Biotagging Manchester: Interdisciplinary Exploration of Biodiversity

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Abstract

Biotagging used audio-visual equipment to engage a range of individuals in 'tagging' plants and animals with specific and local meaning to them. This was an experiment in subverting conventional approaches to biodiversity monitoring with the aim of expanding ideas of both biodiversity and citizen science. Keywords: Biodiversity, Mass Participation, Citizen Science, Biodiversity Monitoring, Folksonomy.

Fig. 1. Biotagging concept: tagged flora (Photo © Roger Whitham)

Biotagging was an experiment between artists, botanists, social scientists and local community members, working together to develop a collaborative method and tool for identifying and understanding the relationship between the natural and man-made world. We sought to create a novel approach to citizen science, generating non-standard data shaped by participants' concerns (citizen science projects range from those which seek to 'educate' the public to those which actively incorporate public knowledge, commitments and concerns into science and science policy). During a preliminary workshop, we brought together biodiversity scientists

Fig. 2. Biotagging: exploring urban biodiversity (Photo © WeAreTAPE)

and sociologists of science with Christian Nold, an artist-designer. Christian specialises in subverting conventional mapping and monitoring technologies to engage and empower local people with their local environment and the politics of its management. This day out was a pilot-test of these ideas.

As we discussed the development of possible participatory projects, we realised the importance of finding a compelling tool to attract the interest of local residents in Manchester. One of the reasons this proved challenging was because the history and promotion of the very concept of 'biodiversity' does not represent the liveliness of the natural world nor of human engagements with it; it often instead becomes synonymous with the global bureaucratic 'machinery' of biodiversity conservation. We needed to devise an approach and technology which would 1) inspire the local community to share its knowledge of the local environment in ways that were subjectively meaningful, and 2) enrich the very concepts of biodiversity and 'citizen science'. We decided, in line with the other projects described here, that one way forward was to make a clear and explicit connection between local climate (Urban Heat Island effect) and biodiversity.

We finally decided on the '*Biotagging*' project where '*tagging*' means a subjective way of differentiating things from each other. Scientists routinely use quantitative and standardised approaches to map and monitor biodiversity, involving tried and tested methods, such as the scientific identification, naming and classification of the plants and animals found during a survey of an area. The emphasis is on building a clean, accurate dataset through a repeatable process. We sought to explore how to incorporate richer, narrative data so to capture how members of the public perceive the wild-life with which we share our spaces.

Through *Biotagging*, we asked participants to record and describe in their own words ('tag') the plants and animals they encountered within a local, urban area, along with any other contextual information that they felt meaningful and relevant. We hoped to create a more inclusive, community-driven and valued approach to generating knowledge on biodiversity. We chose the idea of 'tagging' as we were particularly interested in processes of categorisation (e.g. Folksonomy) which are emergent rather than prescribed. What is powerful about this approach is that it involves people in the politics of information management and encourages thinking about larger patterns and systemic understandings of the world [1]. Crucially, naming and categorisation by themselves are not enough; plants and animals need to be embedded in narratives of personal experience, emotions and history to give them meaning.

Fig. 3. The Biotagging rover in the Futuresonic 2009 exhibition (Photo © WeAreTAPE)

We decided to build 'Eve', a film-making and data-gathering rover to visually 'tag' plants and animals and to heighten participants' awareness of the environment and document the workshops for the gallery exhibition. We developed the Rover tool thanks to Christian Nold's experience with other participatory toolkits which seek to heighten sensory experience and enhance communal reflection, such as Bio Mapping (2004), Drawing Provocations (2007), Sensory Mapping (2007) and the TownToolKit (2009). 'Eve', designed for '*biotagging*' consisted of a commercial 4 camera CCTV system with hard drive recorder and video monitor mounted on a wagon. In addition it had a full weather station logging temperature and humidity. Cru-

cially the CCTV monitor was mounted on the wagon to show a real time video feed from the 4 cameras. 2 of the CCTV cameras were fixed on the rover, with the other 2 on 10 meter cables allowing people to spontaneously film a specimen or a discussion and instantly see their footage on the monitor.

We organised 5 participatory workshops with local community groups from Philips Park in East Manchester.
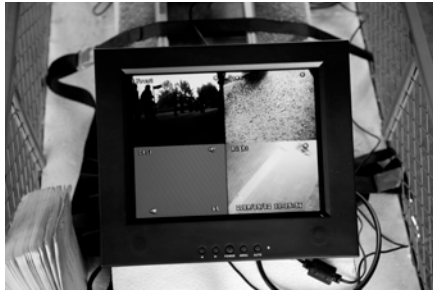

Fig. 4. Capturing data with the Biotagging rover (Photo © WeAreTAPE)

Preliminary research suggests that the Park may be located on an urban heat island temperature gradient, with its centre an average of 2^0 C cooler than the nearby built area, which could encourage a particular ecology. Participants included primary school pupils, teenagers and a range of adult groups, including artists, historians and academics. The aim was to draw their attention to the subtle uniqueness of plants and animals found beneath their feet. To do this, participants used 'Eve' to record each specimen. The monitor and recorder allowed everybody to see what participants were tagging as well as document discussions about the socio-cultural meaning of the wildlife observed.

In an installed gallery artwork at the Environment 2.0 art exhibition, we presented a film showing a 1.5 hour continuous recording from the 4th of the 5 workshops. We chose this section because it best illustrated the continuous interplay between plants in the park, personal observations and jokes as well as discussions of the history and politics of the park. With the Biotagging Rover we aimed to create a technology offering participants a comfortable distance from the potential embarrassment of having to publicly explain one's tagging choices. In this way, the simplicity yet playfulness of the mobile film set created a space for reflective discussions.

Reflections

Biotagging was a rapidly pieced together pilot study and represents a starting point, rather than a conclusion. It gave us fresh insight into how different publics classify and value the diversity of plants and animals within what is to them a very familiar urban location. All of the participants gained something from the experience, from simply taking a closer look at the plants and animals in their neighbourhood, to in-depth discussions on nature conservation driven by the perspective of local values. 'Eve' served both as a focal point for activity and encouraged participants to look closely at an environment they often only walk past at pace. Plants proved to be important actors and indicators of local networks, as well as instigators of larger social dynamics (food etc.). The presence of the Manchester Poplar, for example, reflects the industrial heritage of the area, and its current decline is a reminder of the potential problems associated with the introduction of some non-native species, even ones which have been around for a long time. All these dimensions of experience would have been difficult to see or hear without this technology-mediated, organised participatory process.

The two aims of the project - personal engagement and communal understanding - proved hard to blend in short workshops. The fact that relatively few individuals were finally engaged was not necessarily problematic; arguably, if a participation project has brought about a depth of engagement for one person only, it has achieved at least some of its aims. It does though raise questions about the relative importance of staging 'mass participation' projects, or of the need to clearly define the parameters of 'mass' itself. This leads us to the bigger question of how we decide upon the need for public participation projects at all. If, for example, one of the broader aims is to bring about societal change, where impact is clear and quantifiable, how many participants render a project legitimate? More important perhaps, where large-scale participation is indeed felt to be important, what might be the reasons for low levels of public buy-in to participation?

We did succeed in identifying and developing complementary ways of working between the artists, botanists and other participants there. But true art/science collaboration is challenging and we needed more time than was available in this quick-fire experiment. A further challenge to highlight is the role of social scientific reflection in such interdisciplinary initiatives. We found it quite difficult to engage social scientific insight in the short-term and realise that it rarely works as a bolt-on complement to art-science collaboration. This is partly because of time constraints but also because the artists and the natural and social scientists each approached the challenges of public participation and technological design quite differently. If social scientific reflection is to be incorporated along the way, greater space needs to be created to enable coherent input at the stages of project negotiation and design, project activities themselves and during collaborative reflection about the project involving public participants and project designers. The assumed outputs of art, science and social science (e.g. objects, theories, reflections) are legitimately different and not necessarily compatible. They are also differentiated amongst themselves, as well as flexible and responsive. Thus the mutual explorations of this kind are worthwhile.

We feel that for future developments of *Biotagging* or similar projects, it will be pertinent to explore how the 'data' – in this case captured by film – can co-exist with, contribute to, or be enriched by more conventional and 'mobile' products of biodiversity monitoring such as species surveys and distribution mapping. It is expected that in combination, such alternative methods for knowing and documenting biodiversity could serve to, a) enhance and clarify the very meaning of 'citizen science'; b) contribute to a local and global appreciation of the multiple meanings biodiversity might have for different public communities; c) contribute location-specific 'data' of trends in species distribution and decline. This kind of combination of approaches to public engagement in biodiversity is especially important in light of a growing need to re-vitalise the concept of biodiversity, and to consider within this the importance of local politics of environmental management.

Fig. 5. Documenting local knowledge in Biotagging (Photo © WeAreTAPE)

References

1. Corburn, J. 2005 Street Science: Community Knowledge and Environmental Justice. MIT Press