

## 6 *theirwork*

### The development of sustainable mapping

*Dominica Williamson*

Cornwall, UK

*Emmet Connolly*

Dublin, Ireland

#### Introduction

*theirwork* is a participatory online “open” mapping project put together by project participants’ local knowledge and direct experiences of their lived environment with the aim of creating a democratic and first-hand, local definition of place. It rejects proprietary mapping software, generally characterized by copyrighted and prescribed visualizations of spaces. By opposing these authoritative, top-down systems of classification that are disempowering and homogenizing the world we live in, *theirwork* opens up the possibility of creating an emancipatory, continuously evolving mapping that is situated in a given space and addresses its creators’ – which are simultaneously also its potential end-users – main concerns. Thus the map becomes rooted in local identity, fulfilling the needs and reflecting the interests of the community. The custom-made, open-source software and approach encourages a more reflective reading, viewing and understanding of one’s environment and facilitates the recording as well as the protection of traditional knowledge and communal experience of space, which ultimately can then also be shared between different communities.

#### *theirwork* in the local mapping context

Traditionally maps have acted as a form of literal and abstract representation. The standard map is a precise top-down cartographic representation of a geographic terrain, a visualization of place. Fundamentally, maps are used to provide a view of data that is manageable for particular groups and uses. They are designed to be easily understood and represent selected information that is scaled down for ease of use. Similarly, a looser definition of cartography may allow us to consider that any form of data abstraction or representation based on a location is a map. This framing has seen maps being used as a medium to communicate ideas beyond the scope of physical geography, such as the amount of pollution in a given neighbourhood. More recently, the

98 *Dominica Williamson and Emmet Connolly*

environmental movement has adopted mapping as a form of communication. Green Map System (1999), an organization based in America, in particular, formed around the notion of almost exclusively using maps to further the cause of environmentalism.

Green Map System encourages communities to gather data about their green facilities and spaces. Communities are encouraged to map toxic hotspots, good places to view stars, or green businesses for instance. The end result of this community process-orientated mapping is that Green Maps typically present a variety of ecology-related points of interest on a map.

Similarly, Parish Maps is led by a British environmental arts organization called Common Ground. The project calls for a communal mapping of villages, towns and cities. Here people participate in mapping what concerns them about their place in order to protect their local distinctiveness (Common Ground 1983). The boundaries of the map are determined from the outset by the Parish boundaries limiting the project to producing static maps of UK villages (Crouch and Matless 1996: 237–9). Whereas Parish Maps set up boundaries by use of their terminology and by often veering towards a rosy-type Ordnance Survey representation of place (Crouch and Matless 1996), Green Maps set boundaries in terms of what type of data constitutes “green” data. Both favour quantitative data to the exclusion of qualitative data and have a tendency to freeze information by restricting people from adding to the picture.

A plethora of other local mapping initiatives have come about, such as indigenous communities fusing their traditional map-making techniques with other mapping processes to fight for their rights – and with success (Harrington 1999: 2). These call for democratic mapping processes and have attempted to reframe who and what a map is for. Indigenous maps are often made, used, re-made and used again in a communal setting. Both indigenous and standard maps can become powerful dynamic educational and decision-making tools (Common Ground Project 2008).

Participatory geographical information system projects have burgeoned recently and focus on ensuring the voice, and so the map, of “the other” is heard/seen (see Cope 2008; Elwood 2008; Ghose 2001; Kitchin 2002). Such projects gather and input data with the community using GIS software. Data sets can then be modelled geographically to raise community issues to influence policy-making. Qualitative data is also being gathered in this way to ensure that issues are not excluded from the map and so that sophisticated data sets can represent realistic views of how people are operating in a place (Kwan 2007: 175). Modern technology is set to revolutionize the production and distribution of maps further than this. The global Web has made the means of production available to almost everyone with access to it. Wikipedia is a prime example of an evolving knowledge resource based on online community data editing, while Google Maps allow the creation of custom-made maps, substantially lowering technical difficulties of map creation.

theirwork 99

All the above examples use participatory mapping methodologies but some reject proprietary mapping software. For instance, Google Maps is founded on the open source software approach, allowing free access, adaptation and re-distribution of software without any or few copyright restrictions. This free and open access to all must be seen as a much more sustainable, holistic approach to mapmaking. Within the field of Google Maps this open, integrated, community-led approach to developing a project has much to offer, in particular to groups who wish to mobilize a community wanting to feel invested in a movement, as is the case with Green Map System.

### **theirwork: the project**

*theirwork* is an online open map. Open source software that drives the map is available for anyone to use or re-appropriate, rejecting a proprietary approach. Loe Pool in Cornwall, Britain (the county's largest natural lake) is the first area to be mapped by the software. While mapmaking is at the centre of the project and is used to ground the collected data, it is also used to root the project in real-time space. *theirwork* works closely with end-users, who are treated as co-developers by walking, talking and recording in its landscape. The mapmaking it seeks to produce is grounded in multiple perspectives; therefore multiple voices and autonomous experiences are documented via first person sensory experience and through a community's felt experience of landscape. The project is open, inclusive and non-hierarchical in both form and content. The software (form) and data collection (content) are symbiotic and mutually supportive in terms of "openness". *theirwork* software rejects a top-down system of classification or taxonomy and adopts instead a system of crowd-sourced labelling, or what has been dubbed folksonomy. Regarding authoritative and hierarchical taxonomic systems as disempowering, the folksonomic approach enables the *theirwork* participant, who works online, to collaboratively generate open-ended labels for mapped data.

Using open methodological frameworks, *theirwork* ensures that the development, production and dissemination of local definitions of place are gathered and visualized through soft (qualitative) and hard (quantitative) data collection, without any restriction on re-use. Importantly, such innovations guarantee that local definitions of a place are presented using sustaining, rejuvenating software. Foregoing other top-down systems that often produce hegemonic systems and organizations (such as copyrighted Ordnance Survey maps and copyrighted Geographical Information Systems (GIS) data), *theirwork* innovates and builds upon the movement called Green Mapmaking.

### **Critiquing green mapmaking**

*theirwork* adopts three cognate disciplines: psychophysical geography,<sup>1</sup> phenomenology<sup>2</sup> and ethnography.<sup>3</sup> These complementary approaches have created a methodological framework, through which open data is sourced

100 *Dominica Williamson and Emmet Connolly*

and collected. Ethnographic methodology ensures multiple voices construct the map: the phenomenological approach ensures autonomous experiences are documented via first person sensory experience, and through a community's felt experience of landscape. Last, a psychophysical geographic approach ensures the map is emotive and deeply personal. All three approaches ensure the map is grounded in locality, subjectivity and a lived experience of place. A common discourse exists among cognate genres committed to plurality, locality and subjective interrelations of body-landscape. Immediately, the terms Green Mapmaking, indigenous mapmaking and bioregional mapping come to mind, each advancing and augmenting current mapmaking praxis. *theirwork* is situated within all the above, but seeks to advance the area of soft data collection and challenges existing software that is used by many mapmakers – as although existing maps often work on the principle of open content and sharing, many use closed systems of software and licensing production to make their maps.<sup>4</sup>

In line with bioregional mapmaking and the writings of Ben Whelan (2002: 36), *theirwork* calls 'the community into the process of mapmaking' where 'the charted landscape is filled with the stories of its dwellers and an intimate knowledge of their ecosystem'. Whelan's (2002: 36) call, radical and compassionate, seeks to deepen 'the communion between human and nature' and create maps 'that can accommodate multiple levels of reality'.

Bioregional mapmaking's allegiance to the non-human world grew directly out of various genres of indigenous mapmaking – all wayfinders deeply connected to the landscape. Mapmaking that calls for a human appreciation and protection of the landscape and its indigenous species, has in turn created a genre of urban bioregional mapmaking called Green Mapmaking. *theirwork* is situated within Whelan's inclusive discourse of Green Mapmaking praxis; for example, *theirwork* 'seeks to energize local knowledge and mobilize citizens into action' in order to address "greenness" (Green Map System 2007).

Green Mapmaking at first glance appears an inclusive term, because it allows communities to shape their own picture of the present and future, by supplying toolkits that encourage them to chart their natural and cultural environment. These toolkits centre on a set of global Green Map Icons that the community must use in order to label their project a Green Map. However, this model still operates through a structure of exclusivity. Although these toolkits are a marked improvement upon Ordnance Survey maps and other traditional mapmaking systems, they are still partly exclusive in terms of creation, access and usage – in short, they restrict innovation. First, the structural and visual boundaries of Green Maps are often defined by criteria, which in turn are usually defined by a steering committee. Second, software is difficult to use when a community want to reproduce icons digitally. In an online environment, due to copyright restrictions, icons are almost impossible to use. Third, data is hard and lacks qualitative insight. Definitions of a locality tend to be shaped by hard data collection only, because data is often fitted into this icon set. Last, icons, although a powerful visualization

theirwork 101

tool, are aligned in our cultural memory with traditional topographical maps and their boundaries.

Green Mapmaking is situated within the wider problematic discourse of sustainability. For example, *theirwork* was born out of a concern for the environment, fuelled and shaped by an escalating political rhetoric that centres on the concept of sustainability. The European government is attempting to translate and implement sustainability through a practice-based legislative process, whereby industry is forced to comply with greening initiatives (EurActiv 2009) and general “lay audiences” are targeted by local government bodies to construct social well-being and encourage new communities via new initiatives (United Nations 2008).

The concept of a Green Map was created in New York over a decade ago. At first, Green Mapmakers did not directly use sustainability and its associated terminology. However, bioregional mapmakers and Green Map System started to use the word to situate their work within a wider socio-context. ‘The impetus for creating and teaching these new skills of sustainability [and mapping] are coming from residents in scores of places who refuse to see their social and ecological capital either under-utilized or squandered’ (Harrington 1999:6).

Here in the UK, different fields of knowledge work to gain funds that will help them address the social, environmental or economic aspects of sustainability, but few agree about what the concept means in its entirety and even fewer are able to implement it in practice:

[. . .] problems arise in part because the sustainability of the human enterprise in the broadest sense depends on technological, economic, political, and cultural factors as well as on environmental ones and in part because practitioners in the different relevant fields see different parts of the picture, typically think in terms of different time scales, and often use the same words to mean different things.

(Daily *et al.* 1995: no pagination)

*theirwork* recognizes the confusion and disparity that surrounds the word sustainability. Most importantly, *theirwork* believes the term sustainability exists and operates within a number of governmental hegemonic discourses, i.e. the term itself is continually produced within legislative power structures. For example, Agenda21 officers were situated in each UK district council by the late 1990s. Their job was to help find sustainable solutions to problems within their local community.<sup>5</sup> In contrast, *theirwork* does not centre mapmaking praxis on generic or legislative definitions of sustainability, but rather encourages dialogue that supports the re-formation of self, community and place. *theirwork* does not seek to overturn generic understandings of sustainability, but rather seeks a more complex understanding and proliferation of the term via local “grounded” definitions. *theirwork* therefore builds on Green Mapmaking and sustainable discourses, but has created innovative

102 *Dominica Williamson and Emmet Connolly*

strategies within the genre of bioregional mapping, particularly in the following areas: mapping software, online access and the gathering of soft data.

### **Possible solutions, coming from open source**

Having identified fundamental problems and restrictions inherent in existing models of Green Mapmaking, the question of how to define an alternative framework presents itself. The flexibility provided by Internet mapping has already been explained, and in the case of *theirwork* was seen as the most likely medium to allow the type of open-ended activities that traditional Green Maps cannot.

There is obviously an established body of work in the field of web-based mapmaking that requires critical appraisal. First, however, it is necessary to survey the wider terrain of computing and take stock of what influences can be garnered from its politics and philosophies. An immediate parallel can be drawn between the wider green movement, from which Green Mapmaking emerged, and the open source software movement. In an effort to establish a more holistic and sustainable approach to mapmaking in general, it was deemed necessary to focus on each of the constituent parts that the framework takes, and ensure that the approach is consistent and self-propagating. Hence, a focus on the ideologies of software development was central to the maturation of *theirwork* as a coherent movement.

The open source movement at its core stands for the development of source code (the algorithms and computer logic written by computer programmers to create software) in a completely open and free way. Pragmatically, this manifests itself as a methodology of making code freely available to anyone who may wish to access it for any purpose, unconditionally. Concurrently, open source is for many a philosophical approach to software development, and is seen as the only truly sustainable approach to software development. Open source code may be shared, studied, copied, reused, modified, built upon and redistributed in any way. As such this model has made possible innumerable software projects that would otherwise have been almost impossible to realize (the most popular examples include the Linux operating system and the Firefox web browser, both used by millions of computer users).

The possibilities of the model are highlighted by open source evangelist Eric S. Raymond in his seminal 1997 essay *The Cathedral and the Bazaar*, in which he compares the development approach to 'a great babbling bazaar of differing agendas and approaches', all of which create a finished product that could never have been designed or executed by a single architect.

In today's world of corporate global software giants, whose billions are based upon the materiality and inaccessibility of code, this can seem to be a revolutionary set of ideas. Yet in both its execution as a model for making possible new forms of collaborative work, and its philosophical underpinnings

theirwork 103

of sustainability and openness, it is an essential component in and influence upon a computer-based mapping solution.

In the earliest planning stages of the project, it was resolved that in order to improve upon the existing framework of Green Mapmaking, the entire back-to-front process of it should be executed in line with the ideals of the project as a whole. The ongoing development of the tool, the process of creation, was taken to be as important as the final artefact, and consistent with the ideology that drove its inception. Thus, although the use of open source software was in line with the spirit of *theirwork*, this alone was not sufficient to constitute a holistic approach. At every stage of development, decisions were consciously influenced by the desire to create a project that would at every turn reinforce itself. As this concept developed, the approach came to be labelled 'sustainable software', and drew together influencing characteristics from a number of disparate fields, combining select strands from each into what was hoped to be a coherent whole.

The architectural method of adaptive design, that of designing and building to ensure that a system retains enough inherent flexibility to be modified (or even encourage modification) that had not originally been considered, was an influence on the planning of the project outcome. The Slow Food movement, which encourages a change of pace and even lifestyle in order to reassess priorities and values, was another.<sup>6</sup> Apart from open source licensing, the object-oriented approach to writing computer code, which ensures that each part of the code is modular and easily replaceable, was an influence from the arena of technology. The copyleft and Creative Commons (2008) movements that eschew the traditional concepts of information ownership in favour of a more liberal approach to content sharing (of which more later) were studied carefully. Some of these ideas were adapted quite literally, but were also taken as philosophical or political approaches, helping to shape the concept of sustainable software.

With a driving ideology defined (or as clearly defined as any set of ideas which have at their core the intention to be as flexible as possible), the question of how to actually implement the project naturally arose. It was decided at an early stage to make the software web-based to allow for a process of rapid development and iteration and allow a maximum number of potential participants. Another, more pragmatic, reason was to facilitate the fact that the two main contributors to the project live in different countries; almost all communication was carried out via a combination of email, phone and instant messaging. Likewise, the development of the project was largely carried out 'in the open', with participants contributing via the *theirwork* blog, wiki and online forum (Figure 6.1).

For reasons that should be obvious from the influence of open source, it was decided not to pay for the right to use commercial mapping software. One of the next obvious approaches when creating web-based maps is to use an already-available service, such as Google Maps. It is relatively simple to create what is known as a Google Maps mashup; that is, taking an existing

104 *Dominica Williamson and Emmet Connolly*

Figure 6.1 Participants' contribution via the *theirwork* interface. Source: author screenshot.

map, and overlaying one's own data on to that map. As an immediate technical solution, a Google Maps mashup would appear to be the easiest option.<sup>7</sup> However, close inspection of Google's terms and conditions revealed that the licensing it bore did not meet the strict guidelines that had already been established in relation to software licensing for the project. Nor did any existing open source mapping toolkit meet the needs of the project. It was eventually decided to build a custom software solution, and make it available to the public as open source software. It should be noted however, that a number of existing open source toolkits were used to create smaller parts of the tool, combining to create a new whole. Without the ability to reuse and adapt the code that already existed within the ecosystem of the open source community, it would have been practically unfeasible to develop such a complex system.

Creating a base image for the map (i.e. a top-down view of the lake where the project was piloted, on which to plot the data) was not an easy process. Again, licensing restrictions proved a point of contention; the now-controversial laws surrounding Ordnance Survey data meant that purchasing the map data for the lake was ideologically and financially out of the question. Although there are nascent communities such as OpenStreetMap (2004) currently endeavouring to make geodata freely available in the UK,<sup>8</sup> no efforts existed in the geographic location that *theirwork* focused on. There was no



theirwork 105

pre-existing, freely available data on which to build. In order to obtain the data, GPS units were used to record the track points of a walk around the perimeter of the lake, and specific points of interest were marked along the way. The result was a matrix of latitude and longitude GPS coordinates, which were then loaded onto a computer, where pre-existing open source software was used to generate a simple line drawing of the lake's outline. This outline was then annotated by hand to create a defined background map on which data points could be plotted. This was a laborious and technical process, and represents one of the major remaining obstacles to the breakthrough and popularization of people-powered mapping; it might some day be overcome by the development of user-friendly convergent hardware that integrates GPS with popular consumer recording devices, such as cameras.

The fully developed beta version of the software consists of a web-based Google Maps-like interface, by which the user can interact with a map of the lake. A number of data points that have already been added by other users are overlaid on the map and may be clicked for more information. What makes *theirwork* slightly different from other mapping software is the ability for users to immediately add their own points of interest to the map directly at any time. They may also edit existing points to improve them as they see fit. This open model of community data editing is taken directly from the wiki model (the best known example of which is the online encyclopaedia Wikipedia), in which participants may add or edit any page on the website. This distributed model of content creation can work remarkably well in some cases, and is surprisingly capable of "self-healing" in cases of vandalism, whereby a subsequent user notices and immediately rectifies an existing error.

At the same time, a completely open data system such as this could make for a chaotic set of data, if not presented in a logical manner. The question arises: what is a sustainable model of group data classification? Green Maps have encountered the problem that their maps can be too narrow in subject if a strong editorial control is exerted, and too chaotic and unstructured if free reign is permitted.<sup>9</sup> How can people be empowered to add whatever type of data they wish to the map, but also have a coherent picture emerging from the map as a whole?

Fortunately, computers are adept at taking a lot of information and shuffling it, or slicing and dicing it, in any way. Many websites with user-generated content have experienced a similar problem recently, attempting to classify an open data set without imposing structure. The aim is to somehow capture (to paraphrase a book title on this topic) the Wisdom of Crowds (Surowiecki 2004), and allow an emergent picture to develop from the teeming mass of individual actions happening within a system. The solution here is to reject a top-down system of classification, or taxonomy, and adopt instead a system of labelling, or what has been dubbed folksonomy. This involves rejecting any notions of hierarchical classification, and allowing users to tag their data with keywords that describe it instead. A data point has many keywords

106 *Dominica Williamson and Emmet Connolly*

pinned on to it, instead of being placed into a single category. This actually opens up the process considerably, and leads to a much more creative way of adding data. Users now have the freedom to use the map in ways that the map designers may never have even conceived. The map becomes an adaptive, open-ended, and sustainable ecosystem of data.

At the data output stage, when trying to discover or extract all of the data that a user is interested in, they do not dig down into a category to find the relevant items, but rather filter out all items by keyword. This may be thought of as viewing a cross-section or slice of all data, except that even within this single slice, there exists a lot more information still to be mined; many more strata of keywords that may line up, or move off in a different direction. The whole experience makes for a much richer data process. This approach works well for open data in mapping, as it means that we can dismiss concerns about misclassified information, or editorial control, and concentrate on extracting a meaningful signal from the rich information set. This opens up a route for an entirely new type of emergent, community-developed map creation that coherently represents the combined impressions of an unrelated group of self-interested actors, and conveys a truly distributed simulation of a geographic space.

### **Developing open data, out of place-based mapping**

The voice of the participant, rather than the voice of the researcher, will be heard best when participants not only provide the data to be analysed, but when they also contribute to the questions that frame the research and contribute to the way data are analysed.

(Ezzy 2002: 64)

The above quote encapsulates why an ethnographic approach was necessary in this project. In terms of mapmaking praxis, construction of the map has been an entirely de-centred process and authoritative models of data collection and transcription have been overturned. The application of ethnographic methodology ensures multiple voices construct the map. Within this work the relationship of emotion, memory, and sensory engagement with the landscape was mapped. First, data was sourced while walking, talking and recording with participants on the landscape. After an initial recruitment period and focus session, each co-developer chose a location for a “one-to-one” walk that in some way was connected to the lake. Co-developers chose the date and time – some brought their binoculars or dog along, others even brought “somebody else along”. The co-developers were helped in tracking the walk; sites of interest, objects, plants and animals, favourite places, memory spots and stories connected to the place. Places were noted using cameras, notebooks, a GPS unit and a dictaphone. A framework of open and closed questions was asked. Answers to open questions, such as “What do you feel about the lake?” were geo-tagged. The “type of walk” (their special

theirwork 107

walk) became an integral part of data collection and data analysis. These processes helped capture the walk and created a supplementary resource to each recorded conversation that took place, which was then transcribed.

In the spirit of ethnographic methodology, transcription and coding of data was a mutually inclusive activity (all information was verified with co-developers). Some of the codes that developed from the walks were words such as rocks, water, agriculture, birds, meditation, trees, fields, memories, fish and events. In a paper-based workshop, co-developers then jointly discussed the codes and each shared their record of the walk from memory. Memories were added to the discussed codes. Importantly here, qualitative data became coded by the co-developers and not by some distant and “removed” ethnographer. To this end, paper-based tags were ready-made for the map interface. A sort of starter kit had been created, effectively introducing co-developers to tagging or folksonomy. Qualitative coding methodologies in turn introduced the community to the art of good folksonomy. This is an important issue, because it deepened the practice of folksonomy and helped to reflect on it in a practical and academic manner.

A computer workshop then tested the beta version of the sustainable software. Each co-developer put marks on the map, using latitude and longitude figures supplied from the archive of walks and paper-based workshop. They tagged their marks efficiently and with ease, having been introduced to the concept of folksonomy in the paper workshop. When things started taking shape onscreen the mood in the workshop room was electrifying. Everyone watched their places appear on the map – and all the efforts and concepts that must at times have seemed utterly puzzling started to make sense and finally paid off. Technical problems were fixed as and when they arose. Co-developers’ views, feelings and ideas for the future of the software, as well as ideas for new data, were taken into account.

Outdoor events have since become interchangeable with ongoing paper and computer workshops. All types of place-based mapping happenings have been called for by the co-developers, and are enabling the gathering of data that was not pre-determined. For instance, moth migration nights, stargazing gatherings, butterfly balls, drawing picnics and plastic bag counts have taken place. The geo-coded data is challenging how the base map could look and function, and is drawing in experts in the field of flora and fauna and qualitative research.

At present, when data is added, co-developers either leave trails of red dots where they have been recording a walk or they add to pools of information where groups have gathered. For instance, a moth and bat night focused on three spots at the mouth of the lake, and became like three micro-maps of fascinating creatures and facts (Figure 6.2). These red marks could become a sea of pictures, telling a tale of moths in this area. At the moment pictures are uploaded to a separate space, to a group Flickr (2004) account. As funding is applied to develop the project further, the co-developers will become involved in the application, asserting what they think should be

108 *Dominica Williamson and Emmet Connolly*

Figure 6.2 Moths from left to right: Angle Shades trap 3, Black Arches trap 1, Brimstone trap 1 & 2. Photographs by co-developer Nikki Schneider. Source: authors.

developed next. Their priorities so far are: to make the base map more sophisticated; to make their map entries about each place more editable; to style the forum and to be able to guest blog (at the moment the project initiators and a few others are blogging).

### ***theirwork* in summary**

*theirwork's* development philosophy and production activity seeks to offer an example of sustainable mapping in practice. Open-ended in nature, the project seeks to help communities to care for a place through the creation of a shared language through open and unrestricted content. As *theirwork* is in its infancy, it is as yet impossible to make an objective assessment of its effect on software development and mapmaking at a bioregional level. At a subjective level however, memorable place-based mapmaking experiences are taking place because of this type of mapping, and are affecting how a small group of people view an area they regularly spend time in. Due to *theirwork* activities they are seeing things they never saw before, learning things they did not know before and importantly, are collectively finding a way to share knowledge about a place. It appears that encouraging the idea of effective and active sustainability productivity is attached to place-based

theirwork 109

mapping. *theirwork* will therefore continue to support this angle of inquiry and is inspired by theorists such as David Abram (1996: 273–4), who calls for re-habitation through action of place and of body, so that we can inhabit places like coastal forests and grassland again; and writers such as Jay Griffiths (2006: 16), who are against the closing down and patenting of open knowledge: ‘Not for nothing is wild knowledge called “common knowledge.” Common knowledge is free, open, unenclosed – and “free” financially: it must not be bought or sold for profit.’

Akin to public participatory geographical information system (PPGIS) projects, this project then calls on a political level for everyone to have access to spatial data and to be able to add to the picture, so as to help develop and protect ‘traditional knowledge and wisdom from external exploitation’ (PPGIS 2008: no pagination). Second, it demonstrates that if carried out appropriately, participatory mappings are political and powerful ways of learning and sharing how to use a place (Kitchin 2002: 57). Third, as Mei-Po Kwan (2007: 171–2, 175) advocates, the use of qualitative and quantitative geographical research enables a more informed and so realistic set of data. Crucially, however, the project advances local mapmaking by rejecting complex and expensive proprietary software. It turns to online mapmaking as a way to create an open, inexpensive and accessible way of building data and of proffering an open Green Map. Although projects that utilize GIS software and build qualitative data with communities are advancing areas in the field of participatory mapping, they are also struggling due to GIS data restrictions (Elwood 2008: 73–5, 81–83; Ghose 2001: 142–4, 156–8). This software can build complex visualizations of data, and when used for the right occasions, places, peoples and budgets can build powerful results and case studies (for example, Kitchin 2002; Kwan 2007). Such projects argue for a spatial data for all, and work at grass route level, but more projects could take place if other forms of software, which are less complex and expensive, were available. *theirwork* does not claim to be able to replace such software but rather hopes to demonstrate that other software routes to mapping can deliver mixed methods approaches.

Combining psychophysical, phenomenological and ethnographical strategies is vital to local mapmaking. Qualitative researcher Iain Edgar (2004) encourages a visual ethnography and has developed a methodology that is not just of external images but is of an imagination of images from within. Such approaches applied to phenomenological mapmaking could empower communities in terms of getting them to visualize, claim and know their place. Continuing to combine hybrid ethnographical field research with computer workshops, which utilize a folksonomic approach to coding data, could continue to enable different types of people to engage with a place.

*theirwork* will continue to build on folksonomic developments to help assess how users find, add and extract data. For instance, it will look to see if data is tagged using time, as well as imagination and hard fact. Like technologists Joe Lamantia (2006) and Pietro Speroni di Fenizio (2005),

110 *Dominica Williamson and Emmet Connolly*

*theirwork* feels that the right use of this labelling system will allow us to 'see changes in the culture we are living in' (di Fenizio 2005: no pagination). In the future *theirwork* will concentrate on how it can continue to adapt the software and present its data in different ways. As technologist Matt Biddulph (2006) observes, anyone should always be able to get data out of the format it is in because no one ever knows when they may need to re-purpose it.

Accordingly, *theirwork* continues to embrace a digital psychogeography within this new neogeographical realm, and believes that such political, ethnographical and technological mapmaking will enable different types of communities to share and exchange data, information and knowledge.

### Notes

- 1 Psychophysics is the 'branch of psychology that deals with the relationships between physical stimuli and sensory response' (The Free Dictionary, <<http://www.thefreedictionary.com/psychophysics>>). *theirwork*, inspired by such books as *Textures of Place* (Adams *et al.* 2001) relates the psychophysical to geography.
- 2 Phenomenology is harnessed by *theirwork* in its broadest sense, 'addressing the meaning things have in our experience, notably, the significance of objects, events, tools, the flow of time, the self, and others, as these things arise and are experienced in our "life-world"' (Stanford Encyclopedia of Philosophy, <<http://plato.stanford.edu/entries/phenomenology/>>).
- 3 Ethnography involves intensive fieldwork and data gathering and 'may be pursued in a variety of settings that allow for direct observation of the activities of the group being studied' (Moustakas 1994: 1–2).
- 4 The *Green Map* network is based in New York. It uses open source tools but its own iconography is copyrighted, although the wider *Green Map* community, and not just the head office have developed the Green Map Icons.
- 5 For example, the Royal Borough of Kingston upon Thames' Local Agenda 21 implementation began in 1988, see <<http://www.kingston.gov.uk/environment/agenda21.htm>>.
- 6 It is in the field of eco-design, due to its prototyping practice, and its embracement of the notion of 'slow' (by Manzini, Fuad-Luke and *slowLab* (2005)) that *theirwork* looks toward the Slow Food movement.
- 7 Aside from the start of a Google Green Map-mashup (Dear Green Place 2006 whose code can be traced back to Emmet Connolly's Galway Free WiFi hotspots map (<<http://thoughtwax.com/sandbox/galway-wifi>>), few Green Maps have been geo-coded. If a Green Map has been geo-coded in the past, it has usually happened because a project has been linked or initiated by a more-than-profit organization or a learning institute that has access to GIS tools.
- 8 OpenStreetmap is a mapping project that became exasperated by the restrictions Ordnance Survey were placing on more-than-profit organizations and individuals. Lauded and used by like-minded activists such as the Free Our Data leader Michael Cross, it helps people through workshops and outdoor activities to make copyright-free base maps.
- 9 For instance, at a Green Map conference in Bellagio, Italy (a week-long event sponsored by the Rockefeller Foundation in 2002) criteria debates ensued following the presentation of a Green Map that had a McDonalds restaurant placed on it.

## References

- Abram, D. (1996) *The Spell of the Sensuous*, New York: Vintage.
- Adams, C., Hoelscher, S. and Till, K. (2001) *Textures of Place: Exploring Humanist Geographies*, Minneapolis, MN: University of Minnesota.
- Biddulph, M. (2006) 'Open data movement: The next wave of open source', presented at *Helsinki Institute for Information Technology*, 17 August. <<http://jyri.blip.tv/file/62508>>.
- Common Ground (1983) Website, <<http://www.commonground.org.uk>>.
- Common Ground Project (2008) *Common Ground Community Mapping Project*, <<http://www.commongroundproject.ca/projects>>.
- Cope, M. (2008) 'Becoming a scholar-advocate: Participatory research with children', *Antipode*, 40(3): 428–35.
- Creative Commons (2008) Website, <<http://creativecommons.org>>.
- Crouch, D. and Matless, D. (1996) 'Refiguring geography: Parish naps of common ground', *Transactions of the Institute of British Geographers*, 21(1): 236–55.
- Daily, G.C., Ehrlich, P.R. and Holdren, J.P. (1995) *The Meaning of Sustainability: Biogeophysical Aspects*, Washington, DC: United Nations University and World Bank, <<http://dieoff.org/page113.htm>>.
- di Fenizio, P.S. (2005) *Tagclouds and Cultural Changes*, <<http://blog.pietrosperoni.it/2005/05/28/tagclouds-and-cultural-changes>>.
- Edgar, I. (2004) 'Image in ethnographic research', in A.I. Alfonso, L. Kurti and S. Pink (eds) *Working Images: Visual Research and Representation in Ethnography*, London: Routledge.
- Elwood, S. (2008) 'Grassroots groups as stakeholders in spatial data infrastructure: Challenges and opportunities for local data development and sharing', *International Journal of Geographical Information Science*, 22(1): 71–90.
- EurActiv (2009) *Sustainable Development: EU Strategy*, <<http://www.euractiv.com/en/sustainability/article-117544>>.
- Ezzy, D. (2002) *Qualitative Analysis: Practice and Innovation*, London: Routledge.
- Flickr (2004) Website, <<http://www.flickr.com/groups/loepool/>>.
- Ghose, R. (2001) 'Use of information technology for community empowerment: Transforming geographic information systems into community information systems', *Transactions in GIS*, 5(2): 141–63.
- Green Map System (1999) Website, <<http://www.greenmap.org>>.
- Green Map System (2007) *Think Global, Map Local!* <<http://www.greenmap.org/greenhouse/en/about>>.
- Griffiths, J. (2006) *Wild*, London: Hamish Hamilton.
- Harrington, S. (1999) *Giving the Land a Voice: Mapping Our Home Places*, 2nd edn, Canada: Salt Spring Island Community Service Society.
- Kitchin, R. (2002) 'Participatory mapping of disabled access', *Cartographic Perspectives*, 42: 50–60.
- Kwan, M. (2007) 'Hybrid GIS and cultural economic geography', in A. Tickell, E. Sheppard, J.A. Peck and T. Barnes (eds) *Politics and Practice in Economic Geography*, London: Sage.
- Lamantia, J. (2006) *Second Generation Tag Clouds*, <<http://www.joelamantia.com/blog>>.
- Moustakas, C. (1994) *Phenomenological Research Methods*, London: Sage.
- OpenStreetMap (2004) Website, <<http://www.openstreetmap.org>>.

112 *Dominica Williamson and Emmet Connolly*

PPGIS (2008) *About PPGIS Website*, <<http://www.iapad.org/ppgis/ppgis.htm>>.

Raymond, E.S. (1997) *The Cathedral and the Bazaar*, <<http://catb.org/~esr/writings/cathedral-bazaar>>.

slowLab (2005) Website, <<http://www.slowlab.net/index.html>>.

Surowiecki, J. (2004) *The Wisdom of Crowds*, New York: Random House.

United Nations Division for Sustainable Development (2008) Website, <<http://www.un.org/esa/sustdev/documents/agenda21/index.htm>>.

Whelan, B. (2002) 'Mapping reality', *Convergence Magazine*, 36–7, <<http://www.sustainable.ie/convergence/magazine/convergence2002.htm>>.