UBIQ 1 (2) pp. 279–293 Intellect Limited 2012

Ubiquity: The Journal of Pervasive Media
Volume 1 Number 2
 doi: 10.1386/ubiq.1.2.279_7

ANTONY LYONS AND JON PIGOTT

Confluence Project Artists Commissions: Shadows and Undercurrents

Two artists, Antony Lyons and Jon Pigott, were commissioned as a collaborative team to work with the 'Confluence Project' in the North Devon Biosphere Reserve, 2011–2012.

The scope of the project was multifaceted, and the remit for the artists was therefore broad and challenging. Our aims during the year-long residency included the following:

- to engage creatively with a place – the valley of the River Torridge, Devon, UK
- to engage with some of the environmental issues, and the staff, of the North Devon UNESCO Biosphere Reserve
- to engage with innovative technologies and environmental data-logging
- to engage with local schools and community, enabling meaningful involvement with the project.

For us, these aims were tackled as part of a creative collaboration, founded on a shared interest in experimentation within the fields of sculpture, sound, digital media and eco-art. Shadows and

Figure 1: River Torridge.

Undercurrents is the title of our strand of the wider 'Confluence Project', which had its main public manifestation with an exhibition at the Appledore Arts Festival in June 2012. This title reflects our approach of teasing out some vital, yet somewhat obscured, ecological threads within the special protected landscape setting of the River Torridge catchment. We were keen to provide evidence of the unseen and the unheard, revealing features of the landscape that typically slip below or above the radar of normal human perception.

Over the course of a year, we undertook fieldwork, and led workshops and sound walks with school groups (Figures 1 and 2). Availing of sensitive microphones and hydrophones, the participants were able to delve into the unknown by extending the range of their senses. A kayaking investigation of a stretch of the river allowed us to encounter the setting in a deeply intimate way, enhancing our understanding of its geography, wildlife habitats and visual/sonic aspects. As is often the case, the superficial beauty of a landscape can obscure some serious malfunctioning. On the Torridge, the extremely rare freshwater pearl-mussel population, whose habitat lies within the clear gravel-beds of the river, has not reproduced for nearly 50 years. In that time, salmon population numbers have plummeted; the local eel and bat populations likewise. The life cycles of the salmon and pearl-mussel are intimately connected; and both are negatively impacted by the increasing silt and mud deposition. In itself, this decline is of course problematic – both directly, for the species concerned, and because of knock-on effects on the rural economy. However, there is more to these trends. These species are bio-indicators; they are the canaries in the cage. Their dramatic contraction is saying something important about the Biosphere Reserve's state-of-health. For the pearl-mussel and the salmon, it is not a time to 'keep calm and carry on'. There is no Second Life for an extinct species. Clearly there is a need for lateral thinking, changes in socio-ecological relationships and new cultural imaginings. The challenge presented to us during the 'Confluence Project' was to find ways to activate such new imaginings through the fusion of environmental knowledge, technology, community and creativity.

Ecologies of place, media and data

From its earliest uses, the word ecology has connections to science, art, humanism and politics. Within the range of current expanded meanings, we find terms such as 'ecology of place' as popularized by geographer Nigel Thrift and others (Thrift 1999); and 'media ecologies' (see Parikka 2011; Parikka and Hertz 2012). These two themes have been central to our work in Confluence, bringing together our interest in the 'deep mapping' of place and landscapes, with a materialist sensibility directed at the technological assemblages of our contemporary media and communication worlds. This was one strategy that enabled us to align the artist residency process to our current creative practices. A priority was also to maintain the focus on the natural ecology of the Torridge catchment.

Figure 2: Beach recording.

Figure 3: School workshop.

Figure 4: River Torridge.

1. http://www.geopoetics.org.uk/welcome/what-is-geopoetics/.

However, by embracing multifaceted and technologically enabled approaches, we were dealing with complex relationships between the various ecologies. This problem is touched on by Timothy Morton in a recent lecture titled 'This is not my beautiful biosphere':

> The dilemma of an ecological era is that the era is at once the product of massively increased knowledge, but also that this knowledge is itself a product of a planetary-scale imagination that has already profoundly damaged the earth.
>
> (2012)

Even the process of acquiring knowledge can itself play a part in the slow, cumulative and pervasive damage to ecosystems at a regional and global scale. Detailed monitoring can reveal the damage in a scientific, rational sense, but how to facilitate deeper understanding and connection to biosphere dynamics?

Smart sensors deployed in the field environments enabled us to remotely measure levels of river turbidity (muddiness of the water, in this case associated with run-off from surrounding agricultural lands). The second parameter chosen for remote detection was the activity of bats (Figures 5 and 6) (at Rosemoor RHS Centre). The ultrasonic sound world of bats is practically silent to the human ear, but not to the 'Magenta 4' bat-detector (Figure 7) which we coupled to a wireless 'Ecoid' (a data-harvesting technology provided by one of our project partners, i-DAT). The complexity of the environmental and technological interactions was greater than this simple description suggests. Issues of river access, fishing seasons, power supply; wireless ranges, web connectivity and waterproofing were just some of the hazards and challenges encountered.

The citizen-science approach of the 'Confluence Project' appropriated cheap accessible sensors to provide environmental data via the web. This offered a point of engagement between the local communities, technologies and – through data – the environment. As our relationship with this techno-social ecology developed, we began to question the role of data in the context of this project. The data-streams morph and translate from one material substrate (muddy water or bat-calls) to another (electromagnetic waves, semi-conductors, liquid crystal displays, etc.), through to the creative cultural realm. The idea of the sonification or visualization of data became, for us, an invitation to translate one localized, situated, material environment into another. It was clear that solely screen-based and acousmatic loudspeaker outcomes would have limitations in describing the complex relationships and interdependencies of bats, rivers, electromagnetic waves, communities, mud, silicon chips, sensors, fish, smart-phones and pearl mussels, to name just some of the agents that we encountered in our research. We sought to activate a kind of geopoetic[1] awareness that called for immersion in an intimate and augmented space. 'Augmented space' is described by L. Manovich (2003) as a new kind of space that overlays dynamic data with the physical.

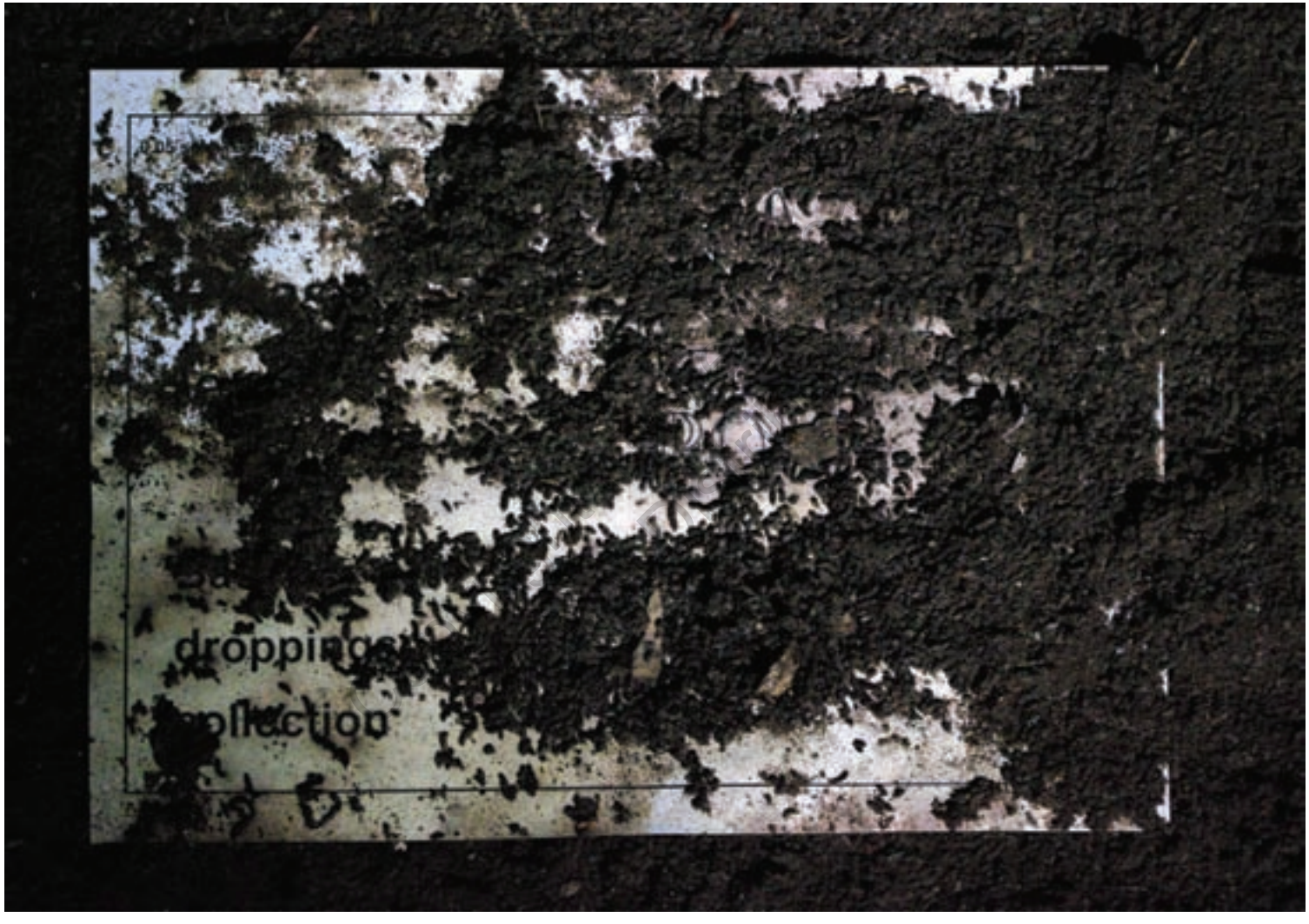


Figure 5: Bat droppings.

Figure 6: Bat cave.

Figure 7: 'Magenta 4' bat-detector.

'Aliveness Machines'

Our approach to presenting environmental information within the Shadows and Undercurrents installation space involved the creation of two kinetic, sculptural assemblages that responded visually and sonically to the hidden worlds of river turbidity and bat activity. We call these pieces the 'Aliveness Machines' and through their physically dynamic, sonic and visual behaviour we suggest that they each embrace the notion of an 'intimate science', as described by Roger Malina (2009) 'coupling the virtual world to the physical' and 'helping to make science intimate, sensual, intuitive'.

To communicate our bat-activity data we constructed a device (Figure 8). that harks back to early moving-image contraptions such as the Zoetrope (whose name means 'wheel of life'[2]) The bat-derived information emerges using motion, projected light and shadow. The mechanics of the device are exposed in a direct yet playful weaving of allusions and associations. There is an aural component too, emerging from the workings of the mechanism. A connected cinematic, audio-visual component is in development in the form of a Mutoscope, which through its simple flick-book style animation contributes a further flapping sound. This makes a poetic and intimate connection to the source of the data – the wings of a flying bat, as well as to the to the chatter of old film projectors (exhibiting another layer of association – with early, silent vampire films). Here, the relationship to data was simple; when bats are active, the machine jumps, whirrs and flaps into life and the shadowy projected bats fly (Figure 9).[3]

For our river pollution (turbidity) monitoring data, we developed a second kinetic device, attempting to communicate the vital flux (or the 'aliveness') of the river, and its living ecosystem, again in a material way. Turbidity information is translated via a bladeless fan, into continuously varying airflow. This, in turn, activates suspended ribbons of fine steel that are hooked up to contact microphones. There is an inverse metaphorical relationship; the more sediment that smothers the riverbed, the less movement in these 'ribbons of life' (less aliveness), and the quieter is the sonic data scape. Although direct in its communication, this sculptural feature involves a form of 'double translation' (of less turbidity equating to more aliveness), which was found to be effective but possibly not as instantly clear to the audience as the bat machine. The visual elements of this piece included a cylindrical cage of hundreds of lines of fishing line (Figures 10 and 11), which – in conjunction with up-lighting and the movement of the steel ribbons – provided a water-like dance of light, shadow and reflection. Our water pollution recorder was also partnered by a 'bolt-on' data-activated fishing-reel mechanism. This evocative visual and real world reference provided a significant component of the multi-layered soundscape of the whole Shadows and Undercurrents installation, as well as referencing the locally important fishing activity (which we had encountered during our river kayaking trip).

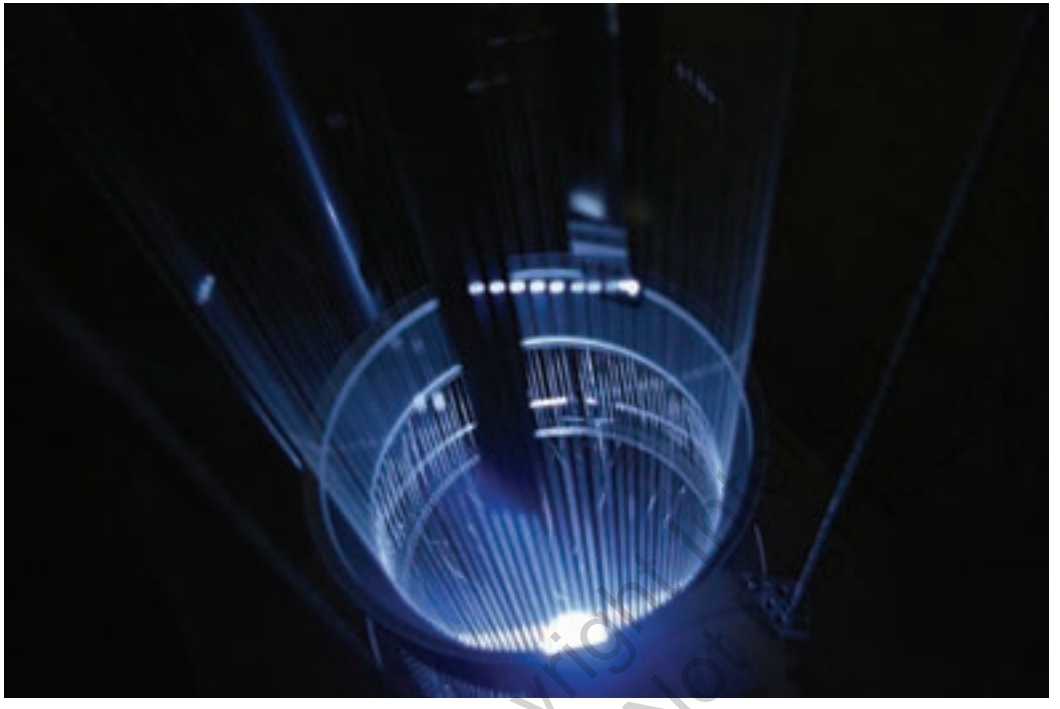
The installation space of Shadows and Undercurrents was immersive, scenographic and performative. Along with the two 'Aliveness Machines', the other elements of the space were: projected

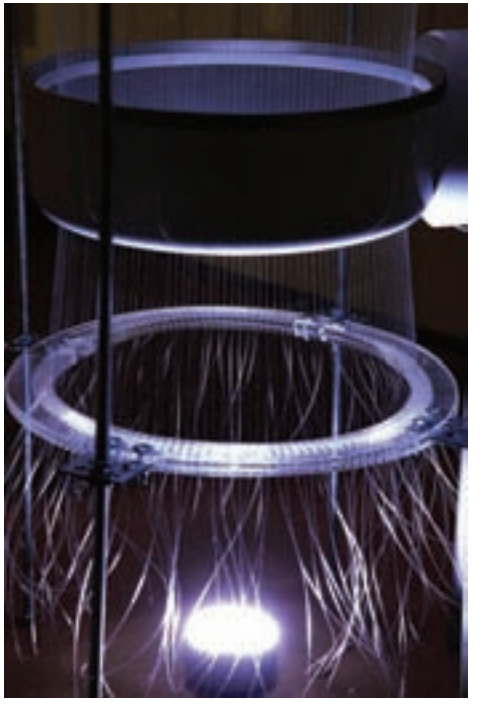
2. A 'zoetrope' is a device that produces an illusion of action from a rapid succession of static pictures. The term zoetrope is from the Greek words 'zoe', 'life' and tropos, 'turn'. It may be taken to mean 'wheel of life'.

3. In the first iteration of these 'Aliveness Machines', the activation was via recorded data. However, the potential exists to make them operate with real-time, live data.

Figure 8: Bat device.

Figure 9: Bat shadows.





Figures 10 and 11: fishing-reel mechanism.

film, audio recordings, archival still images (in light boxes) and texts. The combined effect was to draw the audience into the material yet enchanting world of Biosphere dynamics, in all its rhizomic complexity, with the aim of bypassing a purely rational engagement and activating a deeper imaginative and emotional connection to the environment.

References

Malina, R. F. (2009), 'Intimate science and hard humanities', *Leonardo*, 42: 3, June, p. 184.

Manovich, L (2003), 'The Poetics of Augmented Space' in Anna Everett and John Caldwell (eds), New Media Theories and Practices of Digitexuality, New York: Routledge, 2003 pp. 75–92.

Morton, T. (2012), from a talk filmed on 28 August, http://ecologywithoutnature.blogspot.co.uk/2012/10/this-is-not-my-beautiful-biosphere-video.html. Accessed 20 January 2013.

Parikka, J. (2011), 'New materialism as media theory: Media natures and dirty matter', *Communication and Critical/Cultural Studies*, 09: 01, pp. 1–6, doi: 10.

Parikka, J. and Hertz, G. (2012), 'Zombie media: Circuit bending media archaeology into an art method, *Leonardo*, 45: 5, pp. 424–430.

Thrift, N. (1999), 'Steps to an ecology of place', in Massey D., Allen J. and Sarre P. (eds), *Human Geography Today*, Cambridge: Polity Press, pp. 295–323.

Contributors details

Antony Lyons
E-mail: antonylyons@mac.com
Web address: www.antonylyons.net

Jon Pigott
E-mail: jpigott@cardiffmet.ac.uk
Web address: www.sonicmarbles.co.uk