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Mapping as Assemblage for Cultural Research

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Abstract

This article introduces a novel approach to the practice of mapping for the Cultural Researcher. Mapping is typically defined as a spatial concept where definitions of territory are represented. Recent interest in mapping and the affordances of Global Positioning Software (GPS) technologies offer new directions for exploring connections and flows across economic, social and cultural spheres. These new developments offer exciting ways to re-engage with spatial definitions and representations; however they can also be seen to maintain existing power relations that are inherent within previous modes. This article explores how the practice of mapping offers some methodological and conceptual revisions to what may constitute Cultural Research; that is, to situate the Researcher in a space of subject/object relations, rendered as fields or domains of data. Central to this, is to understand that the Research perspective is embedded within its 'object'; not sitting on the outside, looking down or around, but an integral agent within the data mapping process and whose role might be to record, emphasise, direct and facilitate selected connections and flows between networks.

Keywords: Mapping, cultural research, spatial representations, GPS

Introduction

[B]eing is always already being-with-one-another, not in terms of a pluralism that imagines a world of diverse yet discrete things, but in terms of what Bingham (2006) calls a 'community of singularities' in which different forms of life are constituted through what circulates between them. If we add to this the vitalist intuition that the world is not a fixed and eternal order, but is instead continuously 'added to' through the performances of people and things, **then the most pressing task we face today may be to develop institutional spaces and procedures that allow us to work through, in an agonistic manner, how this composition of common worlds should proceed ...** Given the interwoven nature of human and nonhuman lives, how might we slow down the process of assembly, in order to properly weigh the propositions that continuously confront

the collectives in which we dwell with new and often strange matters of concern?
(Anderson & Braun, 2008: 8 – our emphasis).

This paper's objective is to stimulate a dialogue about the pragmatics of cultural research, by proposing a set of frameworks for mapping as a process: the assemblage and connection of otherwise disparate and unrelated data sources. The cultural researcher is configured within these frameworks as an active agency. What is at stake here is a means by which to tap into potential dynamics and collaborative exchanges between researchers and communities in order to develop a rigorous approach to mapping as research practice; that is, the cultural researcher is an agency embedded *in* the data/social field who contributes to a collaborative organisation of the data/space with other identified agents/agencies in the field. As such, the boundaries between researcher/objects of research are understood as porous. Further, this opens up novel ways to configure the theoretical paradigms of cultural research as that which emerges from and in response to the complex of subjects/ communities/ objects/ researchers engaged through the activity of 'mapping'. As such, mapping invites the researcher to think of the theoretical predicates and assumptions of research as already 'on the map', challenging the assumption that theory and praxis are two essentially separate worlds the researcher must struggle to bring together.

Defining 'Mapping' Practice for Cultural Research

Maps are simply patterns of lines and symbols that describe highly selective aspects of what is real, frozen in one moment of time. Thus, all maps are only icons, powerful visual propaganda which intrinsically accent or ignore issues important to the map maker ... Maps are a basic form of communication – **laying down the law** (property maps, zoning maps), **analysing** (weather patterns, import/export trends), or **persuading** (artistic maps, occupancy or development maps). Maps have tremendous power (Harrington and Stevenson quoted in Lewis, 2009 – our emphasis).

As suggested by Harrington and Stevenson, mapping is a practice of interpretation that engages the mapmaker in a process of decision-making about what is included (and thus excluded). The map as a communication artefact is produced through a process of selection of data territories that engage with generally pre-determined forms of knowledge (legal, proprietary, technical, scientific, theoretical, esoteric, communal, archaic, personal, emotional etc). It is this stratified, cartographic image of the map that we (the authors) wish to distinguish from the frameworks we propose for cultural research, which rather proceed as a practice: research-as-mapping. This emphasis on *process* (i.e. the performance of mapping itself), rather than the map as artefact, is an important consideration in emergent mapping practises, which Abrams and Hall effectively summarise:

With this in mind, we chose the activity *mapping* rather than the noun map (which tends to connote paper artefacts) ... If a map is a completed document, mapping refers to a process – ongoing, incomplete and of indeterminate, mutable form. Mapping refers to plotting points and finding common terms of reference with which to analyse data; it benefits from the lack of finality denoted by the word *map*. Where maps measure and notate the world, mapping is, in the words of landscape architect James Corner, a 'collective enabling enterprise', a creative

act that describes and constructs the space we live in, a project that ‘reveals and realizes hidden potential’ (Abrams & Hall, 2006: 12).

Whilst this description specifically discusses the movement from ‘the noun map’ to the ‘activity *mapping*’, it more broadly identifies an emergent trend in mapping practices: namely the shift from definition to description as an alternate epistemological methodology or mode of knowledge interrogation. Further, this shift from definition to description bears upon the key terms and the structural predicates that orient and support the epistemological method itself. This opens up some important questions that require further discussion.

Who are the agents or agencies that make the decisions about what is selected and analysed – which Corner (1999) terms the ‘creative act’ and ‘collective enabling enterprise’? What prior ontological frameworks are put in place by the researcher to begin a mapping process? How are the performative events that research documents to be conceived and what institutional or wider contexts are being defined as part of a selective documentation process? What kinds of ‘knowledge interrogation’ could occur to produce new insights about connections between material environments, communities, individuals, and institutions? And what forms of resistance are likely to be found within the materiality of culture-as-data, given that mapping would presume to overlap and intersect disciplinary fields in possibly new and inventive ways?

Whilst these questions require much more thinking through than can be undertaken in this paper, one approach is to consider the ways in which knowledges – as connection points and structures of data – are constructed. If the underlying network of data linkages itself is understood as a conceptual model of representation carried out by the map-maker (agent) then cultural research will tend to prolong or exert spatial authority over territory, and whose analysis will perform persuasively to govern interpretations of territory.

If, on the other hand, the position of the cultural researcher is articulated within a collaborative, dynamic mode of praxis – mapping within the territory – then the construct of knowledge itself becomes a critical and contested site within this territory. Exposing the flows of data, then functions as a methodology to counteract the imposition of given knowledges from without. What is at stake here, are the ways that predetermined knowledge structures, as given, tend to reduce or dominate what agents conceive of themselves and their world to be, and more importantly, what is possible for them to become.

One way to begin to explore these possibilities is to consider Deleuze and Guattari’s description of the differences between what they term rhizomatic and arborescent thinking styles. Arborescent thought is described as linear, static, and ‘tree-like’ in its installation of a hierarchy of genealogical structures that continue to subdivide phenomena through formal principles of identity. The rhizome presents a radically different thought model, described as a form of network that cuts across these categorical borders: ‘a rhizome ceaselessly establishes connections between semiotic chains, organizations of power, and circumstances relative to the arts, sciences and social struggles’ (Deleuze and Guattari, 1987: 7).

The differences between these two thought constructs are shown in Figure 1. What this diagram emphasises is the transition that occurs from conceiving thought as the organisation of formal, systemic shapes of structured knowledges (tree-like), into an immanent field of sensory information that can be otherwise understood as data, variously assembled, along a variety of flows and points of connection.

Rhizomatic	Arbolic
Non-linear	Linear
Anarchic	Hierarchic
Nomadic	Sedentary
Smooth	Striated
Deterritorialised	Territorialised
Multiplicitous	Unitary and binary
Minor science	Major science
Heterogeneity	Homogeneity

Figure 1: Deleuze and Guattari's Rhizomatic Versus Arbolic (Leafgren, 2009:89)

More broadly, it announces that the rhizomatic model, like the broader mapping methodologies it is related to, implies or envelops those key post-structuralist insights which de-stabilise the assumptions of representational systems of thought (here characterized as arbolic). It is thus that the rhizomatic image of thought, calls into question the construct of knowledges: it is not only differentiated from arbolic or representational thought in the way it connects things together, but by the very way it calls into question what it is connecting or relating to:

The function of different modes of imaging, visualizing, sonifying or animating an object (and thereby also its analysts) becomes the question that governs the collective...Hence the proliferation of altered regimes of description ...which assumes that ontological boundaries (subject/ object, human/animal, animate/inanimate) are never stable, so much as evolving propositions, unfinished sentences, that, when looped or stopped, seek to close on something finite, but which always find a way of running on, for good and ill (Yates, 2010: 227).

To clarify, mapping is not just a shift to an immanent pragmatic methodology of conceiving information, but potentially a radical democratization of how we think about who we are, what is the world, and how we come to decide what we know or think about them. Above all, this implies a profound shift in the epistemological configuration and understanding of research *methodology*; it signals a shift in power relations (political, epistemological etc) between the cultural researcher/s, the 'object' of research (the social field) and also the research methodology itself, by returning our attention from those variously determined subject/object definitions, back to the flows and networks of data which precede them, and that can inform our practice of mapping assemblages.

Mapping, subjectivity and technology

A critique of mapping as research practice extends importantly to the question of technology as the means through which much of these emergent mapping

methodologies are potentialised. If the debates around the 'post-human' seek to problematise subjectivity in a technologically saturated social field, then arguably a consideration of material agency in this assemblage leads us to consider the 'pre-subjective' singularities in the digital stream, namely, *data*. The concept that power in the technologically saturated world is shifting from the possession of materiality (land, resources, bodies etc) to one of *information*, fails to grasp that it is in fact with data – those pre-individual, singular quantum of digital materiality – which prolongs, unbroken, materiality as the site of political, ethical and power contestation. What this suggests is a new emphasis on the pragmatic process of creating a mapping assemblage – that is, the pragmatic process of data assemblage involves bringing together new connections that are simultaneously real and virtual reference points.

The goals of organizing research are no longer primarily concerned with descriptive ends (i.e., not merely 'trac-ing' information). From a 'point system' of memory based on predictability, media studies shift to a 'block-system' of 'anti-memory' based on becoming. Speed, movement, and rhythm rather than place or horizon become crucial to a way of storing, retrieving, and linking information, which maps potential assemblages rather than merely tracing facts – a pragmatics (Ulmer, 1988: 440).

As Ulmer suggests, we are moving away from predictable critical analyses based on hermeneutics toward an inventive mode of documenting that encompasses the role and workings of sensory affects. As such, mapping offers us not only a method of organising data into meaningful information, but also a way of connecting and observing patterns of movement, force and affect across very diverse formal and disciplinary divides:

Mapping has emerged in the information age as a means to make the complex accessible, the hidden visible, the unmappable mappable. As we struggle to steer through the torrent of data unleashed by the internet, and to situate ourselves in a world in which commerce and community have been redefined in terms of networks, mapping has become a way of making sense of things...mapping is an increasingly vital activity, one that undergrids diverse disciplines and transcends the supposed physical/digital divide. It is the conceptual glue linking the tangible world of buildings, cities and landscapes with the intangible world of social networks and electronic communications (Abrams & Hall, 2006: 12).

However, as we have discussed above, the ability of mapping to deliver more participatory and community-rich agendas is not an assured development, as evidenced by emerging research around how people generally adapt and engage with readily available Geographic Information Systems (GIS) software. What seem to emerge are continuations of existing power relations within large institutions, where local agendas are continually marginalised:

Participatory GIS in theory delivers a more democratic spatial governance but the majority of this work emphasises the incorporation of local voices into maps produced and controlled by specialists, and articulating their agendas, rather than subverting mapping, or changing what is mapped. And truly participatory GIS is particularly thin in the British context. Wood (2005), for example, observes that very few community mapping projects in the UK have yet involved GIS. Even in the American context of publicly available federal spatial data, community mapping arguably does not threaten the interests of those with real power, and

sits safely marginalised in a local world of struggles over identity politics. In a recent review, Parker (2006) reflects that empirical studies of community mapping have focused largely upon indigenous mapping and the role of maps in the reassertion of property rights, rather than upon relationships between community mapping and power per se, or the practices involved in mapping projects (Perkins, 2007: 127).

In another example, for urban designers and architects, a technological ‘naturalising’ of the urban environment at the level of ‘surfaces’ needs critical attention. These surfaces can be understood to be the cultural flows and textures of urban daily living, that mapping as research methodology might be used to reveal new nodal connections and interactions. As Gregory Wessner, director of the *Towards the Sentient City* Exhibition, comments:

Of course, predictions for a future ‘smart’ city have been floating around for decades, and we are all familiar with the false starts and wrong turns. What makes this moment unlike any before, however, is that for the first time the decreasing cost of the hardware and the increasing computational power of the software have converged so that it is now feasible to embed enormously powerful digital intelligence and processing capability into any object or space of our choosing. If experience has taught us anything, it is that new technologies get integrated into the existing built fabric in complex and unexpected ways, and that the forms they take have an enormous effect on daily life and social relations. **A ‘sentient’ city will be a future reality. The questions now are: what will it look like, how will it work, and who will benefit from it?** (Wessner, 2009: <http://www.sentientcity.net/exhibit/?p=119> – our emphasis).

Similarly, *Towards the Sentient City* Exhibition curator, Mark Shepard adds:

To the extent that business interests and government agencies drive these technological developments, we can expect to see new forms of consumption, surveillance and control emerge. Within architecture, the recent fascination with building envelopes wrapped with large-scale programmable ‘urban screens’ or corporate lobbies outfitted with so-called ‘interactive architecture’ highlights the dilemma. **In an age of urban computing and ambient informatics, what opportunities for the design of urban artifacts and spaces lie beyond the architectural surface as confectionary spectacle or the interior vestibule as glorified automatic door opener?** (Shepard, 2009: <http://www.sentientcity.net/exhibit/?cat=3> – our emphasis)

The potential suggested here is a re-thinking and re-representing urban artefacts to adapt and incorporate more open engagements with human social relations. What this suggests for cultural researchers is the importance of positioning ourselves within these data-streams, to closely observe and interact with, the dynamic relationships between subjects and material spatiality in a nodal manner. It is important to emphasise that a mapping methodology is not merely the product of a desire for intellectual innovation, but is the attempt to respond to certain problematisations that are emerging within the social field. Nowhere, perhaps, is this necessity more evident than in examining the impact of evolving technology on subjects and the social world.

The question asked here is – How do we rethink this data in order to re-territorialise it to be of most usefulness? What are the ethical dimensions of this post-human,

material agency in a de-territorialised data stream? On the one hand, what Dan Hill articulates is the need to avoid an automaticity that the technology itself will define and generate. On the other, as Perkins' research makes very clear, we will have gained very little if we allow the network to become stratified into a representational model or system, which artificially or abstractly obstructs the flow of data in order to distribute it to existing power formations; that is to reiterate the importance that the cultural researcher becomes embedded in the data and facilitates the transformation of the data/social network from within, not from a scientific transcendent position outside or above the social (where unwittingly or not, research might very well participate in the continuation of existing distributions of power).

Finding a Way to Proceed – A methodology for subject/object assemblages

One way to re-constitute Deleuze and Guattari's rhizomatic schema might be to re-introduce the subject as various forms of agency within the scope of pragmatic mapping as research methodology. What we are thus proposing is a methodological schematic based on nodes of rhizomatic connection points between subject/object relations. This model seeks to encapsulate or reference data flows as *what is given* in any particular moment – as an interaction between and across territorialised knowledge that can in some way be described and captured within temporary and flexible representations of data, as segments of territorial flow. What is suggested is to conceive of knowledge as rhizomatic data flows through and across disciplinary boundaries, and to remain cognizant, above all, that knowledge is data configured essentially through *agency*. Thus we might come to consider many different kinds of information - abstract systems, concrete or experiential, anecdotal, emotional, methodological (to name just a few) – as data configured across a spectrum of its own diffusion and distribution into variously intentional systems and processes.

The proposed schema attempts to make visible the agencies animating these viewpoints, through the juxtaposition of two axes denoting different kinds of knowledge ('Abstract/Concrete' and 'Distributed/Undistributed') that traverse the data field.¹ The four descriptive nodal segments that result from this overlapping axial schematic are 'personal interpretation', 'legal and scientific concepts', 'proprietary industry secrets and copyright' and 'local knowledge that is embedded within cultural forms'. Figure 1 shows this as a set of possibilities for how mapping practices might strategically proceed in a non-deterministic way to uncover and re-cover new territories for cultural research. What is suggested here is a model for critiquing the territoriality of data, or re-thinking it, in light of the above concerns. This approach seeks to reframe our understanding of knowledge as data from being somewhat transcendent or synthetic, to something that can now be understood as more dynamic and that arises from the emergence and changing patterns of data, in a specific context, and from a particular perspective. What we are seeking to articulate through the model is a way that mapping as research methodology might be used to generate insights about what circulates between different forms of life as Bingham's 'community of singularities'.

¹ The following proposal is intended to be instructive of the methodology developed thus far, but is by no means intended to be definitive (in fact, we can easily imagine many other such models).

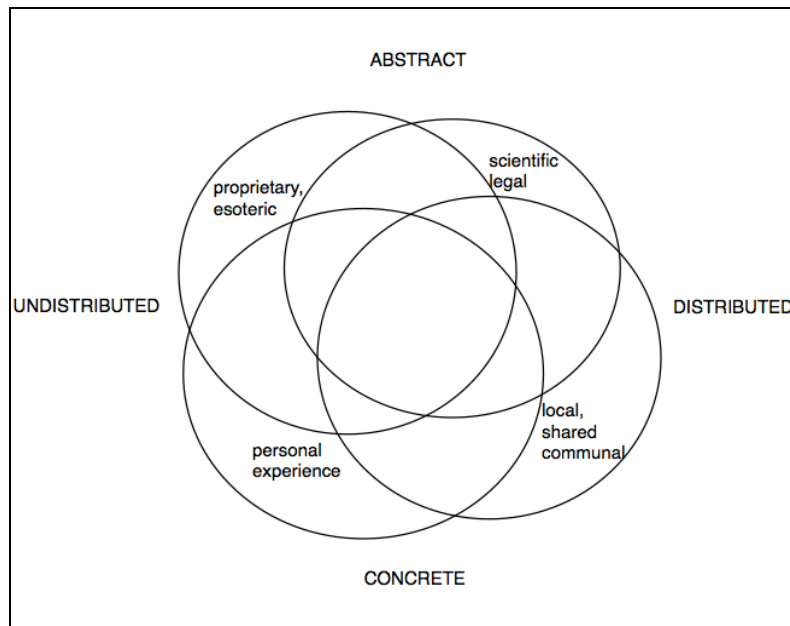


Figure 2: Modes Model: Mapping as Cultural Research Practice

What Figure 2 suggests is a way in which the cultural researcher might begin by selecting a particular framing mode, to begin constructing a mapping assemblage as connections across the domains described. This intentionally links ‘subjective’ flows of data (such as individual experience, communal, shared and local knowledges) with ‘objective’ recordings (such as natural, zoological, vegetative, legal, scientific and technical data). By starting at any point in the field, cultural research (and researcher agents/subjects) can proceed by locating and connecting nodal data that comes from any or all of the four segments as a series of observed events and performances, recorded through the lens of a particular overlapping field of relations.

The recording of such events and performative activities would then be evaluated – to identify patterns and relationships that occur over and during the period of documentation. Proceeding in this way, the cultural researcher is to become embedded in the data and to reconfigure and re-orient the data/social network from within, not from a scientific transcendent position outside or above the social.

As we have outlined, the ‘work’ in transitioning to a mapping methodology as cultural research is primarily theoretical, and it requires significant epistemological modifications, including the redetermination of key terms and structural predicates which perhaps even extend to the identity of the discipline and what it assumes to be its object of study. Whatever the case, a distinct advantage of mapping procedures is that, in their pragmatic application and methodological structures, they can be plugged directly into those existing hierarchical and representational models, which characterise many existing sociological frameworks.

As such, by adopting the schematic suggested in Figure 1, existing sociological and institutional spaces and procedures may be introduced and re-configured as data fields (what is given). That is, as territories for a documentation of repeated events and performative everyday acts of exchange and interaction to re-configure new experimental figures of the territory. In his chapter, ‘Complex and Minor: Deleuze and the Alterglobalization Movement(s)’, Graeme Chester discusses the formation of

such new experimental territorial assemblages in the loose network of groups comprising the Alterglobalization Movement:

As such, they are moments of temporary but intensive network stabilization, where the rhizomatic components of the movement(s) – groups, organizations, individuals, ideologies, cognitive frames and material resources – are simultaneously manifest and re-configured (Chester, 2007: 240).

In using this one example, Chester follows Manuel DeLanda's explication of mathematical influences in Deleuze's early work, to conceive territorial frameworks, which not only remain open to, but responsive to the immanent changes and demands of the evolving social milieu. Whilst this point remains limited to a particular cartographic example, it echoes the key points we have stipulated for an effective mapping methodology: namely, by displacing the power dynamic evident in the inscription of a transcendent, celestial point of view to an immanent distribution of mobile authorities (the various agents embedded within the field, which govern its emergence from within). This highlights a particular significance of mapping as an assemblage practice that links abstract and concrete data flows: it may lead to the identification of a series of relationships that may or may not be initially evident. The question here is how and what is initially chosen to create any particular map, and what is/could be re-territorialised as a result?

This is how it should be done: Lodge yourself on a stratum, experiment with the opportunities it offers, find an advantageous place on it, find potential movements of deterritorialization, possible lines of flight, experience them, produce flow conjunctions here and there, try out continuums of intensities segment by segment, have a small plot of new land at all times (Deleuze and Guattari, 1987: 12-13).

Application of the domains model – some examples

In order to further explain how the model in Figure 1 may be useful, we briefly present some examples of digital mapping projects and locate them within and through the schematic in Figure 1. The intention here is not to reduce or constrain the creative application of mapping but rather, to show by example, the ways in which our schematic emphasis on processes and modes may provide the cultural researcher with a methodology for exploring new connections.

Example 1: Source Map <http://www.sourcemap.org/>

Described as a platform for researching, optimizing and sharing supply chains, MIT Media Lab's project titled 'Source Map' is an open source coding site that can be used to document the life cycle and material and energetic flow patterns, through and around modes of production: what things are made of, how they are made, where they come from and where they go. 'Products' are thus radically reconstituted as data flows and networks of cultural and social economies; for example, a bottle of wine whose branding identifies it as a product of a specific culture and geographical region, may through the digital mapping of its life cycle, reveal a complex of supply chain flows that envelop global extraction, processing, and transport networks. Using this software, social calculators can be created to reveal the implicit flows and connections

that are embedded within all kinds of products and artefacts with profound social, economic, cultural and environmental implications. ‘Source map’ assemblages engage the data networks located at the top of our domains model, shown in Figure 2A. As we will see, it is the tendency for data mapping activities, such as ‘Source Map’ to move undistributed proprietary and esoteric data toward its distribution across local, shared and communal domains, that potentialise a power re-distribution across various social formations.

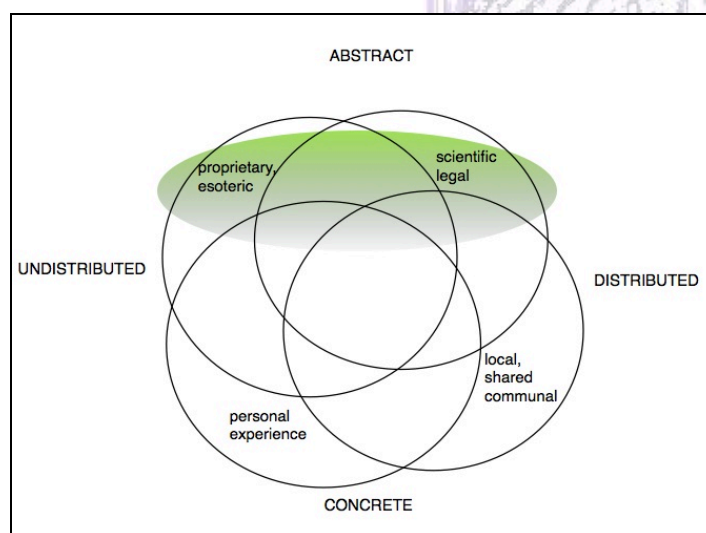


Figure 2A: ‘Source map’ as data assemblage

Figure 3 shows an example of a ‘source map’ assemblage that reveals the flow and network life cycle for the production of a PC computer. The data set reveals the location of all source minerals and technical components that make up the artefact, and the networks of transportation that are part of the production lifecycle.

In this way, ‘Source Map’ assemblages reveal that corporate and product ‘identities’ can be methodologies to block, restrict or control the flow of data across the network, in order that only selected fragments of the network are transmitted or prepared for distribution. As such, this constructed or unified identity functions to mask multiple and differential agencies, which the data field conversely exposes. In this way, the linkages that may be made evident by documenting these networks, made up of seemingly incidental details, draw attention to the object as a radically reconfigured social and cultural entity.

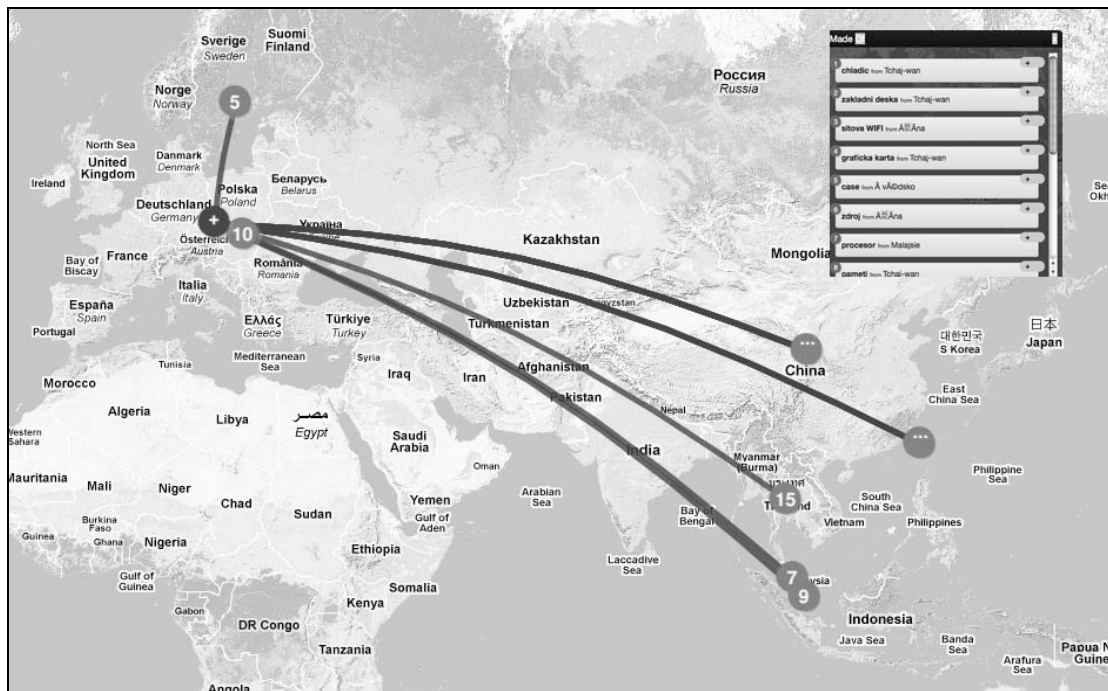


Figure 3: Source Map Lifecycle for PC production
(<http://www.sourcemap.org/trace/pc-1>)

Example 2: Christian Nold's Biljmer Euro project

Christian Nold's Biljmer Euro mapping project involves documentation of the circulation of tagged Euro notes in a local community of shops. The intention of this mapping assemblage is to reveal the circulation of currency as flow and network towards enabling the sustainability of a local communities social economy. The value of this could be useful to inform shopper decision-making, and also to identify specific connection points of flow across the system. This project is located across the model's domains of abstract proprietary and local shared concrete data shown in Figure 2B:

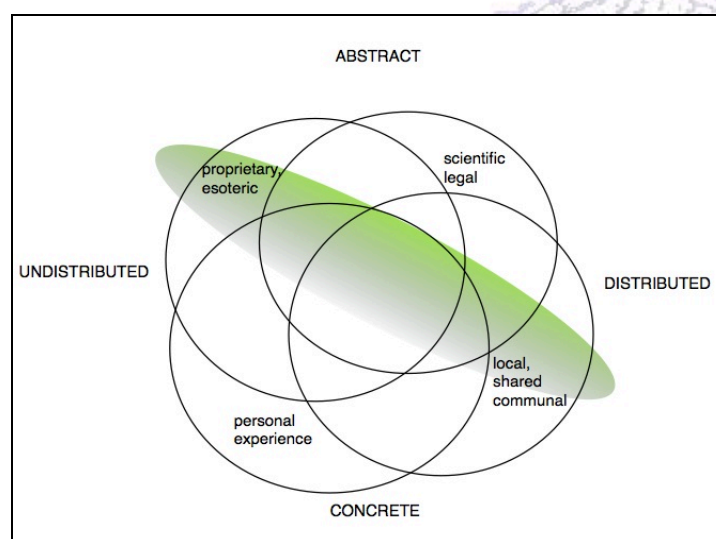


Figure 2B: Nold's 'Biljmer Euro' mapping project as data assemblage

Nold comments on the value of the project in identifying unique connections of flow within the data:

There are 2000 Bijlmer Euro notes that can be used at 17 participating local shops to get special discounts. Each Bijlmer Euro has a unique electronic chip which means you can see where they are being used (n.d.: <http://www.bijlmereuro.net/?lang=en>).

The evolving visualisation will enable local people and shop keepers to see how money is moving in their local area, something which is totally unique in the whole world. Fundamentally the visualisation allows anyone to identify purchasing and movement patterns, making it possible to draw conclusions about the use of the currency and the benefits for the local shops (2010: http://www.bijlmereuro.net/?page_id=15&lang=en).

For example, we may find that money is moving from a gym in the Bijlmer to the local bakery and back again. Perhaps this is because people are exercising and then at lunch time going and buying their sandwich at the bakery and then returning back to the gym. That sort of pattern might suggest a symbiotic relationship between local businesses. In this example both enterprises could co-operate for mutual benefit by selling sandwiches directly at the gym. Another example could be that the money is flowing between two shops who sell similar goods. This will indicate that people are going to a number of different greengrocers not just one. That would suggest that both shops might want to talk to their customers about stocking a wider variety of goods or perhaps specialising. We may also find that money is not moving between two shops that could benefit from the mutual custom. This might be an incentive for the shop owners to discuss with their customers about setting up some co-operative offers (2010: http://www.bijlmereuro.net/?page_id=15&lang=en).

Figure 4 shows the form of this mapping as flows of tagged Euro notes being exchanged between the shops involved. The representation of these flow and networks reveals patterns of cultural exchange as rich data that is determined by a specific place and time period. This mapping highlights the specificity of selecting place and time as constraints and limits to what is being researched towards an evaluation of the performances of people and things as process of exchange. The size of lines within the circle of shops indicates the strength of exchanges taking place across the network. As he suggests, these become points of departure for social and cultural insights about the nature of the network as dynamic and constantly changing and evolving.

What comes to the fore in Nold's project is the 'embeddedness' of the researcher within the domain of the local/communal. As such, Figure 2B highlights an erstwhile surprising fact; that the agency or subject of the cultural researcher may very well be anchored within esoteric and scientific domains, which may bear upon the flows of data networks moving throughout the system. Nold's proposal firmly situates the researcher within the local, by distributing the methodological tools of research to the local/communal domain itself. In this way, the flows of the research itself, its inputs and outcomes are themselves 'put on the map'; they are dynamic elements of the data network itself. In this way, distinctions between the 'subject of research', and the 'objective' figure of the researcher (supported by her/his research methodology), become transgressive and porous.

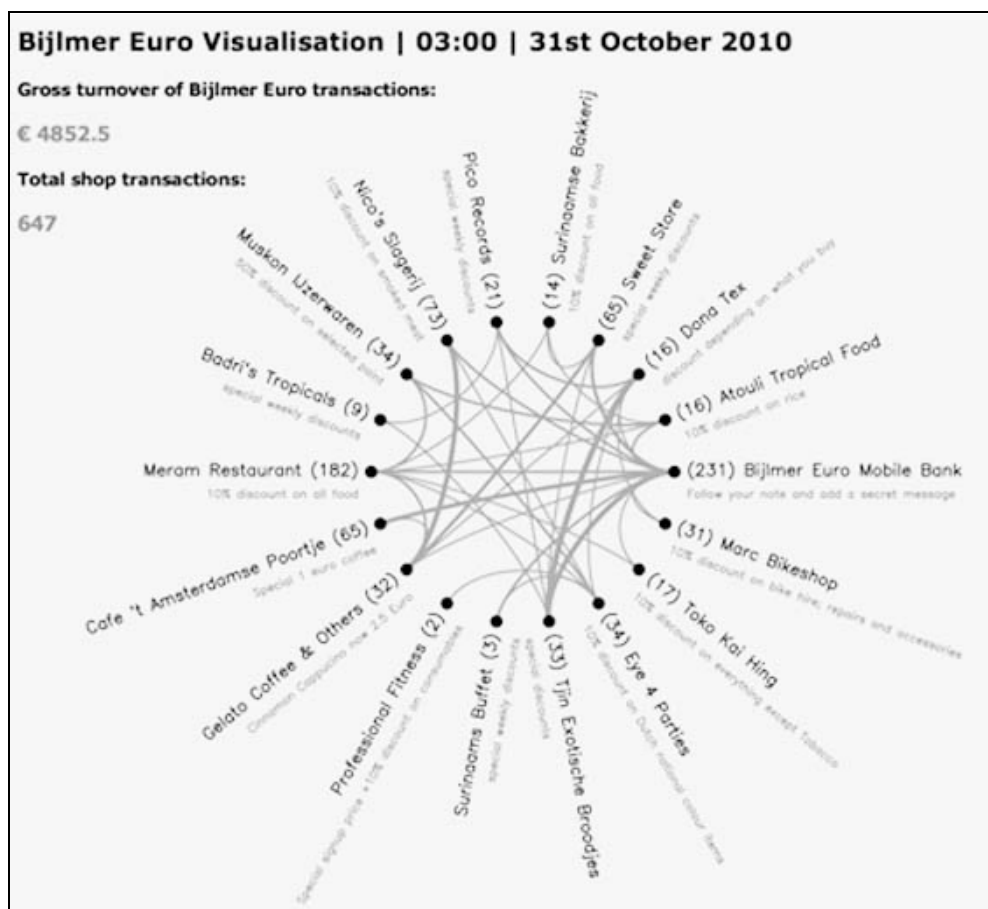


Figure 4: Nold's map of Biljmer Euro exchanges
(http://www.bijlmereuro.net/?page_id=15&lang=en)

Example 3: 'It's Buggered, Mate' Mapping Application

Similar to UK site titled 'Fix My Street' (<http://www.fixmystreet.com/?pc=2040>), an Australian site titled 'It's Buggered, Mate' (<http://its-buggered-mate.apps.lpmmodules.com/>) offers individuals a means to inform local authorities about problems with public utilities. Users enter spatial locations onto a Google map, and are able to use drawing tools to represent and comment on what needs fixing. These community engagement digital interfaces are called 'crowd-sourcing', and they offer authorities and individuals a mechanism for sharing of responsibility for public spaces and common interests. This approach to mapping would be located on our model's modes across personal concrete, undistributed and scientific, distributed data, shown in Figure 2C.

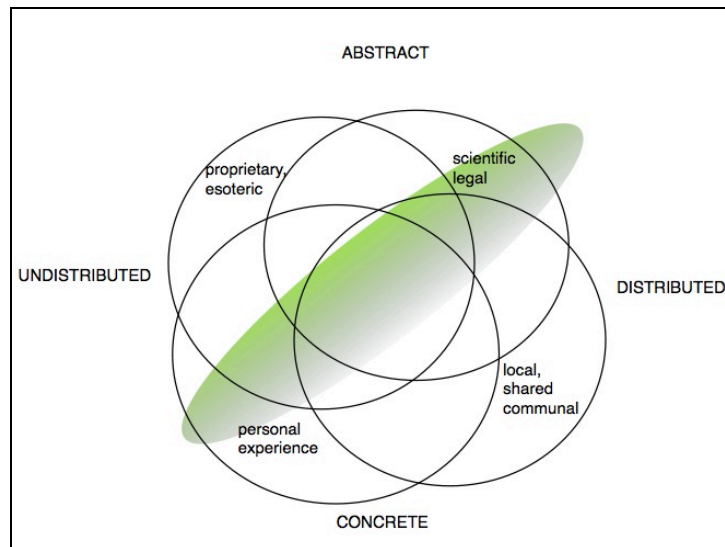


Figure 2C: ‘It’s Bugged, Mate’ crowd sourcing as data assemblage

Alongside reports of broken utilities, users can also make suggestions about improvements to the urban environment that engage with a wider context of urban planning and human environmental architectures. Figure 5 shows an example of a Brisbane site where the author has made a suggestion for how a vacant hole near a train station could be transformed into a local park.

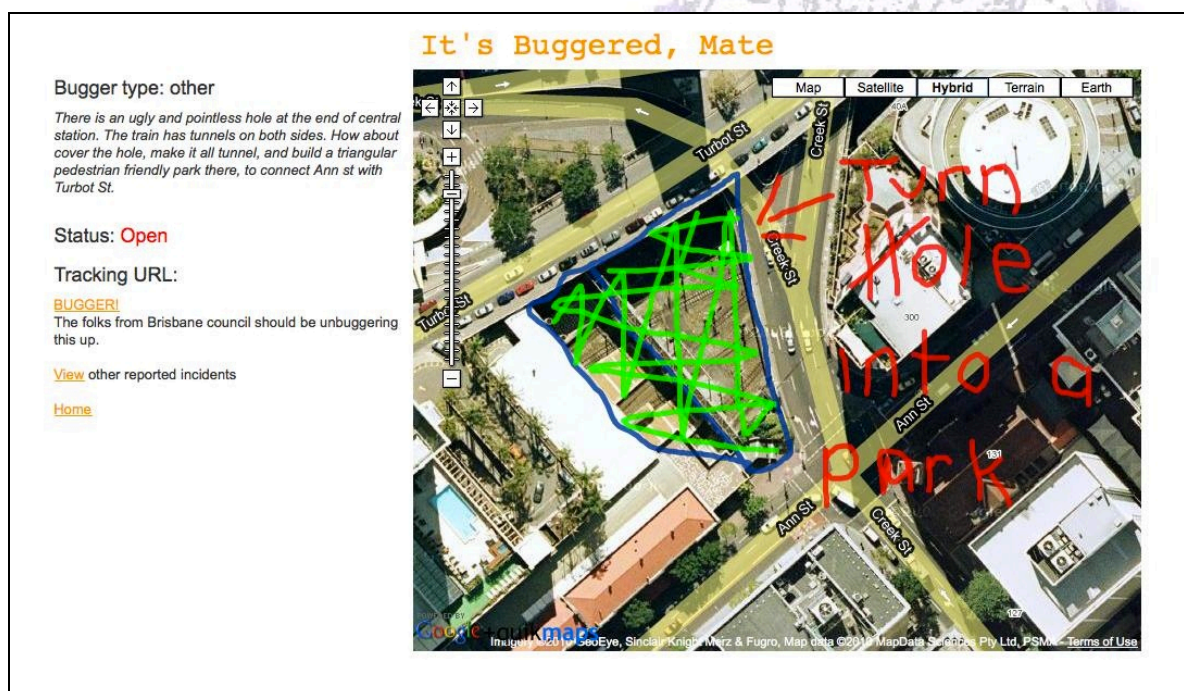


Figure 5: An example from ‘It’s Bugged Mate’

<http://its-bugged-mate.apps.lpmmodules.com/incidents/ef6ca61b0d156db4e22a9a9d88ad6d84>

What is significant in this mapping project is the way that connective enabling between the personal and legal/scientific domains, has a democratising effect that is not at the expense of individual agency (a political paradox of significant tenacity). As such, the ‘It’s Bugged Mate’ project evidences the wisdom of submitting theoretical and methodological structures to the data field itself. It is emblematic of

the feedback that information technologies, GIS softwares and social networking affect: that we need to consider them as not just the mechanisms of statistical collations of knowledge, but as contributing novel inputs into what might comprise knowledge, about how knowledge is constructed, and ultimately about what knowledge might do or be.

Example 4: 'Guide to Creative Mapping with Communities'

The final example here is a project undertaken in Penrith City, involving local community groups in creative mapping activities about their local parks. Selected ethnic groups, children, the elderly, and youth were involved in building personal maps based on their own experiences of local places in their neighbourhoods. These experiential maps reveal a variety of findings about how individuals and groups interact with open spaces and how much of their experience is culturally grounded. The findings of this project question public planning procedures and designs that create parks as vast open spaces with designated playground equipment. What researchers offer is a new reading about what parks might offer the local community as places for social network building and engagement with natural environments. What is interesting in this project is how mapping as research through the lens of personal and local experiences offers a way to differentiate the local 'community' as a variety of interest groups whose experiences shape a range of expectations and interests in the very idea of what 'park' has to offer. This project is located across the lower domains of our model, bridging personal concrete experience and local, shared distributed knowledge as shown in Figure 2D. These findings unpack the concept of 'park' and recast understandings about outdoor social activities that could alter how public authorities conceptualise public spaces.

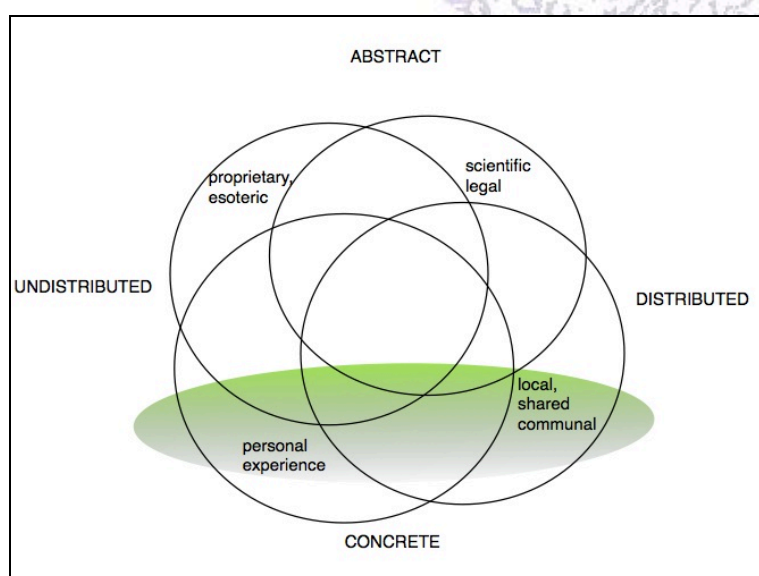


Figure 2D: 'Guide to Creative mapping with Communities' as data assemblage

Conclusion

The framework suggested in Figure 2 provides a starting point to critically examine key mapping processes – to examine examples of mapping and to ask what is mapped, and what is re-territorialised as a result? What can be learnt from interrogating a range of project examples using the modes suggested in our model? By introducing such a model, can we then posit findings and begin to build a richer theoretical argument around the key processes of mapping work, by naming place, time, and activity as starting points, constraints and objectives for what is to be mapped and revealed. How can terms like ‘culture’ and ‘nature’ be defined or re-presented through the data assemblages that emerge from this methodology? Dodge, Perkins and Kitchin emphasise the need to focus on critiques of key mapping processes and further, they suggest a list of ‘moments’ that they consider worthy of mapping projects:

We argue that a focus on key processes is more likely to reveal critical aspects of mapping. As such, we offer a tentative list of mapping moments that we think are significant and worthy of study: (i) places and times of failures, (ii) points of change, (iii) time-space rhythms of map performance, (iv) the memories of mapping, (v) academic praxis and (vi) newly creative engagement with mapping practice (Dodge, Perkins and Kitchin, 2009:17).

Dodge, Perkins and Kitchin’s emphasis on identifying what they term ‘mapping moments’ suggests the need for a return to the research field, drawing explicit attention to the way that various agents function within the data field to influence the movements of patterns and flows between and within networks. We have attempted to establish a case that the interrogation of these agents and modes of agency are critical if the potential for mapping methodologies as a mode of cultural research are to be fully realised. This attention to agency is as complex as the data networks which the mapping methodology concerns: it relates equally to the ‘subject’/‘objects’ which cultural research seeks to interrogate, as well as the position of the researcher him/herself as well as the agencies which animate the research methodology and its disciplinary co-ordinates.

As described above, most of the theoretical literature on mapping either overtly or implicitly acknowledges the more-or-less radical implications which emergent mapping methodologies present. This regards the configuration of knowledge itself: what it is possible to know, how do we go about knowing things? As such, participation in mapping methodologies may imply, by necessity, the re-description of structural and conceptual principles, which may be thought axiomatic, inherent and/or definitive. The model we present and describe in this paper seeks to explore and contribute to debates about how mapping can be used as a productive research methodology for cultural research.

References

- Abrams, J. and Hall, P. (2006) *Else/Where: Mapping New Cartographies of Networks and Territories*, Minneapolis, MN.: University of Minnesota Design Institute.
- Anderson, K. and Braun, B. (eds) (2008) *Environment: Critical Essays in Human Geography*, Aldershot: Ashgate.
- Bennett, J. (2004) 'The 'Force' of Things: Steps Towards an Ecology of Matter', *Political Theory*, 32(3): 347-372.
- Chester, G. (2007) 'Complex and Minor: Deleuze and the Alterglobalization Movement(s)', in, Hickey-Moody, A. and Malins, P. (eds), *Deleuzian Encounters: Studies in Contemporary Social Issues*, New York: Palgrave Macmillan.
- Corner, J. (1999) 'The Agency of Mapping: Speculation, Critique and Invention', in, Cosgrove, D. (ed.), *Mappings*, London: Reaktion Books, pp 213-252.
- Deleuze, G. and Guattari, F. (1987) *A Thousand Plateaus: Capitalism and Schizophrenia* [trans. Brian Massumi], Minneapolis, MN.: University of Minnesota Press.
- Dodge, M., Perkins, C. and Kitchin, R. (2009) *Mapping Modes, Methods and Moments: A Manifesto for Map Studies*, Accessed on 2 November 2010 from: http://personalpages.manchester.ac.uk/staff/m.dodge/manifesto_for_map_studies.pdf
- 'Fix My Street' Website (n.d.) <http://www.fixmystreet.com/?pc=2040>
- Harrington, S. and Stevenson, J. (2005) *Islands in the Salish Sea: A Community Atlas*, Surrey, BC: TouchWood Editions. In: Lewis, H. (2009) *Community Mapping Zine*, Accessed on 2 November 2010 from: <http://communitymap.blogspot.com/2009/05/welcome-to-space-for-discussion-about.html>
- 'It's Buggered, Mate' Website (n.d.) <http://its-buggered-mate.apps.lpmmodules.com/>
- Leafgren, S. L. (2009) *Reuben's Fall: A Rhizomatic Analysis of Disobedience in Kindergarten*, Walnut Creek, CA.: Left Coast Press.
- Nold, C. (2010) *Bijlmer Euro Mapping Project*, Accessed from: <http://www.bijlmereuro.net/?lang=en>
- Penrith City Council and CCR, University of Western Sydney (n.d.) *Guide to Creative Mapping with Communities: Out & About in Penrith. A guide for community creative mapping, prepared for Universal Design & Cultural Context; Accessibility, Diversity & Recreation*. Sydney: Penrith City Council and CCR, University of Western Sydney. Accessible on: http://www.penrithcity.nsw.gov.au/uploadedFiles/Website/Your_City/Maps/Creative_Mapping.pdf

Perkins, C. (2007) 'Community Mapping', *The Cartographic Journal*, 44(2): 127-137.

Shepard, M. (2009) 'Curatorial Statement', *Towards the Sentient City Exhibition*, New York: The Architectural League of New York, Accessed from: <http://www.sentientcity.net/exhibit/?cat=3>

Ulmer, G. (1988) 'Handbook for a Theory Hobby', *Visible Language*, 22: 399-422.

Wessner, G. (2009) 'Introduction', *Towards the Sentient City Exhibition*, New York: The Architectural League of New York, Accessed from: <http://www.sentientcity.net/exhibit/?p=119>

Yates, J. (2010) 'It's (For) You; Or, The Tele-t/r/opical Post-Human', *Postmedieval: A Journal of Medieval Cultural Studies*, 1(1-2): 223-234.

