

MOBILE COMMUNICATIONS TECHNOLOGIES IN TREE TIME: *THE LISTENING WOOD*

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Abstract

This article presents a practice-led investigation by a cross-disciplinary team of artists and computer scientists into the potential for mobile and digital communications technologies to engage visitors to London's Hampstead Heath with the histories of its veteran urban trees. Focusing on the application of Internet of Things (IoT) technologies within the arboreal environment for the digital poetic walk, *The Listening Wood*, it considers the reciprocal impact of "tree time" on the development of "slow tech."

A visitor to Golders Hill Park, London, in March–April 2019 may have noticed a series of words etched into rounds of offcut wood and placed at the base of trees (Fig. 1): *YIELD* under the pear; near to the fallen oaks, *CARTWHEELS*; and *ACCIDENTAL* beneath a sweet chestnut's severed limb. By messaging these words to an SMS number displayed on printed materials in the park or the geolocated web app at thelisteningwood.com, the visitor would have received fragments of poetry related to each of the trees, the park and the wider Hampstead Heath: "Pruned petals: / words enjoyed / in the poet's / kitchen garden."

These text-based interactions punctuated audience experiences of *The Listening Wood*, a digital poetic walk around fourteen of the "veteran" trees of Hampstead Heath resulting from a collaboration between artists, technologists and arborists from UCL's Centre for Advanced Spatial Analysis (CASA), and the City of London Corporation. The signal aim of this research project, while indebted to the walking practices of artists including Alec Finlay [1], was to discover how pervasive mobile communications devices and technologies associated with the Internet of Things (IoT) might be utilized to engage visitors with the cultural and social histories of London's veteran trees and also to negotiate different temporal registers in which human and arboreal lives intersect. We hoped that using mobile and IoT technologies as vehicles to convey poetry generated from corpora of ethnographic and archival research might lead audiences to a deeper appreciation of the trees and, indirectly, the work undertaken by the arborists as their custodians. This article discusses the way in which technologies associated with instantaneity and distraction interacted with the slow passage of "tree time," via digital poetry, to produce more attentive and sustainable encounters between humans, technology and trees.

Veteran trees are defined as ancient for their species, or as having characteristics associated with ancientness, irrespective

Fig. 1. *The Listening Wood*, Hampstead Heath (© Preamble, 2019. Photo: Leah Lovett.)



of their age [2]. Crown retrenchment, decay and exposed dead wood betray the survival of the oldest of the project trees—a 450-year-old oak—through two "Great Storms" (1703, 1987) and industrial urbanization. Hollowed, gnarled and fallen veteran trees provide microhabitats to support the biodiversity of urban parks like Hampstead Heath, but they also offer a point of contact with the past, across sweeps of time spanning human generations. Almost two centuries before its inclusion in *The Listening Wood* project, the leaning pine of Sandy Heath (Fig. 2) was sketched by the landscape painter John Constable [3]; nearby, a pair of three-century-old oaks stand precariously atop a mound of sand, undermined for railway infrastructure projects by Victorian industrialists [4].

If veteran trees are evocative of the past, then IoT technologies anticipate an increasingly connected future. Broadly defined, the IoT describes the tendency through which the decreasing cost of computing power allows more and more objects to sense their immediate environments and interact with one another. Using Object Oriented Ontology approaches derived from philosophy, Lindley et al. interrogate the distributed nature of IoT technologies and the challenge this poses to the relationship between humans and "things" (including living things) [5]. If connected devices can make autonomous decisions and relay data back to corporate entities whose purposes and business models may be entirely opaque, then the centrality of the (human) "user" is called into question.

Digital communications technologies have also served to mediate and shape scientific knowledge of arboreal societies in recent years, as the coining of the term "wood wide web" to describe the mycorrhizal network of hyphae through which trees transmit information about their environment and share resources might imply [6]. Research instigated by ecologist Simard in the 1990s has contributed to an emergent understanding of trees as social and essentially collaborative: Saplings without access to the canopy may receive vital resources from "mother" trees, which in turn become established as "nodes" in the network [7].



Fig. 2. The leaning pine, Sandy Heath. (© Leah Lovett, 2019)

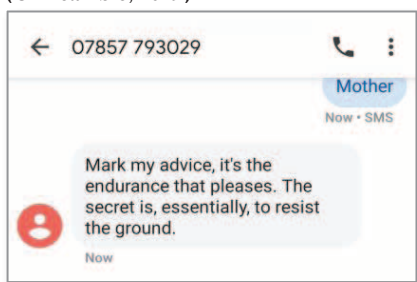
While this area of semantic overlap suggested the potential for mobile and IoT technologies to imaginatively reconfigure the relationship between humans and trees to the *Listening Wood* team, the implementation of an interactive, technology-based installation in Hampstead Heath presented a number of challenges. As one arborist stated on an initial site visit, “you can’t bolt anything onto the trees.” This limitation combined with the open aspect of the site, leading to a risk of theft, precluded the use of hardware such as the Bluetooth beacons deployed by members of the team in previous projects exploring digital technology, memories and stories [8]. Nor would the use of such hardware necessarily guarantee meaningful exchanges between human and arboreal actors. Notwithstanding various artistic attempts to transpose biofeedback from plant matter into audible sound, arboreal channels of communication remain unintelligible to humans [9]. How, then, could mobile and IoT technologies be used to cue human audiences into the slow dramas of veteran trees? What, if anything, might the trees make of such an encounter?

In fact, the temporalities of technology, trees and human lifespans are so variant that they cannot be comfortably reconciled. Artist Katie Paterson’s *Future Library* gestures towards this incommensurability through the planting of trees destined to become books after the deaths of their authors [10]. *The Listening Wood* alternatively draws on the affordances of IoT—its immediacy, its ability to deliver site- and context-specific messages, and the pseudo-randomness of software algorithms—to convey peripatetic poetry which serves, metaphorically, imaginatively and spatially, to bridge this gap.

The only material intervention into the site of *The Listening Wood* consisted in the end-grain roundels of wood, which were reclaimed from the Heath as part of its day-to-day management. The etched words referred to a characteristic of each veteran tree and functioned on another, technological dimension within the project, as a mode of “tagging.” As tags, they interacted with a natural language application (“chatbot”) programmed to respond with lines of poetry generated from corpora of archival texts and interviews related to the trees and the Heath. Although there was no practical way to manage equipment loans in this instance, the development of a bespoke SMS Gateway for the project enabled anyone with a mobile phone (smart or otherwise) to access the work via text message (Fig. 3) using printed maps available throughout the park. In addition, the geolocated HTML5 website thelisteningwood.com offered a secondary interface to the installation, with an interactive map to help audiences navigate the site.

By walking around Golders Hill Park and the Heath and interacting with *The Listening Wood*, visitors were able to construct a poetic record of their encounter with the veteran

Fig. 3. *The Listening Wood*, screen shot.
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trees that resonated beyond the instant of apprehension. The durational effect of poetry combined with the distance between the trees and the somatic experience of the walk to engender a mode of “slow tech,” understood in terms of the sustainable and conscious use of technology [11]. Audience feedback gathered during the project launch event suggests how, far from being a distraction, the technological interface enabled a more attentive relationship with the environment to unfold: “It felt as if I could use [SMS] to nudge the tree, or wave at it . . . to have another level of depth to the encounter.” Individual experiences of the project were further shaped by the happenstance quality of the interaction. As one visitor put it: “Knowing that there were more possible responses than I received helped it all seem like an encounter with a world bigger than me.”

The Listening Wood brought several networks of human and nonhuman actors into play: humans living and working with trees, trees acting on and through humans as propagation vectors, humans interacting with digital technology, trees interacting with each other. Ultimately, however, these networks remain opaque to each other. We can no more speak to trees than trees speak to us, and while humans are reliant on pervasive mobile communications technologies, their computational processes are similarly invisible to the user. Yet, bringing these distinct systems into contact through digital poetry produces a powerful set of metaphors for thinking about each of their different temporalities. In response to tree time, technology slows down, becomes less concerned with the speed or volume of data transfer than with the aptness of the message in time and space. Language then becomes less about literal description and more about creating the conditions for imagining what it might mean to hear trees speak.

Acknowledgment

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References and Notes

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10. See Katie Paterson, *Future Library* (2014–2114): www.futurelibrary.no.
11. N. Patrignani and D. Whitehouse, *Slow Tech and ICT: A Responsible, Sustainable and Ethical Approach* (London: Palgrave Macmillan, 2018) p. 9.