanding of a map as offering multisensory possibilities is intriguing. Furthermore, he also describes his map as a kind of call-and-response object that would elicit the prayers of the devout.

The corpus of *mappae mundi* as soundmap culminates several centuries later with the more readily audible fifteenth century mass by Johannes (Juan) Cornago, *Missa Ayo visto lo mappamundo* ("I have seen the *mappa mundi*"). The mass embeds itself in a cluster of

explicit signification, bearing the scribal inscription: “Frater Johannes Cornago. Mass: The sign [*signum*] of the *mappa mundi* of Naples and the mass of our lady Saint Mary” (Gerber [1475] 1984; Reynolds 1992). Indeed, the entire mass can be seen as a reading of the *mappa mundi* articulated in sound. Completed by around 1475, the *cantus firmus* of the mass is based on a popular (and secular) Sicilian song and appears in the mass as follows: “I have seen the *mappa mundi* and the mariner’s chart, but Sicily still seems to me the most beautiful island in this world”.³ Here multiple strata of sonic cartography appear: the mass is inspired not simply by maps/mapping, but by a popular song about such maps/mapping (including both *mappae mundi* and seacharts). Rebecca Gerber posits a salient connection between Mary, as “the star of the sea”, and sailors (1984, x), suggesting a deeper stratum yet, in which sailors would have called on Mary as a kind of ritualised navigational benediction. The speaker of the song text apparently has travelled widely – the *mappae mundi* and seacharts seem to reference actual travel (to have something to compare with Sicily). And yet the song text only makes sense – that the speaker knows Sicily is the most beautiful place on earth based on looking at maps – if seeing the maps and seacharts means seeing the entire world.⁴ The precise connection of Cornago’s composition to existing audiovisual media, so to speak, remains contested: the melody and text almost certainly came from secular song, yet some scholars believe the text nevertheless refers to a *mappa mundi* Cornago saw, perhaps one commissioned by King Fernando of Spain (Cockburn and Stokes 2006, 28) or the lost *mappa mundi* painted by Jan van Eyck for Philip the Good (Snow 1969, 107; Strohm 1985, 137; Stevenson 2013). Whatever the case, this mass points to ways in which maps can also elicit or inspire sound.⁵

1526 CE. Mapping in sound: *Kitab-ı Bahriye*

Cornago’s *mappa mundi* mass highlights another possible media operation within the realm of soundmapping: mapping *in* sound. An intriguing comparison to a near contemporary of Cornago’s work can be found in a similar multimedia bundling of drawn maps, religious oration and poetry created by the sixteenth-century Ottoman navigator and mapmaker, Piri Reis. While his greatest claim to fame in most histories of cartography comes from his two world maps made in 1513 and 1528, he also produced a massive atlas, *Kitab-ı Bahriye*, literally the Book of Seas (or of Seafaring) though typically known in English as the Book of Navigation, containing maps and portolan charts of the entire Mediterranean coastline and poetry about those maps and regions. Presented to Sultan Suleiman the Magnificent in 1526, the Book of Navigation offers one of the earliest composites of navigational and ethnographic data (Yilmaz 2010). But it also brings together a literary composite of poetry, religious invocations and narrations of oral traditions, as well as commentary about its own mediality that make it particularly relevant. The poetry, which plays a central role in the work, suggests the Book of Navigation can readily be understood as an instance of mapping *in* sound, using poetry and its implicit recitation as a key medium that both describes the visual maps and the mapping process itself.

Narrative cartography has a long history, both in prose and in poetry, as historians of medieval and Renaissance music have shown. For instance, travelogues and historical narratives chronicling religious processions and other urban activities often narrate the