

Mapmaking and Cartography as Philosophical Matters: An Introduction

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This issue of the *Journal for the Philosophy of Language, Mind and the Arts* perhaps stems from what might be an excess of presentism. It originates, that is, from the consideration of several unrelated events or processes, all of which occurred after the beginning of this century, that have to do with a renewed relevance of cartography and its expressive forms.

By the end of the twentieth century, we seemed to have grown accustomed to a world whose mappable surface was, on the whole, stable and perhaps even exhausted, but at this moment the horizon we are moving towards appears more uncertain. The active war fronts in Ukraine and Russia, and between Israel and Palestine, as well as the potential for conflict on European soil, or between the USA and China, and the significant Chinese influence on the African continent, all foreshadow a disruption of global borders unprecedented since the end of the Cold War.

If we indulge in increasingly less science-fiction fantasies, we can imagine that the new race for interplanetary missions, also promoted by private companies like SpaceX, Virgin Galactic, or Blue Origin, will not only expand the realm of mappability but also its styles and techniques.¹ The same can be said about metaverses and virtual worlds, which promise to become new realms for human life and interactions.

¹ See for instance Nass et al. 2011, Dunnett et al. 2017; about the placemaking process regarding planets other than Earth, Messeri 2016; for a stellar maps history, see Kanas 2012.

Leaving aside futuristic predictions to focus solely on the present, consider how reading a map has become a daily, easily accessible experience since applications like Google Maps entered everyone's smartphones in 2008. Despite Franco Farinelli (2009) linking the crisis of cartographic reason with globalization and the advent of the internet, it seems that the popularization of GPS technologies has actually sparked the modern, Borgesian fantasy of a geographic map perfectly coinciding with the territory it represents. This holds particularly true now that Google Earth's panoramic photography and Street View have been integrated into digital mapping.

Although the events mentioned above have inspired the proposal for this issue, the perspective embraced in the following pages is detached from the contingency of any specific historical moment. The broader premise underlying this collection of essays concerns certain general characteristics of cartographic knowledge, which appear not only peculiar but also relevant to philosophical thought. Firstly, it pertains to the fact that producing a map always requires the application of a rather unique set of techniques and skills: on one hand, mastery of scientific knowledge related to mathematics, physics, and programming is essential; on the other hand, abilities related to art or graphic design such as colour theory or data visualization are also necessary. Furthermore, while pure sciences typically establish general laws that have explanatory value, cartographic disciplines find their purpose in the visual description of spatio-temporal relationships. Lastly, although every map aims for some form of operational objectivity, this objectivity is always achieved through a subtractive process of selecting relevant elements. Such selection renders the cartographic tool inherently biased.

Since all maps are artefacts whose aesthetic qualities convey information that simultaneously engages the fields of ontology, epistemology, and politics, they are objects of undeniable interest for philosophical inquiry. While the debate has unfolded within a specialized field of research, the literature produced on the topic, even in recent years alone, has grown immensely, making it impossible to provide a comprehensive overview. Therefore, what I will attempt to do here, before introducing the content of the essays presented in this issue, is to review some topics that are in some way preliminary to reading.

A good way to navigate the complexity of the questions raised by cartographic practices in philosophical reflection is to consider the broader relationship between geography and ontology. In this perspective, Timothy Tambassi (2018) has observed that the terms in this relationship possess a twofold meaning. If the words Geography and Ontology - capitalized - refer to the academic disciplines we all know, geography and ontology - lowercase - signify something entirely different. In this latter pair, the first term denotes a set of empirical and informal concepts regarding spatiality found in non-scientific

works such as travel books, paintings, magazines, and so forth; the second term, within the realm of IT/computer sciences, concerns “the basic terms and relations comprising the vocabulary of a topic area as well as the rules for combining terms and relations to define extensions to the vocabulary” (Neches et al. 1991, 40).²

The distinction drawn between big-Ontology and small-ontology serves Tambassi to differentiate philosophical language from that of geographic information sciences. While big-O deals with establishing ‘what there is’, small-o consists of a metadiscourse concerning the grammar of a specific language. However, this distinction can be adapted and extended to emphasize that, from an ontological perspective, all maps are interesting in a double sense. Each cartographic object should be considered both as a closed system of signs and as an operational tool that orients us in the world. In the first case, the ontologist will be tasked with listing the kinds of entities included in the map, providing a taxonomy and describing a range of internal relationships between elements. In the second case, the ontologist will be prompted to elucidate the kinds of relationships that the object establishes with the external reality to which it refers. The first type of analysis, which we might call onto-semiotic, will be guided by questions about the nature of the represented space—for example, whether it is homogeneous or discontinuous—or about how certain signs or aesthetic properties convey certain meanings and hierarchies. The other type of analysis, which we might be tempted to define as onto-epistemological, will instead be driven by questions concerning worldview, the practical uses of maps, and the knowledge produced by them both as a whole and as separate cases.

The question of the relationship between maps and reality has been extensively debated by both geographers and philosophers of geography. Drawing on this premise, some scholars have sought to outline a systematic taxonomy of cartographic theories (Kitchin, Perkins, and Dodge 2009; Fernandez and Buchroithner 2014). Daniel Sui and James Holt (2008) identified three distinct trends in the evolution of the discipline in contemporary times. According to their classification, the cognitive-communicative paradigm is the most traditional: maps are seen as images whose ability to convey information is enabled by the isomorphic relationship they maintain with a specific territory. In contrast, the analytical paradigm differs from the former in both construction and purpose: rather than depicting a geographic area, maps are conceived as models for spatializing data sets. This spatialization relies on mathematical-statistical

² Neches and his colleagues’ definition of ontology is just one of the earliest formulated within the field of computer sciences. For an extensive review of alternative definitions, see Tambassi (2018, 23).

theories and technologies associated with algorithmic computation. Finally, the critical paradigm sets itself apart from the others by rejecting a fundamental assumption shared by both: the claim to objectivity in cartographic representation. Inspired by Marxist and post-structuralist theories, this approach interprets maps as social constructs that inevitably reflect the power dynamics under which they are produced.

Similarly to Sui and Holt (2008), Michael Peterson (2002) also distinguishes three phases in the development of modern cartographic discipline. They coincide with those mentioned earlier: ‘cartographic communication,’ ‘analytical cartography,’ and ‘power of maps’. However, Peterson’s taxonomy identifies two additional paradigms. The first is what he calls the paradigm of geo-visualization, which pertains to a theoretical and methodological revolution. Maps cease to be conceived as spatial representations and are instead studied in relation to the users who interact with them. Central to the debate are the perceptual, cognitive, and semiotic processes that maps activate as tools for orientation. The second paradigm pertains instead to a technological revolution: the advent of the Internet. Cyber-cartography represents, in Thomas Kuhn’s (1962) terms, a paradigm shift both because, for the first time, the storage and display functions in maps can be separated (Ormeling 2007), and because users also become creators through the sharing of real-time data (Taylor 2005).

Among the distinctions made to categorize cartographic theories, the framework formulated by Kitchin, Perkins, and Dodge (2009) stands out as crucial for understanding the current orientation of the discipline. The three geographers divide map studies into two main groups: one focuses on representational cartographic thinking, and the other on post-representational thinking. Theories in the first group conceive maps as images that depict a certain territory in varying degrees of distortion. This ensemble encompasses both empirical cartographies and those critical cartographies that consider the distortions caused by the context of map production to be potentially reducible or surmountable (for instance, those with Marxist orientations). Theories in the second group, on the other hand, view cartography as a localized network of inherently interconnected practices, including production, reproduction, distribution, and use. In this framework, the notion of objectivity is fundamentally rejected, placing a strong emphasis on the relationship of co-determination among the user, the tool, and the territory within specific social systems.³

Taking up Heideggerian-inspired categories, Jeremy Crampton (2003) observed that the shift from representational to

3 On the topic of non-representational theories, also refer to the now classic work by Thrift (2007).

post-representational cartography implies an elevation of the discipline from the ontic to the ontological plane. In the former case, the notion of a stable reality which is knowable in itself stands as a foundation of cartographic design; in this framework, moreover, maps are conceived as tools that, detached from the territory, aim to depict it from above. In the latter case instead, maps are seen as agents thrown into the world, technologies that contribute to creating reality along with the system of cultural practices within which they are embedded. Freed from metaphysical foundation, post-representational theories always imply a critical rethinking of their conditions of possibility and those of their objects of inquiry.

The transition from a science of cartographic image to a pragmatics of cartography has demanded a redefinition of the concept of map. However, more than just this is at stake here. If Baudrillard's infamous sentence (1980, 166) that the map generates the territory holds true, then alongside each paradigm shift in cartography, the very nature of the environment in which the human species lives and interacts changes. A precursor to a new perspective on spatiality is certainly Yi-Fu Tuan (1977), who opposed the classical geographic identification between the concept of space and that of geometric surface. As one of the founders of humanistic geography, Tuan interpreted the notion of space phenomenologically, defining it in terms of a lived experience generated by movement. Following in a similar vein, Jacques Lévy (2008, 80) argued more recently that geographic space cannot be reduced to Euclidean space because it is always shaped by culturally non-spatializable phenomena. In even more recent times, Frédérique Aït-Touati, Alexandra Arènes, and Axelle Grégoire (2022) have declared it necessary, in the era of the Anthropocene, to move beyond the grid of Cartesian information. Space should no longer be conceived merely as a receptacle for living beings but rather as the outcome of their actions (2022, 21). Aït-Touati suggests that maps should be designed accordingly.

Defining the space of the map not in terms of an isomorphic surface but as a device that produces reality effects necessitates a shift from from an ontological to a political perspective. I have already stated that critical theory of cartography has served to interpret each map as an expression of the power systems within which it is embedded. Many scholars have also analyzed the relationship between the development of cartographic technologies and the imperialistic drive of European powers in the modern era (Farinelli 2009; Kitchen, Dodge, and Perkins 2011). The fact that mapping is an activity of control and domination is therefore well-established. What can be added here is a reflection on how this same issue has unfolded after the digital revolution, at a time when being connected has become a normal condition of life for the majority of humans.

The thinking of Shoshana Zubhoff (2019) certainly comes to help. Since digital cartography relies on satellite technologies, GPS, and GIS, it represents the perfect example of what she has defined as ‘surveillance capitalism.’ Applications like Google Maps collect and analyze a vast amount of personal data regarding users’ movements and preferences. This data is subsequently employed to predict and influence future behaviours, thus fuelling markets for behavioural futures (Laidler 2019; Gentzel, Wimmer and Schlagowski 2022). Adopting this interpretative framework it can be observed, on the one hand, that the digitalization of cartography is in continuity with the biopolitical project described by Michel Foucault (2004a; 2004b) in his lectures at the Collège de France. On the other hand, however, a significant change in the subjects overseeing control must be acknowledged. While the micropowers studied by Foucault still passed through public institutions that managed the health and safety of the population, today access to data extracted from digital maps is controlled by private companies whose main purpose is to retain their community’s loyalty.

Despite cartography being a fundamental model and tool of surveillance capitalism, it would be wrong to speak of the discipline solely in hegemonic terms. On the contrary, it cannot be emphasized enough that in this century, the operability of data has reached unprecedented levels of democratization and decentralization. Indeed, the extensive opportunity for users to participate in map creation has led to the emergence of diverse forms of digital counter-mapping alongside official cartography (Specht, Feigenbaum 2018; Fourmentaux 2022; Pignatti 2023).

If critical cartography regroups the research orientations aimed at uncovering the cognitive and cultural biases intrinsic to the discipline, counter-mapping is an activist practice whose *raison d’être* lies in overturning the power dynamics that construct the dominant cartographic gaze (kollektiv orangotango 2018; Zwer, Rekecewicz 2022). From this viewpoint, visual art has served and continues to serve as a laboratory for developing both new forms and technologies of counter-cartography (Reddeman 2018; Moro 2021). Without delving into the wide range of works produced in recent decades, allow me to mention just two examples.

In the eight-channel video installation titled *The Mapping Journey Project* (2008-11), Moroccan artist Bouchra Khalili illustrates the migratory routes across the Mediterranean through the firsthand accounts of refugees from North Africa, the Middle East, and South Asia. Using a traditional Mercator projection map, the interviewed subjects trace with a marker the convoluted paths of their exodus. The presumed objectivity of scientific representation and the clarity of national borders are disrupted by personal markings that reveal otherwise silent geopolitical relationships.

Between 2016 and 2018, Jordanian artist Lawrence Abu Hamdan collaborated with Amnesty International and Forensic Architecture, a research group at Goldsmiths, University of London. The purpose of this collaboration was an investigation into the torture carried out in the Saydnaya prison after the Syrian revolution of 2011.⁴ Through recording the auditory memories of some survivors, who were forced to remain blindfolded during detention, the artist contributes to remapping the architectural structure of an otherwise unknown and inaccessible place. In works such as *Saydnaya (the Missing 19dB)* (2017) and *Walled Unwalled* (2018), Abu Hamdan reworks the collected data by integrating them with other sound clues recorded during the investigation. The cartographic practice is employed outside institutional uses, in ways that are nonetheless methodologically as rigorous as an investigative study (Gronlund 2018).

The freedom with which visual art has used the techniques, concepts, and metaphors of cartography demonstrates the flexibility of the discipline and its ability to transcend its own boundaries. If up to now I have attempted to review some of the issues that contemporary cartography has posed to philosophical thought, I would like to conclude this brief overview by showing how the cartographic gaze has infiltrated other fields of knowledge.

A first field of contamination is the theory of mind. Already in his *Traumdeutung*, Sigmund Freud (1900) proposed a description of the psyche in terms of a map. On one side, the Viennese physician renewed the topological theories of his time to spatialise immaterial psychic functions; on the other, he traced the modes of connections between the conscious and unconscious activities of the mind, drawing inspiration from stratigraphic maps of archaeological sites (O'donoghue 2011). Freud's cartographic perspective was then further radicalised towards physicalism in contemporary neuroscience. In fact, the projects on which they are based, at least ideally, foresee a complete localization of mental functions through brain and DNA mapping.

A second area of convergence is that of semiotics and media theories. We have already seen how every map can be also regarded as an image. Conversely, images can be studied in the perspective of cartographic logic. Among all the examples that could be given to illustrate this point, the most relevant still today is Aby Warburg's *Atlas* (1929). Through this formidable visual device, the German historian sought to demonstrate the persistence of classical iconography in Western culture. In his tables however, the reasoning is not entrusted to language but to the spatial relationships that connect and compare pictorial representations from disparate epochs. Over time, there have

⁴ <https://forensic-architecture.org/investigation/saydnaya>.

been countless comments and projects inspired by the Warburgian atlas. Among the recent ones, two are dedicated to a cartographic reading of cinema: *Atlas of Emotion* by Giuliana Bruno (2007) and *La pensée cartographique des images* by Teresa Castro (2011).

The third and final ground for dialogue is what Marcello Tanca (2017) called ‘geography in philosophy,’ that is, the part of philosophical thinking inspired by notions and theories borrowed from geospatial disciplines. Even limiting ourselves to cases of particular interest in the context of this volume, we cannot avoid starting with Immanuel Kant. Since the philosopher held forty-seven courses on physical geography at the University of Königsberg between 1756 and 1796, he is rightfully described by Franco Farinelli (2004) as a geographer who applied his knowledge to human understanding. Moving swiftly to the contemporary era, consider then the prominence of geographical dimensions in the so-called ‘spatial turn’ of critical social theories (Soja 1989). It marked the entire postmodern culture and a true break from nineteenth-century historicism: it is perhaps with the birth of a new geographical passion that the century we are living in truly began. Finally, Gilbert Ryle (1962) deserves a prominent place in this *excursus*. He did not simply draw inspiration from geography to develop his own metaphysical system but argued that philosophy itself should be rectified into conceptual cartography. However, given the complexity of cartographic thought, it is fair to conclude with a question: what kind of cartography for philosophy?

Following what Jacques Levy (2016) has termed the cartographic turn in social sciences, *The Art of Mapping Between Land and Mind* delves into the intertwining issues I have sought to outline in the previous pages. Although the papers published in this volume come from diverse perspectives and backgrounds, two main issues emerge. The first concerns how the aesthetic properties of maps convey a wide range of cognitive, cultural, and political meanings. The second issue pertains to how the visual arts contribute to the reflection on cartographic thought, influencing both its methods and motivations. Both issues are addressed sometimes descriptively, sometimes prescriptively. On one hand, there is a focus on how maps are made; on the other, there are suggestions on how they should be made.

Essays dedicated to the discussion of general topics are interspersed with others focused on individual case studies. Ideally, the volume is divided into four sections. Embracing the point of view of both the philosopher and the geographer, the first one sheds light on some issues concerning the relationship between epistemology and cartography (Kukla; Costantini; Tanney). The second addresses mapmaking as an art form or, conversely, considers maps from the perspective of their aesthetic properties (Tanca; Haugdal; Török; Ogun-diwin; Elhaik). The third focuses on the digital condition of today’s cartography, often from a genealogical perspective (Tschochohei;

Quaranta; Keller). Finally, the last section includes two contributions which, despite their more experimental status, represent attempts to guide cartography toward its future (Bosca; Ianniello).

To open this issue, there is a special essay that in some way acts as a bridge to the previous issue of JoLMA dedicated to non-human cognition (Batisti 2023). Since the paper does not explicitly address the topic of cartography, it might be helpful to explain the reasons for its inclusion in this context.

In “Semiotics After Geontopower,” Elizabeth Povinelli offers a generous précis of her upcoming book. Continuing her exploration of what she calls geontologies (Povinelli 2016), the anthropologist critically examines the alliance between protest movements for the rights of nature and scientific theories that attribute cognitive/communicative abilities to non-human forms of existence. Povinelli views this alliance as based on an effort to universalize a certain notion of the mind: a project that, despite its premises, is in continuity with the colonial and Eurocentric perspective typical of modern philosophy. As an antidote to this universalist tendency, which affects even openly anti-humanist theories, Povinelli advocates for the construction of thought systems that acknowledge their own regionality. This emphasis on the need to localize any speculative position strikes as a foundational principle for the cartographic thinking of the future.

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