



An Argument for Action Research-Inspired Participatory Mapping

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Abstract

After decades of both enthusiasm and criticism over participatory mapping in planning, some scholars are accusing it of being an empty ritual, unable to deal with substantial issues or being servile in the face of power. This article presents a participatory mapping and planning experience carried out by an action-research partnership in the Simeto valley (Italy). It claims that reframing participatory mapping through action research means both dealing directly with power and addressing substantial issues. Action research-based mapping's effectiveness is related less to mappers' ability to map spatial changes and more to the impact that mapping has on the mappers themselves.

Keywords

Citizen participation, community development, participatory mapping, action research

Introduction

Participatory or community-based mapping rests on the assumption that not only experts but also residents of a neighborhood, a city or a region could be involved in the act of its geographic representation. In planning, participatory mapping has become a key strategy in at least two ways. Community-based groups, activists, grassroots and other types of nongovernmental organizations can use it to generate maps aimed at affecting power structures. Alternatively, official planning bodies can use it to combine lay and expert knowledge in an effort to make plans that take into more direct account people's values, perceptions and needs. After decades of scholarly enthusiasm in participatory and community-based planning and despite the increasing use of participatory mapping techniques in planning practice all over the world, planning scholars have more recently begun to underestimate or criticize participatory mapping. Some think it is an overexplored argument that does not need further research. Some others disagree with its ethical and epistemological premises, discharging it within broader critical accounts of participatory planning.

In this article, drawing on our own experience as action researchers in the Simeto valley (Sicily, Italy), we discuss participatory mapping's highly transformative potential for communities that undertake it. Compared to how either mobilized groups or institutions frame or use participatory mapping for planning purposes, there is a possibility for a change in perspective. Our own experience allows us to discuss the planning relevance and efficacy of participatory mapping when it is directly inspired by action research.

About Action Research and Some Methodological Clarifications

There is a long debate in planning research on the need to make planning scholarship more relevant for practice. Scholars usually pair the concept of relevance with their ability to deliver general or universal findings that planning practitioners can then directly apply in specific situations. Additionally, there is a growing scholarly interest in forms of research—called generically engaged, community based, participatory or action research—that implies the direct engagement of people in their authorship (Lake and Zitcer 2012). In these approaches, the implementation of research outcomes, the evaluation of their efficacy and the eventual reshaping of such outcomes based on the evaluation are an integral part of the research process. Within the 2012 JPER symposium dedicated to the engagement of planning research with practice, Campbell (2012) argued that planning research has increasingly abandoned any ambition to make the world a better place and made a plea for researchers to change direction towards a more engaged approach to scholarship. More recently, Du Toit, Boshoff and Mariette (2017) discussed the scarcity of academic publications coming out of action research, raising concerns regarding its real compatibility with academic publishing conventions. As

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already addressed elsewhere (Saija 2014b), this issue of compatibility comes from some of the epistemological differences between action research and traditional research, which lead to substantial dissimilarities in their written outcomes. Action-research publications differ from traditional ones because they do not aim at sharing generalized or universal knowledge but are rather narratives in which action researchers share lessons learned through their experiences. According to an established body of literature, such lessons can be useful to other scholars even without claiming a universal or general epistemological value.

According to Aristotle's *phronesis* and American pragmatism, knowledge is deeply linked to experience, especially if, like complexity theorists say, the very process of knowing has the power of affecting the object of inquiry. One can try to minimize such a power, pursuing scientific objectivity and neutrality, or can embrace it. Action research is based on the idea that researchers, especially in applied fields like planning—that is, the fields that are supposed to generate knowledge that should be applied to solve real problems—can embrace the transformative power of their research and accept the ethical challenges that come with it (see Coghlan and Brydon-Miller (2014) for a recent overview on action research). Their willingness to directly affect reality leads action researchers to share both research and action responsibilities with the very people who are going to be affected (Whyte 1991). It is this process of sharing, occurring in what scholars call long-term community–university partnerships (Reardon 2006), that allows the research process to prompt new and transformative relationships. Drawing from complexity theory literature and systemic thinking (Morin 1990), action-research scholars use the adjective “transformative,” indicating the ability of reciprocal interactions between researchers and non-researchers to not only *transform* both partners (mutual education), but also to *transform* reality.

With this article, we show some evidence of such transformative potential, sharing some of the lessons we, the authors, have learned on the importance of participatory mapping in planning through an action-research experience in partnership with community groups committed to the promotion of socially just and environmentally sustainable development in the Simeto valley. According to Greenwood and Levin (1998, 122), “conventional research publications can result from Action Research when the researcher learns something of relatively little interests to the local participants but that may address a major issue in the research literature.”

In our action-research experience and in partnership with our community partners, we identified some research questions that were suitable for investigation through participatory mapping and, from a planning perspective, ended up learning a great deal on the planning potential of such a method. We observed that the use of a conceptualization of participatory mapping drawn directly from the action-research paradigm helped conceive a technique

that, from a planning perspective, has been very effective: It has empowered the mappers while generating planning innovations in the local decision-making system. For this reason, we believe it is worth sharing with the broader planning scholarly and professional community both the conceptualization and the actual technical implementation of our participatory mapping strategy. We argue that our experience shows that traditional criticisms against participatory mapping do not apply to action research-inspired mapping, which is able to engage with substantial issues, including power.

Participatory Map-Making, Multiple Perspectives

Within the family of geographic maps, planning maps have the peculiarity of being explicitly meant to provide guidance to spatial action. Whether we are talking about a simple topographic map, a complex typological analysis or a zoning map, if it is part of a plan then it is there to justify or graphically represent some kind of planned change in the physical environment. Having said that, depending on which planning approach has inspired the plan itself, not all planning maps speak the same “language” nor are meant to influence reality in the same way.

Participatory Mapping in Planning

Drawing from geographer Goodchild, Mugerauer (2000) identifies two major paradigms in the history of map-making which can also apply to planning map-making. The first is the *Euclidean–Newtonian paradigm* (from the name of the Greek mathematician Euclid), which sees maps as an objective representation of space. In planning, Euclidian mapping has been the backbone of rational-comprehensive planning approaches, based on the idea that experts can use the objective knowledge embedded in maps to draw planning recommendations. This paradigm has evolved into the development of geographical information systems (GIS). Almost all mapping experts would agree with the fact that “the map is not the territory”; however, with this famous line, Alfred Korzybski (1931) warned that many do confuse representation with reality. GIS, with its ability to store and overlap a theoretically infinite amount of data, has, in many ways, reinforced the idea of the possibility of objective representation, feeding the hope that the map can be indefinitely enriched with data until it borders reality.

The second is the *phenomenological paradigm*, which sees maps as a subjective representation of “facts.” According to this paradigm, map-makers choose what to map and why, depending on their goals, value systems, cultural backgrounds, etc. This tradition has mostly developed outside scientific disciplines, with lay people acting as legitimate map-makers. However, starting with Lynch's (1960) pioneering work using mental maps to study people's

perceptions of places, also planners have acknowledged the possibilities of mapping “perceived differences” and planning for a plural city (see Appleyard 1976, among many others). Within this perspective, the concept of “place” has replaced the concept of “space” to indicate a geographic location that is characterized by a unique “soul,” a *genius-loci* (Norberg-Shulz 1980), challenging planners and urban designers to develop planning and design approaches able to acknowledge the interconnection between the physical and nonphysical (emotional, symbolic, cultural, etc.) dimensions of neighborhood, cities, regions, etc.

Participatory mapping has developed within the phenomenological tradition, in particular within planning approaches that are meant to challenge rational-comprehensive planning while taking into account the impossibility for expert knowledge alone to provide unique guidance for spatial action. Planners have initially used participatory mapping in the context of community-based planning practices meant to counteract official top-down plans, perceived to be harmful to powerless communities and advantageous for powerful interests. Advocacy planning (Davidoff 1965) and early definitions of participatory planning (Arnstein 1969) encouraged planners to work outside “city hall” with distressed communities and groups in order to generate maps to challenge power in some fashion, echoing what geographers call counter-mapping (Peluso 1995). Minorities and their advocacy planners have used participatory counter-maps, for instance, to locate and preserve natural resources against official plans aimed at environmental exploitation (Hodgson and Schroeder 2002; Segalo, Manoff and Fine 2015). Community organizers and neighborhood-based groups still use participatory community asset maps in the context of community development plans aimed at affecting official decision making and private investments (Padawangi et al. 2016; Reardon 2003; Reardon et al. 2009).

In the 1990s, scholars who contributed to the so-called communicative turn in planning (see Healey 1992, among many others) have embraced participatory mapping as the main strategy through which official plans can come out of a process of engaging a variety of actors in a meaningful collective dialogue aimed at identifying common interests and mutually advantageous action items. Some famous examples of institutional use of participatory maps are the parish maps used for planning urban neighborhoods in the UK (Crouch and Matless 1996; Stephenson 2010), ecomuseum maps used in Europe to plan for heritage preservation at the regional scale (Borrelli and Davis 2012; Santo et al. 2017), and, in the USA community maps developed within planning processes (Gordon, Schirra and Hollander 2017; Sanoff 2000) and charrettes (Lennertz and Lutzenhiser 2006), just to name a few.

Whether an outcome of social mobilization or a product of an official planning process, a participatory planning map does not claim to be an “objective representation of reality.” However, like every other planning map, it does

claim a legitimacy to guide spatial action. Such a legitimacy arises less from the intrinsic “quality” of the representation, that is, objectivity, accuracy, and so on (unlike Euclidean mapping, where such a quality was the main source of legitimacy) and more from the “quality” of the mapping process, that is inclusiveness, representativeness. Despite such a difference, both Euclidean and participatory maps can be considered the main link between planning knowledge and action. In other words, both in Euclidean mapping as well as in counter-planning and participatory planning mapping, maps are the goal since they are intended to embed information that *then* affect reality.

Despite the fact that participatory mapping is considered an established tool in the planning toolbox, used in almost all the planning processes that claim some form of stakeholders’ engagement, scholars have started to challenge both its theoretical legitimacy and its empirical efficacy. Most of the critiques come from broader critical accounts of participatory planning. Some blame it for causing a shift from content-based to process-based technical knowledge, ultimately leading to planners’ disengagement from substantial issues like spatial justice (Fainstain 2011) and power (Huxley and Yftachel 2000). More recently, postpolitical scholars have accused participatory procedures of being empty rituals through which broad political issues are reduced to limited policy problems and whose scope of possible outcomes is narrowly defined in advance (Swyngedouw 2009).

In this article, we argue that participatory mapping could be theoretically and practically reframed drawing from action research, in order to overcome these critical accounts.

Participatory Mapping from an Action-Research Perspective

In action research, participatory mapping is frequently used as a method, but in a fundamentally different way than in traditional participatory planning processes. First of all, since in action research all partners share all responsibilities, participatory mapping cannot follow a standard protocol but needs to be chosen (why the mapping is done), technically defined (how the mapping is done), implemented and evaluated in the context and by all the people involved. Second of all, unlike most participatory planning processes, action research-based participatory mapping is not aimed at generating maps that are meant to be the main link between knowledge and action. It is a process through which change is generated *while* mapping.

The reasons why participatory mapping is a very effective action-research method is explained by Bateson’s (1970) memorial lecture on Korzybski addressing the question: *What is it in the territory that gets onto the map?* According to Bateson, no matter how objective one tries to be, what gets onto the map are not “objects” but “differences between objects.” Those differences have the capacity of connecting the map-maker’s mind (including the collective “mind” of a

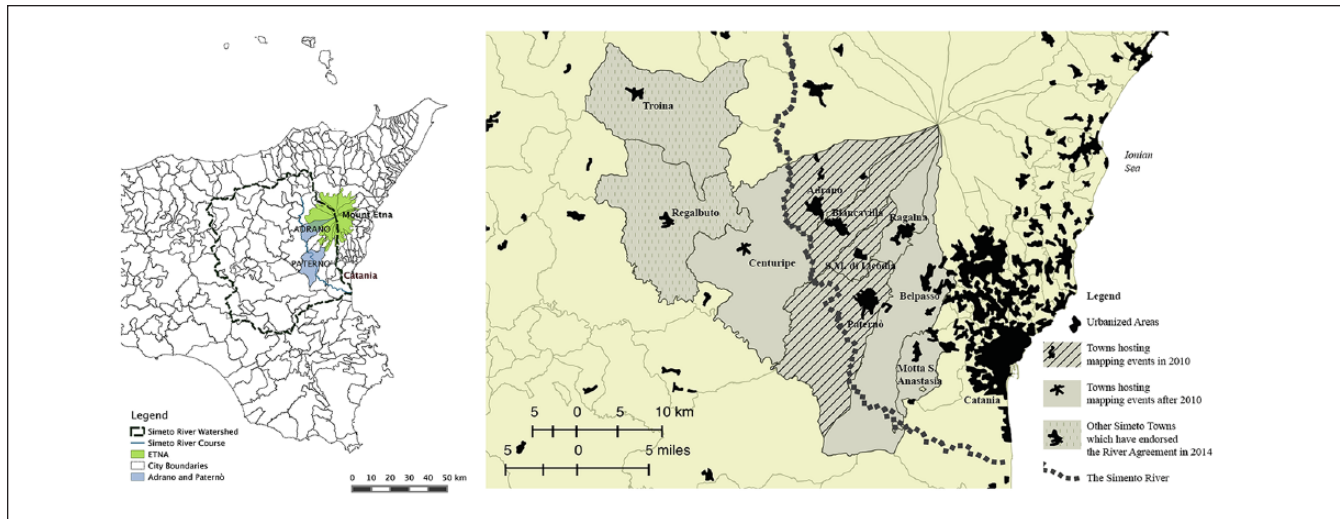


Figure 1. Vicinity map: Detailed map of the landscape of the Simeto valley.

social “system”) with the mapped reality. The information, going back and forth, modifies both the map-maker and the surrounding environment. In other words, map-making can affect both the mapping subject and the mapped space. For these reasons, action researchers, whose goal is to use collective knowing processes as an occasion for change, use participatory mapping for its transformative effect on mappers. While mapping, mappers can learn to see things in a different way, and feel empowered to act in order to change them (as confirmed by the fact that psychologists frequently use map-making for therapeutic purposes). When map-making is carried out as a collaborative endeavour, the act of locating and sizing values, issues and hopes on a map implies a process of value-sharing among individuals that then can strengthen their sense of community. This is the case, for instance, of applied anthropologists using participatory mapping in support of groups and communities whose identities are somehow threatened (see Graham 2014, among many others) or geographers using it to increase people’s awareness of the interdependence between humans, other living species and natural resources (Aberley 1993; Parker 2006; Parsons 1985). In the community development field, through collaborative map-making, individuals become (or strengthen their being part of) a “political collective subject”—various individuals that act as a system in the light of common values and goals—and are more likely to rise and stand behind political instances and processes of social change while acquiring the critical and technical knowledge to self-manage change.

In all these cases, like in traditional participatory planning processes, the quality of maps depends on the quality of the process. However, unlike traditional participatory planning maps, action-research maps are not to be considered the main link between knowledge and action. They are only the formalized output of a “transformative” map-making process,

meaning action occurs *while* maps are being made. Maps are not merely the goal, but rather devices engaging people in a process of learning that implies change for their environment.

With this article we share our experience as action researchers using participatory map-making as a tool for change, with the aim of showing the planning potential of such a tool when it is framed within the action-research paradigm. With our experience we would like to point out some significant differences between participatory maps used as goals and the same maps used as learning devices so that other nonmapping goals are *simultaneously* pursued. The ultimate aim is to contribute to the diffusion of an approach to participatory mapping in planning able to overcome scholars’ major critiques while providing communities with a powerful strategy for change.

Background and Context

The Simeto River valley (Figure 1) is located a dozen kilometres from the eastern coast of Sicily, in southern Italy. The Simeto River marks the encounter between two unique geomorphological and ecological systems, a volcanic system to the north-east and the clay hills to the south-west, giving birth to significant natural and historic richness. The fertility of the river’s soil and the abundance of natural water springs have encouraged humans to settle here since the beginning of human history, producing a significant variety of urban and rural artefacts that today compose a very rich historic heritage. But the centuries-long interaction between humans and nature has been environmentally and socially declining under modern blows.

As action researchers we have had the opportunity to establish a working relationship with Simeto community activists, beginning in 2006, when we were asked to provide

scientific evidence against a planned waste-to-energy facility that was to be built in a highly ecologically sensitive area of the valley—a project that the local community was also protesting because of the infiltration by mafia interests. Our (very limited) involvement in the anti-incinerator campaign was the occasion to develop a genuine action-research partnership (Reardon 2006) in which both we, the researchers, and a dozen community activists agreed on the need to share full responsibilities over a process of research and action.

Following what are very common phases in action research, our first steps aimed at identifying shared research questions and expected action outcomes.

The community interest in being part of an action research partnership derived from the fact that the Simeto activist coalition, which started with the anti-incinerator campaign (eventually successful), had immediately embraced broader development goals (transitioning from “protesting against” to “mobilizing for”), similarly to what Sze (2007) has documented in the case of New York environmental activists. For local leaders, the incinerator was the umpteenth manifestation of the renowned Sicilian economy’s permeability to criminal interests, that is neither the first nor the last of the projects representing a model of development based on the systematic exploitation of nature and people. In this perspective, the coalition had planned to build upon the base developed through the anti-incinerator campaign to develop a more ambitious action strategy: Stopping the incinerator had to be the first step in a process of deeper cultural and political change, preventive of more future incinerator-like projects. What this deeper cultural change looked like, in the face of a highly corrupted decision-making system, and how to get there were still unanswered but significant research questions.

On the other side, we, the researchers, were highly interested in working with activists who were asking important questions on planning and development, and were willing to learn from research.

Between June and December 2009, we met twice a week with a number (3–10) of environmental, political and historic preservation activists, as well as community leaders, with the purpose of narrowing down our still very general research questions. As is often done in action research, we conducted what can be called a “participatory literature review” for the shared exploration of scholarly sources—theories, guidelines, established practices, etc.—that are relevant to the questions at stake.

Initially, we scanned what other communities had done in similar situations, looking specifically at virtuous environmental planning experiences, able to go beyond damage reduction to pursue deep cultural, social and economic changes. We learned about new forms of partnerships and/or collaboration between citizens and the institutions traditionally responsible for environmental planning and management. Ecomuseums (Borrelli and Davis 2012), landscape

agreements (Pizziolo and Micarelli 2004) and place-based charters (Magnaghi 2005) were all Italian examples of the kind of innovation described by Ostrom in her famous *Governing the Commons* (1990). We were disappointed, though, in observing that these successful cases were all associated with strong institutional leadership, which we lacked. For this purpose, we focused on a second round of case-study research, looking specifically at grassroots groups in opposition to local institutions that were able, over time, to positively impact decision making. A comparison between the Sicilian experience of community mobilization in the Belice Valley in the 1950s and 1960s (Barbera 1980; Dolci 1974) and US experiences combining community organizing and participatory planning (Reardon 2003; Reardon et al. 2009) made us think: The Belice Valley is the “here but back then,” The US experiences are the “now but far away.” We could be the “here and now.”

Despite the geographical differences and the great variety of goals, techniques and accomplishments, all these cases had one thing in common: The idea that spatial representation and interpretation had to break the experts’ monopoly and had to involve a broader range of people, allowing a better understanding of a variety of spatial perceptions and interactions. This basic observation spurred a conversation on the possibility to promote, as a first experimental step, a participatory mapping initiative. To figure out how to structure it, we looked at examples of participatory mapping experiences, noticing the variety of languages that could be used (Euclidean vs phenomenological languages) as well as the different roles maps can have in the face of power (counter-mapping vs institutional participatory mapping). In our work, it was clear that the Simeto community was interested in a participatory mapping technique able to speak different mapping languages at the same time: It had to speak the Euclidean language to power, in order to affect decision-making, but also “the language of the heart” to as many people as possible. Additionally, it should have started as counter-mapping but with the purpose of making its way into institutional map-making. Map-making was seen as the process of value-sharing among individuals that would have allowed them to become a “collective political actor,” that is a group raising and standing behind ambitious political instances for social change.

The Simeto Community Mapping Initiative

In November 2009, a small group took the responsibility of defining how to carry out the mapping initiative, adapting existing protocols to our specific goals.

First, we decided to organize a “try-out” aimed at testing “participatory mapping” in practice before committing to a long-term initiative (Figure 2). A longer commitment needed a general agreement on the very nature of a method that very few locals had experienced before.



Figure 2. Participants working on the large wall-map during the try-out; details of colored and numbered stubs and of the section called “legend.”

Furthermore, starting from the critical observation that many people do not have map-making and/or map-reading skills, the initiative was conceived not as just one activity, but a sequence of different activities, engaging participants in an incremental fashion while gradually reducing the need for staff support.

Many of the studied techniques consisted of breaking down a large group into small groups and having each group carry out similar activities. We thought this method was likely to make people nervous. Often, each participant tries to locate and join “the most important table” in the room, the one where the “real talk” is done. This technique works only if the different tables differ clearly in focus and purpose. To avoid this, we imagined having a one-day-long “open house,” with people coming and going at their convenience, with a physical arrangement conceived to let people experience the space with freedom, going through the following activities.

1. *The Map of Mappers*, replacing what in participatory jargon is usually called registration (participants signing in to share their contact information and authorize data collection). We did use a traditional sign-in sheet to assign each participant an ID number. We then asked participants to write their ID on a sticking dot to be located on a 1:25,000 map of the valley, in correspondence to their place of residence and/or work. The purpose was to immediately visualize underrepresented geographic areas, without

waiting for an ex post analysis. It was crucial to make this immediately visible for everybody, since the goal was to carry out activities that could have been immediately “analysed” and taken over by others.

2. *Mental Mapping*, inspired by Lynch’s work. Participants were asked to draw on a piece of paper key places of their daily life and ones with special meanings. Unlike most mental mapping exercises, in which mappers use blank pages, our sheets contained a brush stroke representing the Simeto River. Like Lynch, we were interested in understanding people’s perceptions of their landscape. However, we were already aware that many locals had lost connections to the Simeto landscape. Our activity was therefore conceived not only as a neutral way to study mappers’ mental images, but also as a way to force them to reflect on their relationship with the river ecosystem. After completing mental mapping, each participant had the option to sit down with staff and share additional comments and stories about the valley. We did not want to lose the details of individual perspectives and wanted to be inclusive of people who did not want to draw.
3. *The Wall-Map*, in which each participant was asked to join others in working on a 10-metre-wide and 3-metre-high wall-map (32' × 10') representing the valley at a scale of 1:10,000 (the scale was such that each participant was still able to locate places but the map was large enough to include the central

stretch of the river, the towns and the south-western slope of the volcano). After all, the purpose was to let people “see” the relationship between their familiar places and the whole valley. The only elements that were already underlined on the big map were the Simeto River and its tributaries, administrative boundaries between cities and areas under special environmental protection for their ecological value. We wanted to show how much land was still legally unprotected but also how many “damaging” actions were occurring within legally protected areas.

On the large map, people were asked to stick four types of colored and numbered stubs, each corresponding to a simple question:

- Red = “What do you like?” (perception of values and assets).
- Orange = “What do you dislike?” (perception of decay and problems).
- Yellow = “What did you used to like but is not there anymore?” (past memories and history).
- Green = “What would you like to happen in the future?” (ideas and desires for the future).

Each dot was meant to mark:

- a precise location on the map (a building, a cross-road, a landmark, etc.);
- a linear element, such as a road or a water stream. In this case the mapper was expected to use a matching colored marker to draw such an element;
- an area (a neighborhood a district, etc.). In this case the mapper was expected to mark the area with a matching colored marker.

For each stub located on the big map, each mapper was asked to grab a matching colored sticky note, write down the number of the stub and a comment, and then stick the note to a big board called “Legend,” divided into four sections (one for each question).

If a mapper wanted to map an element that was already marked, there were two alternatives: (1) If the mapper wanted to use a color that differed from the mapped one, then it was okay to mark the same element more than once and have the same number on different sticky notes located in different sections of the Legend; (2) If the mapper wanted to map an element with the same color that had already been used, the mapper had to write down the number already appearing on the wall-map on a new sticky note and stick it on the Legend board. This was a way to have each mapper:

- looking at what other mappers had done;
- reading and commenting on mapped items; and
- talking to other mappers, exchanging advice as well as mutual agreements and disagreements.

The goal was not just to collect individual perceptions (in this case the mental mapping exercise might have been enough) but, mostly, to transform individual “knowledge” into shared knowledge. For this reason, our map was conceived as a device able to let analogies and differences emerge and be visible to the mappers *while* mapping.

The whole process needed to be staffed by a dozen individuals with a full understanding of goals and rules, as well as the basic ability to read the maps and draw on them, in case mappers needed assistance. We expected to have about 50 participants but, to our surprise, twice as many came on Sunday, December 20, 2009, to a farm located in the countryside of Paternò (the most populated town of the valley). We had invited individuals that had been active in the anti-incinerator campaign, expecting them to already share our values. On the contrary, the high number of participants made the crowd much more diverse than we expected.

People arrived and left at various times during the day, but about 40 participants remained until the end, waiting to be part of a closing moment, articulated in two phases.

1. A quick overview of all the sticky notes, in order to identify major issues.
2. A collective evaluation of the event, focusing on the following questions: What did you think of the event? Did it reach the declared goals? What do you think of the techniques that we used? Is there anything you would improve or change?

The group agreed upon two minor adjustments (enlarging the scale of the map of mappers and allocating more time to the common review of the sticky notes) and a major one: adding as a fourth activity the elaboration of a thematic map, called the map of waters (which appeared to be a key topic).

At the end of the meeting there was a mutual agreement on launching for the public-at-large a *Simeto Community Mapping Initiative*, with open community mapping events in various towns, each one organized by the group of activists from each town. We had initially assumed that the wall-map could have been printed out in multiple copies to be used in different locations. To our surprise, each town requested the same printed materials to be used for each of the events, with the purpose to see and build on what other mappers had said in other locations. In six months, events held in four different towns engaged more than 500 individuals (including representatives of dozens of organizations) coming from 10 different Simeto towns (Figure 1). Dissemination was based on a snowball effect. The try-out had served as a training session for community members who then played the role of staffers in the following events.

Participatory Data Processing and Formalization

The qualitative and quantitative richness of our fast-growing data was a good thing, but posed several challenges in

terms of data processing and interpretation, including the fact that we did not want to proceed in a traditional expert-led fashion.

The closing event, conceptualized as a participatory workshop for data processing, was scheduled for May 22, 2010 and was meant to directly engage people in finalizing a *Simeto Community Mapping Report*. We (the authors) prepared a first draft document that was then reviewed by community representatives, containing a first synthesis but also all the raw data (for people that did not want to rely on our interpretation). We structured the first section, inspired by the Euclidean paradigm of map-making, very much like a strategic plan, with a shared vision for the future and six main areas of intervention: water as a common good; environmental heritage; ethical tourism; energy and waste; responsible farming; and bioarchitecture. For each area we summarized emerging values and planning ideas. We structured the second section, inspired by the phenomenological paradigm, focusing on data's immaterial meanings (feelings, perceptions, identity and culture), and included a commentary on mental maps and a collection of stories and legends.

A digital version was circulated via email before the final workshop, together with the invitation to participate. Paper copies were distributed during the workshop, which was a day-long event divided into three phases:

1. An early morning plenary session aimed at introducing the community mapping initiative and summarizing its outcomes; new participants (and there were many of them) had the opportunity to become familiar with previous steps, allowing them to fully participate in the following ones.
2. Six parallel thematic workshops, which lasted for the second half of the morning and the first half of the afternoon. Each workshop carefully examined and prioritized the ideas of action that emerged in the previous months, with the help of two or three experts, including institutional staff (city engineers and planners), in order to guarantee technical and normative feasibility. The pool of experts had to include at least one "foreigner" to get an outsider's perspective. Researchers and community members served as facilitators and were responsible for the production of an instant report.
3. A final plenary session, held in the late afternoon, dedicated to the official delivering of the *2010 Community Mapping Initiative Report*—composed by the preliminary report plus the instant reports of the workshops—in the hands of city, province and regional decision makers.

The document contained a reference to a new model of governance involving public institutions and the active portion of the community, called the *Simeto River Agreement*, based on shared commitment to the values of inter- and

intraspecies solidarity, as well as mutual responsibilities over the identified strategies of action.

Impact and Evaluation

After May 22nd we (the researchers and a dozen of the most active community members) dedicated a couple of meetings to the evaluation of the initiative, identifying many possible small improvements and two major ones:

1. Looking at the list of participants, there was *a lot* to be done in terms of outreach and inclusiveness; clearly, from a traditional participatory planning perspective, our 500 mappers were not representative enough of the entire population of the valley (both in terms of number and social groups). Therefore, the community mapping outcomes would not have any legitimacy in affecting decision making from a traditional participatory mapping perspective.
2. An official "map," the cartographic representation of what people had actually marked, was still missing; our initial idea was to have two forms of cartographies of the wall-map: (a) a Euclidian representation of the raw data into an open-source web-based GIS map, available for further online mapping; and (b) an artistic geographic representation of the valley's soul, with the involvement of local artists. Both of these were missing due to a lack of resources (they were eventually produced much later).

Despite these pitfalls, the initiative had produced what the community wanted:

- The enhancement of the shared rational and emotional knowledge of the Simeto River valley (seen not only as a geographical entity but also as a cultural identity, that is a bioregion; Aberley 1993) among the mappers; this means that people that had just shared a protesting experience were evolving into a collective subject.
- The growth of the social consensus for such a subject.
- The production of a political document containing clear indications on priority courses of action that this subject could use to impact decision making, becoming a political actor.

The day of May 22nd was not the moment when everything changed. The new model of governance, the *Simeto River Agreement*, was formally endorsed after five years, on May 18, 2015, by 10 municipalities, the University of [OMISSIS], and a new community organization called the "Participatory Presidium of the Simeto River Agreement." The Presidium is today an umbrella organization including not only the initial groups of incinerator activists but also many other individuals and associations from all 10

municipalities of the valley. During all these years, the partnership has kept working on a combination of initiatives, including small community-led projects (Raciti 2015) and many sociocultural events. Additional community mapping initiatives occurred between 2010 and 2015 in other Simeto towns under the leadership of local groups, who were entirely responsible for staffing the events, collecting and interpreting data, as well as producing a report. These partial documents, together with the original 2010 report and other materials produced over time, have converged into the official *River Agreement*.

The Agreement represents an imperfect but still major governance innovation for the local community and the regional context. It is the first example of shared governance inspired by a proactive approach to conservancy (Saija 2014a). We see this as a formal accomplishment of a broader set of nonformal physical, cultural and economic accomplishments, including: the birth of new organic farms and the growth of existing ones; the establishment of an organic and ethical food value-chain; the revitalization of small but significant elements of the valley's historic heritage; an increasing sense of belonging to a territorial entity called "Simeto valley"; and institutional as well as community-led actions against the ecological decline of the Simeto River. Old and new community leaders, public officials and media constantly refer to the *2010 Community Mapping Initiative* as the stepping stone of such a process. Most of the city officials and community representative who were appointed, later on, for the *Simeto River Agreement Assembly* and for leadership positions of the *Participatory Presidium* were not part of the core organizing committee of the *Initiative*, but simple mappers. Today, they all acknowledge the fact that the *Initiative* was what got them involved in what they consider a deep process of political change. Additionally, thanks to the establishment of the *Simeto River Agreement*, the valley has been able to access EU, national, and regional development funds through an innovative development strategy called *Strategia Nazionale Aree Interne* (National Strategies for Inland Regions) for the implementation of some of the most substantial projects contained in the Agreement.

Conclusions

Drawing upon the capacity of every mapping process to affect both the mapper and the mapped, action researchers value geographical mapping as a method that allows people to develop a shared representation of knowledge. Action research collective mapping allows individuals to establish transformative relationships. This process can eventually enable individuals to become groups that undertake collective actions.

We think our mapping initiative has led to the formation of a collaborative effort that has empowered people to

act, generating the significant planning outcomes discussed above. However, unlike what one can expect from traditional participatory mapping—that is, processes leading to maps that are expected to indicate shared future courses of action—our initiative's most important outcomes are not transposed into the maps, but correspond to the impact that the mapping had on mappers: Our most important result was the fact that a dozen activists who had worked on a successful anti-incinerator campaign have evolved into a valley-wide coalition that has been able to affect decision making and question the dominant development paradigm.

In our experience, the *Initiative* was effective because community partners were involved in the conception of the method itself (in the literature review phase and in a critical reflection on the relevance of past practices). Building on that, they were able to customize established protocols, based on their specific goals. Unlike many participatory planning mapping exercises which follow established protocols described in specialized manuals (Lennertz and Lutzenhiser 2006; Sanoff 2000), in the Simeto case every aspect of the mapping technique was defined on the base of a specific goal by the very people that were to be affected.

The Simeto case shows the need to reframe the debate on participatory mapping, moving beyond major critical accounts against it. If one worries about participatory planners' ingenuity in the face of power, action research-inspired mapping does directly engage with power issues, being an empowering strategy for the people involved in it: In the Simeto case, mobilized groups have made their way into city hall, and are semipermanently sitting at the decision-making table. Action-research mapping also shows the ability to engage with substantial issues (Fainstain 2011; Huxley and Yftachel 2000), avoiding the risk of becoming an empty ritual whose possible outcomes are narrowly defined in advance (Swyngedouw 2009; Swyngedouw and Wilson 2014). In our case, substantial issues—such as the need to change development models pursuing inter- and intraspecies solidarity—were the very premises of the initiative and embedded into the mapping procedural and technical choices: The mapping initiative was a way to engage people in a conversation about development, the river, mafia hegemony over land, etc. For this reason, planning outcomes were not narrow but highly political. In this perspective, we hope our experience can contribute to spur a scholarly debate on mapping. We argue for the possibility to reframe the conceptualization of participatory mapping in planning within the action-research paradigm, paying attention to how to enhance the transformative potential of mapping *while* it is being done.

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