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Back to the Drawing Board: Creative Mapping Methods for Inclusion and Connection

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Introduction

Amid the vast array of precious items in The British Museum, a small, broken clay tablet might appear rather unremarkable: a plain object, to inattentive eyes. However, this seemingly ordinary artefact contains a star-shaped engraving known to be the very first world map.¹ In the *Imago Mundi* (Fig. 11.1), triangular shapes mark mysterious islands that the Babylonians thought were the edges of the planet (Unger, 1937, p. 1). Rectangles and lines represent the city of Babylon and the Euphrates River, both circumscribed by water: the *Earthly Ocean* separates the city from unexplored territories, and the *Heavenly Ocean* bridges constellations and the Earth. Drawings and cuneiform writings narrate ancient

¹Object, *The Map of the World*, The British Museum, London, UK.

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Fig. 11.1 Babylonian map. The *Imago Mundi* conveys the origins and configuration of the world, according to Mesopotamian cosmology. Maps express culture and spirituality, combining knowledge, belief, and imagination (Source The British Museum, 600 BC)

Mesopotamian beliefs in gods, beasts, and other mystical creatures (Smith, 1996, p. 209). The map carries an all-too-human mixture of symbolism, knowledge, and belief. In other words, this invaluable relic epitomizes humankind's long-standing reliance on maps for understanding the world and telling stories.

Beyond its historic importance, the *Imago Mundi* articulates language, spatial information, and narrative. Extremely important to maps, these elements were retained across many cultures through centuries of mapping practices. But what are, in fact, the core attributes of maps? Some understand them as strictly graphic objects, but perhaps maps

could also use non-visual languages (Harley & Woodward, 1987, pp. 1–2).² Perhaps there are maps that do not relate to tangible spaces, but rather to imaginary scenarios and abstract relationships. And is it really possible to create a “neutral” map—an object with no story, no bias, no point of view? The concern for the inextricable principles of maps has produced interminable debates with impossible-to-answer questions such as these.

Until the advent of cartography as a discipline, different mapmaking practices unsystematically explored these and other reflections with no substantial attempts to achieve a consensus. Nevertheless, with the alliance of mapmaking and science (Crampton & Krygier, 2010, p. 11) in the nineteenth century, maps were regarded by academics as precise, visual, and impartial objects. They were definite and their purpose was to accurately depict space. On the one hand, this ambition expanded the scope of representation, mapping methods, technology, and survey subjects. On the other hand, it narrowed the range of experimentation, excluded narratives, and created a problematic divide: the artistic (subjective) versus the technical (objective) map. Predilection for scientific mapping methods produced an illusion of objectivity; the sacrifice of art, aesthetics, and opinions favoured precision. However, in previous traditions of skill and knowledge, this binary model would have been considered irrelevant and absurd, because the differentiation of art and technique—concepts of indissociable origins—is modern (Williams, 1985, pp. 42, 315–316).³ Nevertheless, this segregated discourse reigned in cartography for almost two centuries, perpetuated by mapmaking elites (map houses, academics, and the state) until the eye-opening defiance of post-modern ideas (Crampton & Krygier, 2010, p. 12). *Critical*

² The authors acknowledge as valid the definition of maps as graphic texts.

³ About the origins of *art* and *science*, Williams explains: “Until (the eighteenth Century) most sciences were arts; the modern distinction between science and art, as contrasted areas of human skill and effort, with fundamentally different methods and purposes, dates effectively from (the middle of nineteenth Century), though the words themselves are sometimes contrasted, much earlier, in the sense of ‘theory’ and ‘practice’”. This complex set of historical distinctions between various kinds of human skill (...) is evidently related both to changes in the practical division of labour (...). It can be primarily related to the changes inherent in capitalist commodity production, with its specialization and reduction of use values to exchange values. (...) This is the formal basis of the distinction between art and industry, and between fine arts and useful arts (the latter eventually acquiring a new specialized term, in technology)” (p. 42).

cartography sustains the intrinsic impossibility of objective or impartial maps⁴ and condemns the ethical consequences of such segregating viewpoints. To destroy this divide, the critique proposes new creative mapping methods for academic researchers and practitioners, which is the central topic of this chapter.

The surgency of new cartographic methods was progressive, rather than eventual. It was through a gradual discipline reform that cartography managed to take a hard look at itself and restructure mapmaking practices and power systems. Inceptive debates on the agency of maps and discontentment with cartographic “scientification” received attention during the 1990s (Crampton & Krygier, 2010, p. 19). One notable effort was carried by cartographers John Brian Harley and David Woodward. Together, they traced a global history of cartography (Harley & Woodward, 1987),⁵ exploring maps as worldwide cultural artefacts. This all-encompassing work uncovered overlooked maps and mapping traditions since pre-history, including their impacts and geopolitical repercussions. Their research raised reflections about the realities and actors that maps can either favour or harm.⁶ Thanks to Harley, Woodward, and others,⁷ the critique slowly grew in debate circles, where scholars exposed and rejected the positivist “crimes” of traditional cartography. This acknowledgement opened the academic space for the new practices and theoretical approaches under the umbrella of critical cartography.

Amidst the critique, both inside and outside academia, aspirations of objectivity started to become irrelevant. Expanding notions and agents of maps have legitimized other forms of sensing, representing, and relating to space. As a consequence, the mapping *process* became the focus of cartography. Geographers Jeremy Crampton and John Krygier define critical cartography as “a one-two punch of new mapping practices and theoretical critique” (Crampton & Krygier, 2010, p. 11). Therefore,

⁴ Maps produced with a claim to objectivity or impartiality are addressed in this chapter as “scientific”, “positivist”, or “traditional”.

⁵ Complemented by a third volume in 1998, by Woodward and Lewis.

⁶ In *The New Nature of Maps*, Harley discusses these inquiries more deeply, through concepts such as *cartographic silence* or (i.e., the omission, falsification, or manipulation of maps for the benefit and dominance of a specific group or authority). He outlined multiple principles of cartographic misuse that enable or reinforce abuse of power and hegemonic perspectives.

⁷ Other notable critical cartographers are geographers Denis Cosgrove and Jeremy Crampton.

its mapping methods are necessarily untraditional and constructivist. They support uncertainty. They discover new stories and inclusive meanings of space. Rather than the outcome (the map as an object), other mapmaking aspects prevail, such as transparency and participation. More relevant questions arise: which ideas, senses, and values are included or excluded in the mapping process? Who is heard and who is silenced? What purpose does the map serve and which transformations can it unravel?

This chapter discusses these questions through the framework of two creative mapping methods: social cartography and deep mapping. These approaches do not attempt to reject, but rather reclaim the partial, subjective nature of maps. Since cartography is inevitably limited, these methods recognize that creativity is vital to attend neglected necessities. Each section introduces one of the two methods with their origins, theoretical frameworks, reception, and applications. More importantly, they will show how these methods solve the challenges of traditional cartography, with hopes of demonstrating their incredible potential for participatory and environmental research.

One of the major problems denounced by critical cartography is the reinforcement of hegemonic perspectives. To avoid it, cartographers must explore the unseen, the concealed. Stories of the less privileged. Stories of the environment. In sum, maps need *to include*. All individuals and groups should have the opportunity to reflect, express, and opine about their territories and spatial practices; to have their stories told. In response, the first part of this chapter introduces social cartography, a method of acknowledging and legitimizing underrepresented standpoints. The section shows how the method was born within the social sciences and gained visibility in participatory planning. It also analyses its effectiveness against scientific maps, exposing its reformative principles. Finally, the chapter brings some examples of how the method gained momentum among artists, academics, and activists. Social cartography opened up new, free, bottom-up, hands-on forms of mapping.

Another problem relates to perception. As a visual language, maps have limitations in depicting personal and sensorial experiences. Abstract qualities of space challenge representation: the passing of time, flows and

rhythms, memories, values, and interests. Maps could certainly encompass more. In addition, traditional maps fail to recognize the importance of subjective spatial experiences—precisely those that foster connection and place attachment. Sometimes, understanding a space requires it *to be felt*. Deep maps focus on such qualities. They aim to surpass the objective, the pictorial; a goal helpful not only to those who cannot see, but to all who do not feel particularly engaged through visuality. With literature, storytelling, artistic performances, and other creative practices, deep mapping bridges these sensorial and imaginative gaps. This method generates a richer and more nuanced conception of space, a reason why it is so necessary. The second section shows how the book *PrairyErth* pioneered deep mapping in the form of literary cartography, opening the floor to other creative approaches. Selected examples illustrate the method's emphasis on process and immersive experiences, with both informative and transformative benefits (for further extended discussion and application of deep maps as a co-creative form of research practice see Humphris et al., this book).

These two approaches are transdisciplinary and conceptually boundless. Oftentimes they overlap with different methods; an openness that can be received with discredit. However, their creators and users aim not at formality or definition but take advantage of this theoretical amplitude to generate new debates and push the boundaries of spatial representation.

Traditional cartography may be dead (Wood, 2003, p. 4), in some sense, but mapmaking still lives. There is not only space but demand for methods that challenge power relationships, both inside and outside academia. This chapter proposes that environmental activists and researchers of all disciplines incorporate and/or develop new cartographic approaches in their work. They can contribute to critical cartography by including unheard perspectives and inviting others to imagine how spaces can be different, better. As participatory practices within communities, these methods promote dialogue, empowerment, and transformation. Mapmaking is not exclusive to the elites and maps are not unidimensional objects. This is the great lesson of critical cartography. One must simply gather creative tools to overpower the old “Age of Cartography” (Wood, 2003, p. 4).

Social Cartography: A Method for Inclusion

“I’m surprised my body isn’t in the Tyne. Before Elliott gave me a bed, I was homeless, I wanted to die”. These are the difficult memories of Sam, a man without housing living in the United Kingdom—one of the many to have his needs and experiences daily brushed off by politicians, city planners, and the regular passer-by. His impactful words were written in the composite map (Fig. 11.2) created during the workshop *Imaging Homelessness in a City of Care* (Irving & Moss, 2018, pp. 270–275).⁸ To spark meaningful debates and defy preconceptions of homelessness, the project authors collected the marginalized voices of 30 people living in the streets of Newcastle-upon-Tyne. They discussed how social cartography can offer perspectives beyond conventional views of urban space. “Not allowed” areas, or notes such as “slept here” and “I was married there!” mark the places of homelessness’ struggles. An innocent “where I live—nice area, family around me” revealed, in fact, a surprisingly difficult condition: the label was placed on a cemetery. The concealed, “undesirable” practices of the homeless—regularly addressed with pity or judgement—are openly discussed in the project, provoking a reaction, calling for attention and care. The map presents one of the many possible approaches to social cartography and its great potential to oppose exclusionary narratives of space, open new perspectives, and inspire social change.

But exactly how does social cartography create democratic mapping practices? To explain maps as socially constructed forms of knowledge, geographer J. B. Harley once identified two sets of rules guiding dominant mapping discourses (Harley, 2001, pp. 153–158). One set concerns technological systems that dictate *how to map*. These systems originate from the false assumptions:

(...) that the objects in the world to be mapped are real and objective, and that they enjoy an existence independent of the cartographer; that their

⁸ The 2014 project, by social policy researcher Adele Irving and social/cultural geographer Oliver Moss, was financed by the Economic and Social Research Council (ESRC), UK (kollektiv orangotango+, 2018). More information on: <https://esrcimaginghomelessness.wordpress.com/>.

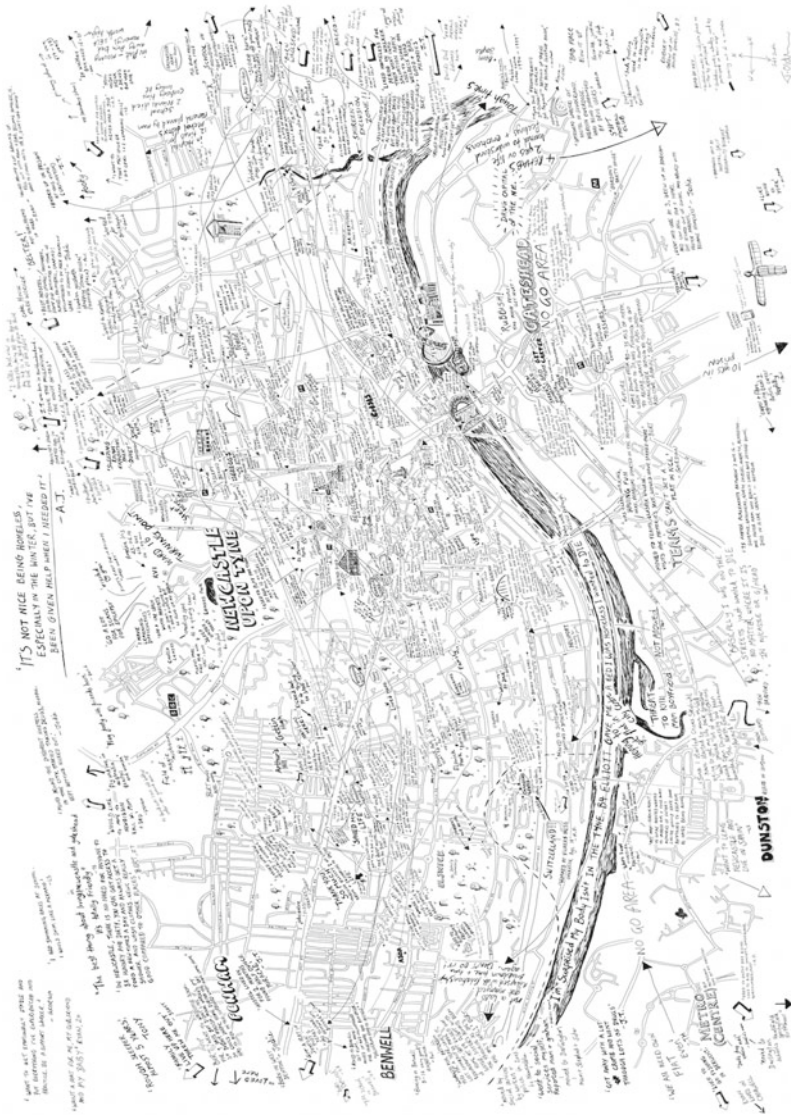


Fig. 11.2 Spaces of homelessness. Counter-map for the project *Imaging Homelessness in a City of Care*, in Newcastle-upon-Tyne, UK. With legends and quotes, the map situates the daily homelessness experiences of thirty participants (Source Adele Irving and Oliver Moss, 2018. Creative Commons License: <https://creativecommons.org/licenses/by/4.0/leg> alcode. URL: <http://nrl.northumbria.ac.uk/id/eprint/39919>)

reality can be expressed in mathematical terms; that systematic observation and measurement offer the only route to cartographic truth; and that this truth can be independently verified. (Harley, 2001, p. 154)

In other words, exclusionary systems of technology, skills, and standards categorize (and homogenize) the cartographic knowledge. Social cartography questions these rules by disputing the authority of selected parameters. It defends the legitimization of bottom-up, creative, and participatory maps. The homelessness map, for example, was drawn with the assistance of a visual artist but conceptualized by the workshop contributors—those who have in-depth experiences of homelessness but lack visibility and mapmaking authority.

Another group of rules, elusive but equally powerful, comprises cultural values. Related to ethnicity, politics, religion, and social class (Harley, 2001, p. 156), these influences guide *what to map*. Here, social cartography defies the presumed objectivity of maps by inquiring which realities are portrayed; by whom, and for whom. To exercise these examinations is to reveal the inexorable subjectivity of maps. Furthermore, as narratives, maps will always conceal one side of the story. Harley calls it *the silence of maps*. He argues that maps “exert a social influence by their omissions as much as by the features they depict and emphasize” (Harley, 2001, p. 67). Therefore, social maps are subversive for their focus on systemically neglected perspectives—another point exemplified by the homelessness map, which uncovers “inconvenient” topics of social inequality.

Those are the defiant principles of contemporary social maps. In sum, the method’s contribution to the post-modern critique comes from the rejection of elitist cartographies, in favour of bottom-up and horizontal decision-making processes. As a result, social maps can generate dialogue or resistance against social and environmental injustice.

Origins, Academic Use, and Criticism

Social cartography holds no single definition or methodological delimitation. Different methods across disciplines have been designated as such, and their first appearances have neither been attributed to specific

scholars or works nor necessarily sustained subversive intentions. Urban researcher Laura Vaughan understands social maps as those “whose purpose is to represent specific aspects of society at a given time and place” (Vaughan, 2018, p. 1). Tracing them back to the 1790s, the author links the emergence of social cartography to industrialization and urbanization. In this context, she emphasizes the work of social researcher Charles Booth and his role in “the phenomenon of the social reformer as urban investigator” (Vaughan, 2018, p. 2). At the time, and mostly in the UK, social scientists started to use maps for locating and visualizing patterns of social dynamics in cities. One contemporary example of similar use would be the racial dot map (Fig. 11.3), which represents, with colourful dots, demographic data on race or ethnicity. Produced in many different countries, such maps reveal logics of spatial segregation, especially when contrasted to urban infrastructure or poverty maps



Fig. 11.3 Racial dot map of Brazil. Each dot represents a person of declared race/ethnicity as follows: blue for white, green for brown (mixed race), red for black, yellow for Asian, and brown for indigenous. The map reveals a predominance of black and mixed populations in the North and Northeast, coinciding with the lowest income areas, as indicated by the *Population in Poverty Map*, Fig. 11.4 (Source Post Advertising Technology Agency (PATA), 2015. Creative Commons License: <https://creativecommons.org/licenses/by/4.0/legalcode>. URL: <https://patadata.org/maparacial/en.html>)

(Fig. 11.4). In Vaughan's definition, the subversive trait of social maps is not intrinsic—they merely reflect existing conditions of society and space. More often than not, however, they have defied biased positions simply by exposing the reality.

In another methodological direction, social scientists Rolland Paulston and Martin Liebman adopted social cartography for studies in educational policy (Liebman & Paulston, 1994) in the field of comparative education, in the 1990s. They applied the method in an entirely different way from the social reformers, illustrating its interdisciplinary diversity. With a rather loose notion of social maps (which, nevertheless, fits within Vaughan's definition), their research focused on social relationships instead of spatial dynamics. Their maps were similar to concept,

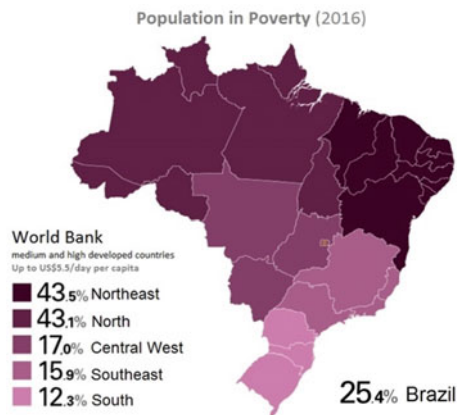


Fig. 11.4 Brazilian population in poverty map. The map shows that North and Northeast areas of Brazil had almost half of the population in poverty. The comparison with the *Racial Dot Map* (Fig. 11.3) suggests a correlation between these areas and people of black or mixed race. The two maps are examples of a social cartography typology that combines social and spatial information (Source Brazilian Institute of Geography and Statistics (IBGE), 2016. URL: <https://agenciadenoticias.ibge.gov.br/en/agencia-news/2184-news-age-ncy/news/18835-one-fourth-of-the-population-lives-on-less-than-r-387-a-month>)

cognitive, or mind maps,⁹ which organize ideas through text and figurative landscapes.

Paulston and Liebman's approach takes advantage of the overlapping scopes of map types. For them, non-rigidity is potentially insightful. Their social maps can be combined and reinvented: they serve as mere guidelines for creative research. Regarding definitions, the reason why the authors deemed it necessary to designate these conceptual maps as *social maps* is explained as follows:

(...) social cartography (...) does identify and represent on a two-dimensional plane features perceived to occupy physical space. (...) however, the features are not mountains, rivers and cities, but the networks of humanity built on the variety of understandings and interpretations of numerous socially constructed associations, or cultural clusters' knowledge claims. Because cultural clusters occupy physical space that as often as not is contested, **we believe social cartography often identifies with geopolitical maps because one group's political features are what attract persons to a particular space. The ideological space they choose, their affiliations, directly informs their choice of real space so that when we as social cartographers map our vision of ideologies and social theories we are, in a way, also mapping the isolated pockets of real space** people occupy because of their choices as well as the real spaces they choose not to occupy because of those same choices [emphasis added]. (Liebman & Paulston, 1994, p. 240)

⁹ Concept maps allow for the exploration of several different ideas, containing labels that express their connection (Novak & Gowin, 1984). Cognitive maps express complex ideas through simple sentences, using multiple links between elements (Ackermann et al., 1992; Eden, 1988). Mind maps, often employed for decision-making, focus on a single element (idea, event, problem, etc.), mapping secondary or related concepts (Buzan & Buzan, 1993).

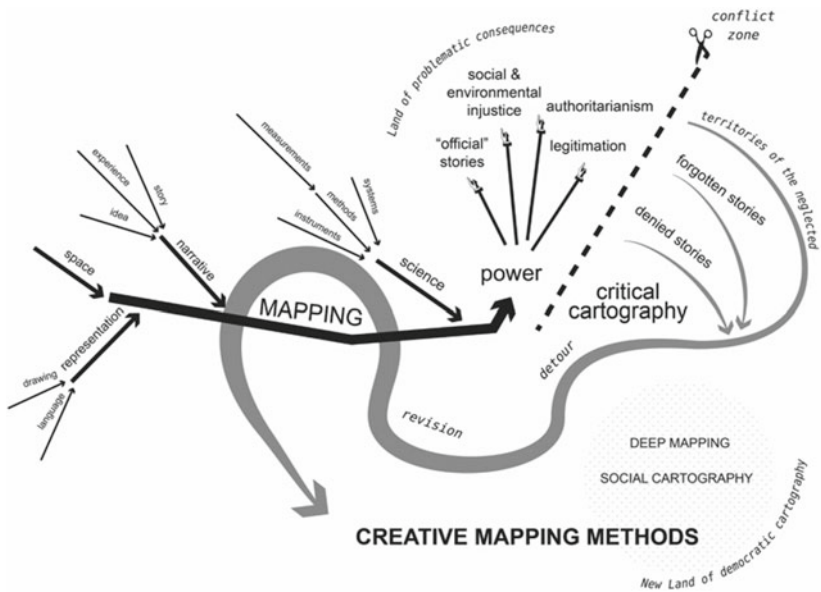


Fig. 11.5 Phenomenographic/conceptual map of critical cartography. This map was inspired by the social maps of Paulston and Liebman. Phenomenographic/conceptual maps use an abstract representation of space to organize ideas and theories. This social cartography method reveals new connections about a topic and the relatedness of its elements (Source Talitta Reitz, 2021)

Perhaps the greatest impact of this proposal is the combination of ideas with both concrete and abstract spatial data, a strategy exemplified in the contemporary examples presented in the next section. Paulston and Liebman wanted to generate relational insights—not to “paint a picture”. In their model, maps were not used to capture *visual* reality, but to understand *social* reality (Fig. 11.5). They mapped interests, values, and viewpoints that inevitably relate to space, but only through indirect associations. Therefore, this conceptual form of social cartography can assist in understanding how social actors and events occupy territories. It explores *causal spatial relationships*, rather than direct representations of space.

Through Paulston and Liebman, social cartography was established as an interdisciplinary, post-modern, and post-structuralist mapping

method that opens up possibilities for inclusive discourses, mini-narratives, and non-binary perspectives (Gorostiaga, 2017, p. 880). Different versions also gained attention in geography and planning disciplines. In participatory design and planning, the use of social maps surpassed disciplinary boundaries and reached the realm of professional practice. Community workshops, public consultations, and other forms of participatory initiatives started to include social maps in the development of private and public projects (Lobatón, 2009, p. 15). As a result, social cartography can oftentimes be confused with *participatory mapping*. For some, this interchangeable use of concepts is unproblematic, because participatory initiatives are necessarily “social” and attempt to break with the *status quo*. However, opposing perspectives argue in favour of a distinction. With the *New Social Cartography of the Amazon Project*, de Almeida et al., (2018, pp. 46–49) explain that, as opposed to social cartography, participatory mapping can perpetuate institutionalized discourses, depending on who initiates and conducts the process:

They [social maps] are distinguished from participatory maps. Because participatory maps, such as planning instruments, **are defined by planners** in order to incorporate communities in decisions which are made for them or will affect them. Unlike these maps, our social mappings work in favor of social movements and collective identities as well as intrinsic organizational forms (of mobilization and solidarity) adopted by the groups themselves [emphasis added]. (kollektiv orangotango+, 2018, p. 48)

To simplify, both methods are fairly similar and can, indeed, overlap. Both involve the people and groups who receive the resulting impacts of mapping processes and associated projects or events. Both have the objective of concretizing democracy and promoting positive social transformation. However, as discussed above, participatory maps are oftentimes unimpactful and cosmetic, mere checkmarks for the democratic planning cookbook. This deviation occurs because participatory processes frequently include only a handful of participants. They fail to

involve key actors and communities, who, dissatisfied with the propagandistic, pre-established outcome of projects, choose (or are compelled) not to opine. Why bother, anyway (for further discussion of this point see Ramirez Aranda and Vezzoni, this book)?

Of course, social maps are not exempt from dissatisfaction or irrelevance. Geographers Susana Lobatón (2009) and Ulrich Oslender (2017) warn against social maps that, instead of creating counter-narratives, nurture traditional, inaccessible cartography suited for top-down decision-making. They observe that, in social cartography processes, communities may end up adopting institutional language (such as regarding their territorial relationships in terms of property rights) or even using spatial knowledge to vulnerate the rights of other communities (Oslender, 2017). Furthermore, oftentimes it is not possible to ensure the usability of social maps in retrospective research; this is a reason why Lobatón (2009, p. 16) stresses the importance of accessible codes or captions for out-of-context readings. In other words, as with participatory mapping, social cartography is also criticized for institutionalization tendencies. But their scope is broader. The difference is: social maps are not *just* participatory. As exemplified with Vaughan, Paulston and Liebman, their essential premise is the inquiry about the spatiality of social problems and the defiance of hegemonic cartographies.

For its postmodern character, the method has been accused of nihilism or relativism. Yes, the scope, reach, impact, and obstacles of social maps depend much on their framework. Yes, they are subjective and confrontational by nature. However, as social scientist Jorge Gorostiaga sustains, social cartography—just as the academic critique in which it is inserted—is anti-hegemonic and intends to decline “the emphasis on ‘the truth’ to highlight the process by which something is considered true” (da Silva, 2001, p. 151, quoted in Gorostiaga, 2017, p. 885). As a result, this “umbrella method” requires certain independence from disciplinary prescriptions, to counteract the rigid ties it rejects in the first place. And so far, it has been heeding fascinating results.

Research and Activism

One example of social cartography that lies within the boundaries of research and activism is the work of American sociologist Nancy Peluso. In 1995, she coined the term *counter-map* to define seditious maps used against the abuse of power (Peluso, 1995, p. 384). The strategy was used by communities and activists in Kalimantan, Indonesia, to reclaim their rights against industrial timber exploitation in local forests. For two decades, companies and government institutions employed “official” maps as means to legitimize exploitative practices. Activists responded with a grassroots process of sketching and marking GPS points to create a counter-map. The instrument helped communities engage in debates, gain support, reclaim the rights to the territory, and secure the preservation of the forest. Peluso talks about *counter-mapping* the mapmaking practice of local people and groups that stand in opposition to authoritative maps, specifically those that support some sort of injustice. This form of mapping can be executed through a re-appropriation of formal techniques and technologies or the legitimization of alternative ones (Peluso, 1995).

Within the rich universe and exciting potential of counter-maps, one transdisciplinary and non-institutionalized project deserves special regard. *This is not an Atlas*, by European/Latin American group *kollektiv orangotango+* (2018) brings many examples of social maps, with distinct approaches, aims, and outcomes. The edited book features projects in the intersection of socio-political activism, art, and creative mapping, described as follows:

The work of social mapping thus includes two aspects: an ethnographic one, which requires academic work, direct observation techniques, detailed descriptions and criteria to select information, and another one carried out by the social agents themselves, defining the use of instruments, their choice, the selection of what is included in the map. (*kollektiv orangotango+*, 2018, pp. 157–173)

Mapping with children was an exercise used in 2013, by activists Nicolás Frank and Fernanda García in classrooms in rural Uruguay

(Frank & García, 2018, pp. 152–157). Throughout site visits, conversations, and workshops, the instructors asked children of different schools and age groups to create maps of their villages, neighbourhoods, paths, and daily spaces of life. The process included several steps: first, the children produced maps with no help or intervention; then, through debates and the assistance of existing maps and satellite images, they were able to compare and include new references and layers of information deemed relevant; and finally, collaborative sessions guided the creation of group maps. Discussions about their relationships to spaces uncovered important topics:

An example of this is the relationship between the creek where the children usually play and fish, and the new intensive agriculture that is taking place in its watershed. This agriculture includes the use of high amounts of pesticides and herbicides, which can be harmful to their health. Mapping these spatial configurations isn't enough to establish causal relations about health or environmental problems, but it enriches the collective process of asking new questions. (kollektiv orangotango+, 2018, p. 154)

As an educational exercise, this hands-on approach instructed not only about maps and cartography but about critical cartography. Moreover, it stirred conversations regarding education, identity, the environment, and spaces of childhood—reflections that perhaps remain as legacies for Uruguayan communities as a framework for addressing the necessities of local children.

This collection of social maps starts and ends with provocations. By self-proclaiming “not an Atlas”, the editors and collaborators reject traditional cartography and propose something new, oppositional. Even outside of academia, every form of counter-cartography is critical and contributes to critical cartography. And they end with a non-conclusion, by including the perspectives of different cartographers and activists. kollektiv orangotango+ shows how both critical and social cartography are more than a critique and a method, but parts of an ideological movement that extends the agency of cartography to anyone.

Within this democratic momentum, new mapping methods, practices, and products continue to appear. In academic research, participatory practice, and activism, social maps can inform difficult-to-see, unjust social relationships. As described by Lobatón (2009), the role of the activist, practitioner, or researcher is to collect and voice multiple forms of spatial experience. Environmental activists and researchers have one additional responsibility, which is to include more-than-human narratives that can improve relationships with nature. As a result, the social cartographer can bridge communication gaps between society and institutional maps, thus supporting better and more democratic decision-making (Lobatón, 2009, p. 20).

Deep Mapping: A Method for Connection

Imagine the map of a farm. Dimensions are expressed by clearly defined boundaries, area figures, and scale. Contour lines emphasize the topography, and hatches represent different surfaces: pervious and impervious; concrete, water, and soil; cropland, meadow, and pasture. But how to capture the scent of a wheat field, the chirp of a bird, and the patterns of a moving starry sky? How to represent the feeling of home, moist feet touching a marshy ground, or the fear of a wild creature crossing the trail ahead?

The methods of scientific cartography are limited; they fail to express *meaning*. Deep maps come from the urge to represent personal impressions of a place. Sensations, stories, ideas, and memories are difficult qualities to capture in a drawing. To solve this limitation, deep mapping proposes to seek depth. The adjective *deep* contests the conceptual “superficiality” of traditional maps in two directions: (1) deep maps are concerned with qualitative and subjective information, as opposed to quantitative data; and (2) they select unconventional forms of representation, rather than one, strictly visual depiction (drawing). Deep maps come from a humble representational standpoint—one that recognizes the limits of human knowledge and relies on art to translate the essence of a place. Precision is inessential to deep maps, as opposed to multiple layers of meaning. To literary scholar Susan Maher, the amplification of



Fig. 11.6 Tallgrass Prairie National Preserve in Strong City, KS. A view of Kansas' prairie landscapes described in *PrairyErth* (Source U.S. National Park Service, 2006)

many stories (human and more-than-human) is their character-defining quality. “(D)eep map makes the ‘deeply felt’ its forte” (Maher, 2014, p. 133), meaning the principal function of this mapping practice is to convey perception and significance; the past and present feelings of place.

Deep mapping originated amid the rise of critical cartography. In particular, one book received attention for proposing a different form of spatial representation. Published in 1991, *PrairyErth: A Deep Map*, stands out as probably the method's most renowned example (Maher, 2014, p. 92),¹⁰ with two important contributions to critical cartography: the representation of *placeness* and the *literary map*.

From Space to Place: The Process of Connection

The discussion of *placeness* is essential to understanding the contribution of deep maps. *PrairyErth* recognizes an important correlation between space and meaning. In the opening paragraphs, the author and historian William Least Heat-Moon confessed feeling initially estranged to encounter a new landscape (Fig. 11.6) while passing through Chase County at a young age:

I've probed my memory to find even one detail of that initial passage into the western prairies. What did I see, feel? Nothing now, except our route

¹⁰ In *Deep Map Country*, p. 92, professor and writer Susan Maher discusses *Wolf Willow*, a much earlier (1962) work by Wallace Stegner, possibly the very first known deep map.

returns. My guess is that I found the grasslands little more than miles to be got over—after all, that’s the way Americans crossed Kansas. Still do. (Least Heat-Moon, 1991, p. 27)

Years after his childhood visit, he returned to the Kansas prairie with a novel sense of enchantment. The secret for this new sentiment, this connection, he felt, was a gradual absorption of the place’s hidden idiosyncrasies:

I drove across the prairie again on a visit to California, and the grasslands looked different to me, so alive and varied (...) I began to like them not because they demand your attention like mountains and coasts but because they almost defy absorbed attention. At first, to be here, to be here now, was hard for me to do on the prairie. I liked the clarity of line in a place that seemed to require me to bring something to it and to open to it actively: see far, see little. I learned a prairie secret: take the numbing distance in small doses and gorge on the little details that beckon. Like its moisture, the prairie doesn’t give up anything easily, unless it’s horizon and sky. Search out its variation, its colors, its subtleties. (Least Heat-Moon, 1991, p. 27)

What could the reader infer of this inner transformation? That the space, the prairie, gained meaning through the author’s experience. This notion has been somewhat present in disciplinary debate since the 1970s. Familiarity, emotional connection, and space attachment are central elements in the idea of *placeness*. Examining the topic, humanistic geographer Edward Relph proposed a differentiation between *space* and *place*. To him, the notion of place includes human experiences and memory (Relph, 1976). In other words, a *place is a space with meaning*.¹¹

¹¹ There is a danger in Relph’s anthropocentric perspective. If a space happens to lack any sort of human value, it is not, by all means, meaningless or invaluable. Spaces have their own right to existence, regardless of human values placed upon them. Another human geographer, Yi-Fu Tuan, contributes to a different perspective in which both place and space have meanings, but opposing ones. Space is indefinite, vast, difficult to grasp or understand; whereas place implies something more tangible, real, and familiar. Tuan’s conceptualization can be considered more environmental because it recognizes all spaces as inherently meaningful. *PrairieEarth* and other examples of deep maps seem to rely on this more complex understanding of space and place since they put great significance on ecological relationships and more-than-human activities and

Limited or unpleasant interactions can result in *placelessness*, the absence of bonding or identification with space. This is the sense of detachment described by Least Heat-Moon in his first passage through Chase County. At that initial moment, the prairie meant nothing to him, not yet a place, but a space.

So, why are these concepts relevant to critical cartography? Because systems of oppression reinforce *the silence of maps* (as discussed earlier). Therefore, while some places are extensively surveyed, others remain neglected, “irrelevant”. Deep maps re-signify the importance of forgotten or unmapped regions. Using Relph’s terminology, deep maps can encourage the transformation of spaces into places, or at least reveal existing narratives and relationships. Individuals attribute spatial meaning through focused attention and embodied practices. Such a process can be conscious or unconscious, deliberate or incidental, prolonged or short—but it is always empowering. Deep maps bring placeness to light. Evaluating the contributions of *PrairyErth*, a Chase County rancher stated: “the book had a positive impact, overall. Because I think it raised our self-esteem. We thought: ‘Wow, somebody could see something in us that we didn’t see’”.¹² His testimony proves that not only did the deep map connect Least Heat-Moon to the prairie, but it also added new values to existing relationships between those Kansas communities and their environment.

William Least Heat-Moon sees the disconnection between humans and land as the main cause of environmental problems. His aspiration for the book was clear: he encouraged Americans to (re)connect with the land. In his mind, if he could show how interesting and deep the natural and human history of Chase County was, then others could start seeing value in their own homes and lands. *PrairyErth* encouraged such connection through the reading and inspired new deep mapping practices. It also attracted passionate readers to visit Chase County and to support initiatives for environmental conservation. By the time of

rhythms. In other words, deep maps can bridge this conceptual gap by blurring the boundaries between “valuable” and “non-valuable”.

¹² The documentary *Return to PrairyErth*, by New Truth Films, brings William Least Heat-Moon to Chase County 20 years after the book’s publication, in conversation with local ranchers and book enthusiasts.

its publication, in 1991, century-old conversations about the establishment of a national park finally gained motion. The following year, by the efforts of proud ranchers and inspired preservationists, the Tallgrass Prairie National Preserve was created. *PrairyErth* nourished—and still does—local aspirations to protect the ecology, the culture, and the history of the prairie landscape.

Literary Cartography

When Least Heat-Moon regarded *PrairyErth* as a deep map, he left implied a conceptual question: are maps essentially pictorial? The task of conveying tri-dimensional space on flat surfaces was historically central to the visual arts, and Renaissance artists significantly improved perspective drawing. But this challenge was even more complicated in the case of maps, which also required precise and measurable information. The ingenious development of mapping techniques¹³ achieved ambiguous results, highlighting precision on the one hand, but distorting realities, on the other—a paradox epitomized by the Mercator projection. Considering the difficulties of visually translating impressions, deep mapping proposes a different tactic: instead of flattening spatial qualities into drawings, it captures them in literature.

In narrative form, maps are powerfully free. *PrairyErth* starts with a collection of quotes about Chase County and the American prairies. These testimonials show how the place is portrayed in people's imaginations. Next, the book presents a black-and-white, very simple visual map of Chase County. So simple in fact, it barely contains relevant information other than the main roads and names of ranches. The drawing helps the reader situate the ranches, but ironically, reveals to be dispensable to understanding the prairie—it tells a shallow story. Perhaps deliberately, it seems that Least Heat-Moon desired to contrast the shallowness of this simplistic map with the depth of his prairie accounts. It is the literature that translates the essence of a place.

¹³ Such as conical, planar, azimuthal, or cylindrical projections.

Many authors were inspired by these first deep maps (*Wolf Willow* and *PrairyErth*) and the 1990s saw the expansion of the genre (Maher, 2014, pp. 145–245).¹⁴ Deep maps are environmental literature. But similar to many post-modern methods, there are inquiries concerning their conceptual boundaries. How, then, are deep maps different from other works in environmental history? They focus on spatial narratives. The place is the protagonist, the backbone of the story. But deep maps are also personal. As opposed to other genres, deep maps reject detached, analytical perspectives and bring a situated gaze to cartography. They are prose and poetry, factual and fictitious. Because of this innovative and stylistic freedom, deep maps require authors of mixed talents, abundant creativity, and diverse training. In interdisciplinary writing, researchers can unveil the character of a place through archaeology, ecology, geology, art, anthropology, among many others. A lyrical voice weaves information, storytelling, and meaning. But non-academic authors have also adopted deep maps in their own, talented approaches. Literary cartography brought new meanings to mapping, outside the box of drawings. This parting encouraged new understandings of cartography by emphasizing not the drawing, but the artistic process; not the bare space, but the meaningful qualities and particular stories of a place.

Beyond Literature

Although recent scholarship and independent practices have proposed their approaches to deep mapping, there is a general understanding that, as a creative process, this form of critical cartography is enriched by freedom, plurality, and inventiveness. Deep maps can rely on scientific works, but should by no means be restricted to them, nor by literature. For artist and cultural studies researcher Selina Springett, a deep map can be more than a concept or a method; it can be an aesthetic choice or even a process (Springett, 2015, p. 624). After *PrairyErth*,

¹⁴ Maher makes reference to several deep map authors, such as Sheila Nickerson, Ian Marshall, Matt White, Sharon Butala, and Linda Hasselstrom (Maher, 2014, pp. 145–245).

researchers and activists started to explore creative dimensions of representation beyond writing. The following examples illustrate possibilities for artistic, collective, and urban deep maps.

Brett Bloom and Nuno Sacramento are deep mapping practitioners who recommend a methodology for a *collective process*, with possibilities in writing, storytelling, performances, videos, and art workshops (Bloom & Sacramento, 2017). Their procedure includes nine non-sequential steps and their principles (ibid., pp. 76–78). It goes like this: the first step involves the organization of an immersive experience for spatial recognition, like a retreat or a camp. Gradually, a mutual bond grows between participants, as they start to feel more connected to the place. The next three steps focus on varied explorations. A framework emerges from conversations about personal knowledge and backgrounds. Specific vocabulary, cultural perspectives, and life experiences are some possible topics. Through discussions, walks, workshops, exercises, performances, readings, screenings, lectures, and many other types of activities, the group can explore these frameworks. Deep maps are meant to gather deep, long-ranging, subjective, and specific input; this requires the casting of a wide net to first identify and later select narratives. Casually and formally, in situ and displaced, individually and collectively, the subjects should be woven in “several different, overlapping, layered ways” (Bloom & Sacramento, 2017, p. 76). Only then will the conversation start to open up and reveal hidden gems.

Within their recommendations emerges the creation of a safe space for dialogue. Acknowledging conflicting perspectives in an environment of positivity can be very constructive. For this aim, the authors suggest fostering a spirit of discovery and exchange, the delineation of guidelines, and the careful selection of participants. These decisions are indispensable to the outcome and should be aligned with the purpose of the investigation. However specific the methodology, these considerations can also be relevant to individual deep mapping. Take *PrairyErth*, for instance. To discover the prairie’s deep layers, Least Heat-Moon had to establish a meaningful connection to interview local ranchers. Although the results include the filter of his perspective—as opposed to a composition of multiple perspectives—deep maps are hardly strictly individuated works. They encourage a horizontal form of mapmaking.

Another point for consideration, Bloom and Sacramento (2017) believe rural areas to be the ideal settings for deep maps. There is a great potential for achieving group cohesion during immersive experiences because isolation from busy, urban lives can have a powerful unitarian effect. Indeed, even *PrairyErth* followed this model by adopting rural Kansas as a subject. However, a question can be raised about the relevancy of urban deep maps.

Why is urban deep mapping necessary? Most city maps have an orientation function, including transit network, location of businesses and public facilities, urban equipment, and tourist attractions. Despite the contemporary boom of new cartographies, there are, indeed, many challenges to grassroots urban mapping collaborations. One of the obstacles to using deep maps in cities is the multiplicity of narratives. High demographic densities bring too many perspectives on placemaking. Where *PrairyErth* narrates the stories of people living in twelve Chase County ranches, how would one tell the stories and memories of the 10,000 people residing in a single block in Manhattan? Or the millenary history of a city like Rome? The narratives of hidden urban creatures and the many layers of archaeological history? Cities present a daunting complexity. However, contrary to traditional cartography, deep mapping does not presume to portray an absolute picture. It focuses on the common, untold, unnoticed stories: mini-narratives. Urban deep maps are urgent to create bonds and strengthen communities. Metropolises attract low permanence residents who find it hard to connect with a place and to create a sense of community. Therefore, urban deep maps are even more necessary to give cities a holistic, environmental, and inclusive lens (see Humphris et al., this book).

Identifying this methodological difficulty, communication and semiotics professor Daniel Ribeiro suggests three approaches for deep mapping in cities: roaming, archaeology, and montage (Ribeiro, 2019, pp. 45–47). Life in urban centres—especially in predominantly unsafe and unequipped cities—tends to be experienced in enclosed spaces: the home, the car/train/bus, the workplace. But place attachment requires an actual experience of place, with discovery, repetition, memory, connection. Therefore, perambulating (aimlessly) or walking (with destination) are essential ethnographic approaches to the process of recognition and

belonging. This idea was incarnated in the *flâneur*, by French poet Charles Baudelaire in the nineteenth century and by landscape historian John Dixon Hunt, with the three types of walking and perceiving the environment: the procession, the ramble, and the stroll (Hunt, 2003). All approaches highlight embodied experiences of pedestrian movement as meaningful city practices.

Ribeiro also argues that urban deep mapping should employ archaeological exploration, uncovering historic artefacts, architecture, landscapes, etc. Environmental narratives can add much value to the process, considering they are frequently dismissed in urban cartography in favour of social and economic topics. Finally, the scholar advises the juxtaposition of different mediums (photography, literature, maps, music, videos, drawings, etc.) through a montage process. Of course, a strictly literary deep map would incorporate such elements within its prose or poetry. But Ribeiro's approach encompasses all sorts of creative expression mediums. In fact, social cartography, for example, can be employed within the entire deep mapping process. The methods of Bloom and Sacramento (whose work involves place-based storytelling, soil analysis workshops, listening sessions in kayaks, among other fascinating activities), reinforce this point about creativity and diversity in deep maps. Conversations are, then, not only deepened but broadened. Both Ribeiro (2019) and Bloom and Sacramento (2017) expand the deep map ontology and its dissemination among activists, researchers, and local communities. They show the immense, yet underexplored potential of creative mapping methods.

A particularly inventive case of non-literary and non-academic deep mapping is that of Dutch theatre company, PeerGrouP (see Davis et al., this book; see also, Van der Vaart, this book). While this creative enterprise does not designate its projects as deep maps, their highly communal and site-specific ways of learning about places correlate to the premises and goals of the method. The theatre group musters professionals of varied art disciplines (actors, sculptors, architects, dancers) to work with immersive experiences and performative projects in rural areas. At the start of every project, professionals mingle with local participants to learn communal stories and embodied practices. "Integrate and infiltrate" is



Fig. 11.7 *Grutte Pier fan Kimswert* procession and performance. In this performative, deep mapping process, the local community was involved in the investigation, conception, reenactment, and celebration of a historical event (Source PeerGroupP, 2016. Photo: Reyer Boxem)

their motto. As important as trying to learn about a place, they believe, is to see it through someone else's eyes.

The entire creative process is collaborative: from early conversations, conceptualization, and rehearsals, until the final performance. For instance, *De Affaire Vermaning* (The Vermaning affair) play incorporated an ancient road in their theatre piece about the archaeological discovery of a local farmer (Bruinsma, 2018). In 2016, *Levende Duinen* (Living Dunes) involved “a unique experience in which knowledge of coastal management [was] poetically interwoven with the personal experiences and insights of the islanders of Terschelling” (van der Werf, 2016). The result of this storytelling project is a 45-minute listening walk available for download, which can be appreciated by anyone.¹⁵ Performed by Frisian residents, the 2016 *Grutte Pier fan Kimswert* play and procession (Fig. 11.7) evoked stories of a local hero and a forgotten battle, changing perceptions of place and reigniting a sense of belonging (Bruinsma, 2016). Albeit brief, their contribution is not limited by the ephemeral character of certain performances—most of them were recorded to inspire further works and audiences.

The work of PeerGroupP can be framed as deep mapping because it performs place. That is, it uncovers mini-narratives of spaces with meaning, with memories, and with many (deep) layers of human and

¹⁵ The listening walk is available at: <https://www.peergroup.nl/luisterwandelng/>.

non-human complexity. In a sense, the collective, immersive practices of both Bloom and Sacramento (2017) and the PeerGroup exemplify how the essence of a deep map is to expose the inherent but often hidden entanglements between people and the environment. To researchers, artists, and practitioners alike, deep maps offer the opportunity to start an investigation in a different way. In deep mapping, it is the site observation, the lived experience, and the local people who inform the direction of the research. As a consequence, projects and interventions come from a solid base of existing values and concerns, resulting in more meaningful and long-lasting effects.

Conclusions

Critique has a number of basic principles. First, it examines the (often unexamined) grounds of our decision-making knowledges; second, it situates knowledge in specific historical periods and geographic spaces (rather than being universal for all time); third it seeks to uncover the relationship between power and knowledge; and fourth it resists, challenges, and sometimes overthrows our categories of thought. The purpose of critique is not to say that our knowledge is not *true*, but that the truth of knowledge is established under conditions that have a lot to do with *power*. Critique is therefore a politics of knowledge. (Cramptom, 2010)

In the 1990s, critical cartography initiated a paradigm shift in mapping theory, its methodologies and application. The critique exposed the pretension, manipulation, and oppression inherent to the legitimized and perpetuated ways of mapping up until that point. To academia, this shift was a great achievement, for it has enabled the surgency of new perspectives continuously contributing to advance knowledge. But most importantly, the new paradigm addressed the disproportional influence of science and knowledge production in power relationships. Critical cartography pointed out that maps rarely stand alone, doing nothing, changing nothing. For better or worse, each new method or approach, each new map holds the potential to provoke an impact.

Even the absence of maps speaks much through its silence. Therefore, surpassing the boundaries of formal education, the critique created a framework for activists and the population in general to demand justice, equality, and responsibility from authorities. Now, it is possible to detect abuse of power more clearly, to elaborate and support criticism with stronger evidence. Moreover, the new framework allows for maps to be deinstitutionalized, re-appropriated. Based on the arguments of geographer Nicholas Blomley, Jeremy Cramptom beautifully summarized three principles of critical geography: “1. It is oppositional: it targets dominant forms of oppression or inequalities; 2. it is activist and practical: it wishes to change the world; 3. it is theoretic: it rejects positivist explanation and enhances critical social theory” (Blomley, 2006, quoted in Cramptom, 2010).¹⁶ Borrowing from these principles, the present chapter has suggested two directions, two creative methods for research within the critical cartography framework.

With social cartography, researchers can, first, decide to put people, groups, and *their* respective problems at the centre of mapping projects. Real-life problems inform research questions and the formulation of theories, so researchers are urged to carefully select whose problems to describe, to investigate, and—perhaps—to solve. A picture is worth a thousand words. Social maps give concreteness and a sense of urgency to issues perceived and criticized by the most vulnerable. There is an intrinsic social justice orientation in this method. It can be used as a compelling tool for protest. This confrontational characteristic is potentialized, secondly, by the active involvement of communities in the process of mapping research. Reciprocally, the emancipation of communities assures that knowledge gaps are denounced and properly amended.

Deep maps target a similar, democratic direction, but operate rather differently. By taking the focus away from the drawing, the visual, the unidimensional object of a traditional map, the method can facilitate

¹⁶ In the following page, Cramptom presents his own four principles of critical cartography. Roughly outlined, he sustains that the critique: (1) challenges unexamined assumptions of knowledge orders; (2) uses historicization and spatialization to convey the problematic around certain mapmaking practices; (3) reveals the intrinsic and unavoidable political nature of maps; and (4) is emancipatory in its orientation.

the recognition of obscured narratives and values. Deep maps identify a stronger and softer side of human-spatial relationships that can unite, seduce, conserve, and transform. Through this practice, it is rather the communities that welcome and involve researchers and practitioners, as opposed to the other way around.

Therefore, these two methods follow the principles of critical geography indicated by Blomley and Crampton. They aim to oppose exclusive narratives, reform unjust situations, and enrich cartographic knowledge. In short, they reconnect mapmaking to society. This is the true potential of these creative mapping methods.

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