



Methods for Change

Multi-method Mapping

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Multi-method Mapping

Maps link people's experiences, or environmental and social processes, to place and space. Multi-method Mapping reflects common research methods but adapts them so that they are especially suited to research on place and space.

The approach can be used by researchers, practitioners and community members from any background, whether they prefer quantitative, qualitative or arts-based methods, for example. Multi-method Mapping is a methodology with a wide-ranging, flexible understanding of mapping. There are many different ways that people either create maps or use maps, in addition to the plotting of points and lines, or geospatial analysis. The maps that are created or used can show any features, data or experience, and take any format, for example from digital maps in GIS to art installations that question cartographic processes. Importantly, mapping activities do not need to result in a map! Mapping here might, for instance, entail the use of existing maps as a prompt for discussion or storytelling. When using qualitative methods in Multi-method Mapping, the aim might not necessarily be to present qualitative data in maps but to generate data in the form of recorded narrative during map-making or use.

In this method, mapping is conceptualised in terms of five broad practices, and within and across these a multitude of mapping activities are possible, depending on the skills, interests and resources of project members. These five mapping practices are georeferenced, words-focused, creative, sensory and visceral. Mapping activities can be used individually to facilitate place-based or spatial research, or they may be used in mixed methods, interdisciplinary or transdisciplinary research in which different types of researchers and knowledge-holders are collaborating. In mixed methods and inter- and transdisciplinary research, mapping activities are likely to need to reflect mapping from more than one of the five practices.



Multi-method Mapping

How does Multi-method Mapping create or contribute to change?

Multi-method Mapping can be most transformative when it is used as an approach to transdisciplinary working. In the context of Multi-method Mapping, transdisciplinary research is understood as seeking more holistic research findings than disciplinary or interdisciplinary research, and often involves knowledge holders outside academia. The terms transdisciplinary and interdisciplinary are however inconsistently defined and are frequently used interchangeably. Transdisciplinarity requires researchers and/or those working with or part of local communities to learn about the aims of each other's methods, but it can be challenging for collaborators to know where to begin such conversations when their approaches are very different. The primary purpose of Multi-method Mapping here is to provide a dedicated activity for a transdisciplinary team to begin conversations on (sub-) disciplinary difference. In other words, here Multi-method Mapping first and foremost gets collaborators involved in each other's methods, rather than seeking data per se.

Multi-method Mapping encourages inclusiveness within a transdisciplinary approach. Multi-method Mapping activities are designed to be reciprocal and give equal attention to all knowledge types within a project, so that collaborators from all backgrounds, using any research method, have an equal voice. For instance, qualitative and arts-based research methods are often not well represented or understood within transdisciplinary projects and so space to explore them needs to be explicitly created.

Shared exploration and knowledge exchange will not only be of benefit during the lifecycle of a single project but will also have a cumulative long-term effect. Ideally, collaborators will take their increased understanding of other's research methods into subsequent transdisciplinary projects.



Multi-method Mapping

What ideas or concepts influence this approach?

Critical cartographers have in the last twenty years or so conceptualised mapping as a process. Whilst cartographic theory focuses on how cartographers should represent phenomena in a 'final map', critical cartographers are interested in the context in which maps are created and used. These critical cartographers firstly began to analyse maps in order to explore the overarching social context in which they are created. In more recent years, their attention has turned to the ongoing interactions between maps and people of all kinds. They are interested in more everyday interactions with maps, as against the professional techniques of cartographers or GIScientists; how diverse people touch, change or make maps, how they talk about them and how they link them to what they are doing, seeing, and feeling in a place or space. Understood in this way, mapping can therefore generate data and knowledge relevant to a range of research methods as illustrated in the table below.

Meanwhile, in transdisciplinarity studies, authors have emphasised the importance of project collaborators getting to know each other's contrasting approaches. Because mapping can reflect many different methods, it can therefore provide a shared activity within which collaborators who use different approaches can take part together. In transdisciplinarity studies, it is proposed that when different methods, data and (sub-) disciplinary aims are critically considered alongside one another, collaborators may be able to reframe research questions in ways that are meaningful across (sub-) disciplinary boundaries.

The critical engagement with disciplinary difference is a central theme of the philosopher Gilles Deleuze. For Deleuze, encounters between different disciplines are essential for deepening our understanding of any problem. Following Deleuze, Multi-method Mapping is intended to create these encounters, and to compare how a research problem is considered by different epistemologies (ways of knowing).



Multi-method Mapping

Why might I want to use Multi-method Mapping?

- As with other elicitation devices, a map or a mapping activity can help all project members feel more comfortable and more empowered. Such devices direct attention away from individuals and onto the device. Furthermore, project members can direct conversation, or offer their own stories or experiences in a flexible way with the map as an open prompt.
- The use of an elicitation device such as maps or mapping activities also helps to reveal tacit knowledge. Researchers, practitioners and community members often do not think to explain aspects of methodological processes or 'how they know' that are second nature to them. Elicitation devices prompt people to think about their practices in new ways.
- Maps provide a very particular type of shared elicitation device relating to places, whether they are being used as a prompt for discussion; a tool for evoking sensory or visceral experience; or in a group creative mapping activity. They provide a shared focus with which collaborators will share at least some familiarity: i.e., project members from different backgrounds will likely recognise at least some of the features and locations in a map of a shared field site.
- Mapping activities can reflect multiple types of knowledge. For example, activities can involve both georeferenced quantitative data (that is, quantitative data with location coordinates) and an attention to the visceral (interpretation of place that is felt, such as feelings of comfort). Therefore, contrasting collaborators can share in the same activity without the need to translate or 'water down' their differing forms of knowledge.
- Multi-method Mapping activities help facilitate the active involvement of all project members by generating more interactive conversations, as against the rehearsed explanations that may be given in purely 'show and tell' type encounters. Maps often inherently prompt discussion of contrasting knowledge because they always simplify the world (since they cannot show everything).

Multi-method Mapping



Step by step guide to using Multi-method Mapping:

Multi-method Mapping assumes that you already have an idea of the research methods, type of data and analysis required. Maps and mapping are used here as an elicitation device or creative aid that evokes a space or place: i.e. mapping is the activity within which the research method is conducted. The table shows which practices of mapping are suitable for different research methods. Whilst GIS and remote sensing, and geospatial quantitative or statistical methods, for instance, are frequently associated with mapping, qualitative and arts-based methods can also be carried out using maps and mapping as shown in the table.

Research method	Mapping practice
<ul style="list-style-type: none"> • GIS, geovisualisation, AR/VR • Remote sensing • (Public) Participatory GIS • Volunteered Geographic Information (VGI) • Quantitative/statistical analysis and modelling 	<p>Georeferenced mapping</p> <p>This includes any mapping in which data are located in a coordinate system. Such mapping can also include mapping using (free) smartphone mapping apps, or even using existing paper maps/satellite images for edits and additions. Depending on accuracy requirements, you can use smartphones to capture GPS coordinates, or use basic ground measurement techniques such as tape measuring or multiplying paces by estimated stride length.</p> 
<ul style="list-style-type: none"> • Interviews (semi/unstructured) • Ethnographic (participant) observation • Focus groups • Life history 	<p>Words-focused mapping</p> <p>Here, map-making, or exploration of existing maps, is used to spark story-telling and discussion about places, which is noted, or recorded and transcribed, to generate text-based data. Where existing maps are deployed, specific maps may be chosen according to the features they show; or the time they relate to e.g. historical maps or future plans may be useful aids for elicitation in a walk-along interview. Furthermore, decisions about map-making processes, such as the way in which project members select, classify, combine, simplify, mark or relate features, provide valuable insights into how people think about space and particular places.</p> 
<ul style="list-style-type: none"> • Arts-based methods • Ethnographic (participant) observation • Visual ethnographic methods • Observational sketching • Creative interviews 	<p>Creative mapping</p> <p>This mapping practice can make use of any arts-based methods; for example, free-hand drawn maps, as well as mapping with craft/modelling materials, textiles and photography. This type of practice enables project members to freely think about what features, marks, or shapes reflect their experience of place, as an alternative to words or numbers.</p> 
<ul style="list-style-type: none"> • Ethnographic participant observation • Feminist methods • Embodied methods • Walk-alongs/walking methods • Mobile methods 	<p>Sensory mapping</p> <p>This practice of mapping applies to all maps, not just those that are explicitly designed to capture what is sensed. Sensory mapping relates to sensory experience both at the field site during in situ data collection/fieldwork, and/or around the map. Sensory experience is most likely what is felt, both in terms of the tactile and the kinaesthetic (movement), or what is heard or smelt, and potentially what is seen or tasted.</p> 
<ul style="list-style-type: none"> • Feminist methods • Embodied methods • Post-qualitative research • Minor theory 	<p>Visceral mapping</p> <p>Project members' visceral and emotional reactions during research are an important source of understanding of places. Here, the visceral and emotion relate to "gut feelings" and emotions such as worry, fear, (dis) comfort and embarrassment. Map-making and engagement with maps often evokes strong feelings about space and place, frequently involving identity and power relations. Such feelings can tell us about important issues, for example around socio-environmental tensions and injustice.</p> 

Multi-method Mapping



1. Use the first column in the table to identify which practice(s) of mapping is suitable for your research method(s).

For example, if you are using focus groups you can use this method within words-focused mapping. (The table could also be used in reverse by those with an interest in a particular type of mapping. In this case, you can start from the second column to identify associated research methods that can then be explored further in order to develop the mapping activity.)

2. Design a mapping activity for the mapping practice that you have identified, using the descriptions in the second column.

Example activities can be found in the next section Example of Multi-method Mapping in transdisciplinary research and further example activities within each practice can be found in the “Mapping information cards” listed in Further reading below. Activities should be designed according to the skills, interests and resources (and imagination!) of project members.

3. If you are using Multi-method Mapping as an approach to transdisciplinary research, your activities will need to reflect different practices of mapping.

In transdisciplinary research, Multi-method Mapping can be valuably employed as an exploratory activity at the start of a project, separate to the main data collection phase, so that collaborators can get to know each other and the differences in their methods. Alternatively, Multi-method Mapping could be deployed to generate data during the data collection phase, thus providing an ongoing space for diverse collaborators to come together.

It is suggested that activities are designed to reflect two different practices i.e., two of the research methods being used, because it will be challenging for researchers to learn about more than one other research method at a time. For example, a researcher who is using qualitative interviewing and their GIScientist colleague who is conducting spatial analysis of data, might co-facilitate and co-analyse walk-along interviews using GIS-produced maps. Reciprocally, these researchers might then co-create a GIS map of located (georeferenced) words from the walk-along interviews. The contrasting mapping activities highlight what is included and what is omitted in different research approaches as a result of their different foci, for example, individuals' experience versus generalised measures; different spatial or temporal scales of study; or different categories or continua that phenomena are understood by.

For activities that use more than one type of mapping practice it will be helpful to use a facilitator.



Example of Multi-method Mapping in transdisciplinary research

Nature recovery

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The aim of this project was to identify the barriers and opportunities to nature recovery in a UK-based field site. Since ecological, cultural and economic processes are interrelated, the project aimed to be transdisciplinary. The project involved several disciplines and sub-disciplines across social science, the humanities and natural science: human and physical geography, literature, art, ecology, paleoecology and geomorphology. The researchers agreed from the outset that they should each understand what the different parts of the project were doing and avoid 'working in silos'.

Whilst some of the researchers had experience of the methods others were using, not all did.

In this project a Multi-method Mapping approach was deployed alongside the research methods of qualitative interviewing, geospatial modelling and ethnographic arts-based research, as a way to help the different researchers get to know each other's approaches. I acted as a facilitator, introducing the five mapping types and their links to different types of research methods and data.

We chose two mapping activities. The first activity aimed to consider the geospatial modelling of the physical geographer alongside the qualitative interviewing of the human geographer: this mapping activity reflected georeferenced and words-focused mapping. The second activity aimed to consider the geospatial modelling alongside the ethnographic aspect of the

arts-based approach: this was based on georeferenced and sensory mapping. For the first activity, over three sessions of an hour and a half each, we decided to use two maps as a visual prompt for discussion of the methods used and data generated by each researcher. We discussed how we might go about making a map of the qualitative data, given that valuable understanding can be lost when qualitative data is mapped. In keeping with a flexible view of maps, a map was created to demonstrate the analytical method that the qualitative researcher was employing ([inductive thematic analysis](#)) using the shape of the study area. Another map was produced in GIS by the physical geographer and showed ecological data derived from remote sensing. We juxtaposed and discussed these two maps together. The activity helped the two sets of researchers to learn more about each other's contrasting methods. Our conversation brought to the fore how qualitative data can help us understand the way in which people construct their values on the one hand, and on the other, the assumptions that quantitative modelling techniques need to make, along with their selection of source data.

For the second activity, we visited the field site in order to make ethnographic sketchmaps, as well as to explore the landcover of the site using the remote sensing data illustrated in maps produced by the geospatial modeller. The activity enabled us to consider different modes of sensing an environment. The geospatial modelling utilised remote sensing from an airborne scanner which collects the position information of millions of surface points. Meanwhile, a human sensor in the form of an ethnographer sketcher, attends to the sights and sounds of a site, as well as the movement of their hand and pencil across paper as a way of leading their observation of the site.



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Where else could Multi-method Mapping be used?

Mapping activities are frequently undertaken by local communities and by partnerships between local residents and charities. Such mapping activities are not only relevant for data generation or transdisciplinary thinking in academic research projects, but might also be used by a range of different actors connected by the same place and issue, to share views, generate data or to get to know each other as part of a scoping activity. Whether the topic is infrastructure, housing, public services or environmental concerns, people tend to gather around maps, especially large hard-copy versions.

Mapping activities that involve local people [adding to an existing map or creating a new one](#), are valued by local residents as an opportunity to “put themselves” or what is important to them “on the map”. Furthermore, when participants are given a choice about how they can take part in projects, such as with the many possibilities afforded by a multi-method orientation to mapping, they may feel more comfortable and empowered. [Story-telling and discussion](#) around existing maps may be just as valuable as the location of features on a map. Such exercises make visible what was previously invisible, especially relevant for [marginalised groups, highlighting resources \(or lack of them\)](#) that were previously not recognised, or alternatively aspects and experiences of place that are [ephemeral or intangible](#).

Top tips

- Multi-method Mapping should be thought of as an orientation to mapping, rather than a specific set of methods.
- To get the most from Multi-method Mapping, try to put aside the idea of maps as data presentation devices. Remember, you may not be aiming to end up with a “finished” map – it may be that it is what happens in the process of creating or engaging with maps that is the focus of exploration or learning. This ‘what’ may relate to discussions, stories, sensory apprehension or visceral experience.
- Depending on your use of mapping activities, a facilitator may be important. For example, the use of a single mapping activity may not require a facilitator, but if you are using Multi-method Mapping for inter- or transdisciplinary working a facilitator will be valuable.



Further reading

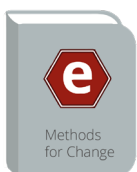
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To read about more exciting social science methods, the full range of Methods for Change 'how-to' guides can be found here.