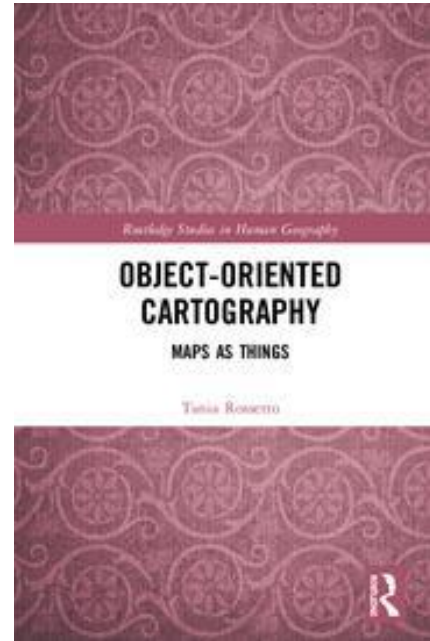


Tania Rossetto:

Object-Oriented Cartography: Maps as Things.

London: Routledge 2019



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(Re)tuning our attention to maps

Whether out in the streetscape, up on walls, pored over in libraries, museums or galleries, printed in books and comics, shown on TV and film, displayed on smartphones or computers, readers will be familiar with the alluring and elusive qualities of maps. These are the qualities that spark interest and a sense that one can never fully know maps, no matter how often we might return to them. Many will be familiar with the feeling of having been seduced by the intrigue and enchantment of maps in their own lives, when one look is not enough to take it all in. Through her personal story with maps, Rossetto's innovative new book encourages us to keep these qualities in focus throughout. It invites us to consider the possibility that maps are *much* more than the representations we know them to be.

In *Object-Oriented Cartography: Maps as Things*, Rossetto asks us to (re)tune our attention to maps; to focus not only on the representational cartographies of maps, but to consider maps as objects, with their own lifeworld and life course. Through the lens of an object-oriented ontology (OOO), which is a relatively recent strand of new materialist philosophy that explains emergences by focusing on objects in and of themselves rather than the relations between them, Rossetto argues that there is much more to maps than the graphical representations that are inscribed, printed and displayed on their surfaces. If we focus our attention beyond the representational map-territory relation, she posits, maps show us that they have a 'liveliness' that is independent from, and *only sometimes* intertwined with, our use of them.

As Rossetto puts it:

[T]his book poses the question of the object as a question of the life of cartographic objects, including maps within the universe of things to which OOO directs our attention. I am not questioning the objectivity/non-objectivity of maps; rather, I am embracing the objecthood of maps...

(p. 6)

The book is made up of eleven concise chapters that are split into two thematic sections. The first three chapters situate Rossetto's object-oriented cartography within materialist and *new* materialist approaches to map studies, before going on to situate the thesis within and beyond a diversity of OOO frameworks, and concluding with a discussion of how this links to, and diverges from, recent work on performance and practices (known as 'post-representational cartography') in the field of critical cartography. It is important to note that this is not a book about applying OOO to recent ideas in critical cartography. Rather, it represents an experiment in how to synthesise the two fields with the much longer traditions around the materiality of the map in map studies. As Rossetto makes clear early on:

I am not introducing an 'object-oriented map theory' by strictly and coherently adhering to the theorisation of a single author or a philosophical current. Rather, I am experimenting with an object-oriented attitude in approaching and researching maps.

p.22

The remaining eight chapters represent a methodological approach (and perhaps a toolkit) for studying maps under these theoretical conditions. These chapters are empirically informed theoretical interventions that draw on Rossetto's own research and experiences of using a variety of methodological approaches to studying maps. Notably, these approaches are assembled from techniques and writing devices more likely to be seen elsewhere in photographic, literary and media-art theory, cultural and post-phenomenological geography and object-oriented philosophy, rather than in the pages of 'conventional' cartographic writing. They include photo-essays and repeat photography, it-narration, object autobiographies and object interviews, ekphrasis, vignettes, interviews and autoethnography. The breadth of methods on show here is not only impressive, but it also does much to demonstrate the value of the contribution by laying the groundwork for future work in this area.

The book will appeal primarily to readers with an interest in critical cartography, post-representational cartographies, mapping practices and map studies. It should, however, also attract a wider audience in cultural geography, where interest in flat and object-oriented ontologies and post-phenomenology has grown rapidly in recent years, and it will hold much value for those interested in methodological innovations in visual studies. Finally, it should come as no surprise that the book will interest OOO, New Materialist and Speculative Realist thinkers for the reason that it extends the often metaphorical use of maps in these areas and puts this theory into contention with the materiality of maps in a way that these fields have not done to date. In this review essay, I seek to not only unpack some of the theoretical strands of the book, but also to question them and put them to work in the context of where critical cartography could go next.

Withdrawals and moments of particularisation

Central to the book's thesis is the notion that we can only ever hope to get a glimpse at the whole map - there are parts of a map's lifeworld that are always hidden from our view. Using the work of key OOO thinkers (Graham Harman, Ian Bogost, Jane Bennett, Levi Bryant and Timothy Morton), Rossetto argues that maps are objects that can *withdraw* or *express* their capacities from or to others (map users, other objects, forces). For example, if a wooden map begins to show signs of rot on its surface, or a digital map display has crashed, it can be said that these maps are expressing the withdrawn capacities that they have always had, but not yet realised. In other cases, the withdrawn capacities of maps will be expressed, but we – the human observer - will be none the wiser as to what they are because they do not matter to us; they are expressed for *something* else. The key point here is that although maps are the product of human culture(s), they have a life outside of our use for them.

Through the methodological approaches outlined above, Rossetto shows us practical ways in which we might catch glimpses, insights and a sense of the 'moment[s] of particularisation' (p. 40) at which the hidden side of maps is revealed to us. From my reading this is an important phrase that should encourage post-representational cartography to think beyond maps-as-becoming, and instead to think of maps-as-becoming's that often stutter into existence rather than going smoothly. It is these stutters, these momentary particularisations where the recognition of a map's capacities in a context is briefly stable, that deserve further attention. The phrase also raises a question to ponder: are maps only *mapping* when put into relation with other objects and practices that draw out and realise their withdrawn capacities for mapping? If so, how do we conceptually handle objects with the capacity to be mapping objects in the cases where these capacities remain withdrawn and are not expressed? Rossetto wants us to explore these questions and follow maps through their lifecycle to examine the multiplicity of ways that maps *might* reveal themselves to us and others. In this regard, the book is not that interested in focusing on their moments of particularisation for mapping in the conventional sense of a tool for navigation and other territorial practices but is instead interested in the other capacities a map may express.

Photography is used often throughout the book as a method for exploring moments of particularisation. In Chapter 4, a photo-essay is used to reveal the surface of a You-Are-Here map in central Padova, Italy, without focusing on its geographical representation. Rossetto reflects on how the practice of photographing the map surface shows its weather worn cracks and its capacity to be a point of attraction for moisture and falling leaves to rest on. In Chapter 7 photography is used to illustrate the 'it-narration' of the Fonteuropa map in central Padova, which is a literary device used to give voice to and reveal the inner life of the once popular and now deteriorating mosaic map that sits in Largo Europa square. In Chapter 11, Rossetto employs a method of repeat photography to illustrate how a street map in central Padova reveals its entanglements with navigators, graffiti taggers, posters and the changing urban environment, which are ultimately representative of its decay over a 6-year period. Across these chapters and more subtly throughout the book, photography is usefully deployed as a visual means to reveal the spatio-temporalities of maps expressing themselves and their relations to human and non-human agents. Following the work of Tim

Ingold (2015), it is also a particularly effective way to visually describe how all things have life trajectories ('lifelines') which become entangled, knotted and loosened amongst others in the meshwork of places. In these cases, these maps could be said to be enmeshed in place of Padova, occasionally (but not permanently) entangling themselves with the lifelines of that which makes up mapping practices and the urban environment.

Aside from and sometimes combined with photography, the book also explores how literature, literary and imaging devices can be employed as methods for sensing and drawing out moments of particularisation. For example, by focusing the *The Road*, by Cormac McCarthy in Chapter 6, Rossetto demonstrates how literature can provide a portal of access into how maps withdraw and express themselves to us in the (dystopian) world of the book. Quoting extracts that foreground the map in the novel, she recognises how maps can express themselves as navigational devices in one moment, and as objects with capacities to bond the protagonists or create a sense of loss in another. In Chapter 9, this theme is continued when Rossetto uses autoethnographic self-narrations from four map practitioners to evoke how the practice of working with maps is an always-emerging dialogue between users and maps. These chapters are particularly effective in showing that the process of using and working with maps is a process premised upon an ongoing and sometimes exhausting effort to know the map and its capacities in each context. By (re)tuning our thinking about maps through these methods, Rossetto argues that we can begin to see that there are many other interesting and powerful ways in which maps act in the world that go beyond the all-seeing and socially constructed representations that have received most of our attention to date.

Map objects and their (digital) relations

A further theme running throughout the book is how object-oriented cartography can be situated within the debates around relationality, agency, emergence and objecthood that we see across the diverse strands of New Materialism and flat ontological philosophy. This is dealt with explicitly in Chapter 10, where Rossetto uses ethnographic vignettes of in-car navigational events to situate maps as objects in their own right, with withdrawing and expressive capacities, and as and relational objects that become inter-related with other human and non-human objects throughout their life course. As she writes:

A silent stillness: My husband driving, my daughter sleeping, my son gazing at the screens, the two maps mapping and me attending to the scene. Strangely, there is no sense of fusion of human-map-road. No sense of technological extension of the body of the driver, digital unconsciousness, fluid and naturalised interaction, or virtual immersion in the outer environment. In other words, no sense of navigation, but instead a sense of cohabitation. In that moment, we are not bundled in a mesh or assemblage: We are just six entities in a vehicle. The two devices definitely do not work together. Rather, they are strangers each one to the other. The fact of functioning in parallel somehow enhances the individuality, diversity and specificity of each device. The coexistence of the two navigational objects produce an intensification of their autonomous presence. They do exist and are strangers to us. (p. 119)

The vignette highlights that there is not always an obvious *togetherness* of the objects in a navigational scene. This begs the question, is it even a navigational scene at all if a driver is not actively responding to the map, but rather attuning their attention as and when it is necessary? Rossetto uses recent post-phenomenological theory in cultural geography (Ash & Simpson, 2016, 2018) with Graham Harman's insistence that emergence in OOO is reliant upon things being able to maintain individuality, to suggest instead that this is navigational scene in waiting, a scene whereby the mapping capacities of the technical objects have withdrawn into themselves, ready to be realised once these capacities are called upon, if they are called upon. In this framework, Rossetto considers the navigational map objects in this scene to have both individual qualities as well as the potential for relational entanglements with other objects. Extending this further, we might also think about how the capacities of these withdrawn map objects are obscured by the human view exposed in the ethnographic vignette. There is, for sure, a recognition of the on-going relations between these map objects and others that the viewer cannot see, for example the periodic connections they make to GPS and cellular receivers and relays.

This is perhaps the most radical stance in the book, and one that may distance those who grasp an emergent ontology as the relations between objects and those that place importance on the objects themselves. Nevertheless, by working in-between these positions Rossetto does open new space for critical cartography, which encourages us think about maps as both relational ontogenetic practices (c.f. Kitchin et al. 2013) *and* as ontological beings.

This theoretical contribution is especially useful for thinking about digital maps as ontological beings in the sense that what we see as users is only a small part - a surfacing - of the ways in which their underlying components, of which there is potentially many, withdraw and express their capacities to each other when bringing a map to life for users. Chapter 8 uses the example of how Google Earth *appears* to us in order to highlight that there is a lot going on 'under the hood' of digital maps, which might be teased out and sensed by methodological approaches that focus on 'the material foundation of cartographic digital technology' (p. 92, after Leszczynski, 2009). Building on this and drawing from elsewhere in the book, it-narration or self-narration methods could be especially valuable methods for sensing the withdrawing and expressive capacities of cartographic files as they circulate between map developers and users through computer code and networked technologies.

There are also many more sensing methods that we might consider developing here to get glimpses into how maps and computing devices reveal themselves to each other and other objects. As digital mapping systems continue to be developed with machine learning techniques, for instance as they are in the development of self-driving car lidar mapping systems (see Hind, 2019), it is also important to think about how digital mapping software *see and act upon* what they perceive to be the withdrawn and expressive capacities of the material environment. Acting upon an expressive capacity of an object in the material environment, when sensed by a self-driving car's lidar mapping system and not a human, might mean the difference between a machinic mapping system that *sees and enacts* a car to avoid a potentially dangerous obstacle and one that doesn't, which could result in a crash

that it did not see coming even if the passengers in the car did. The hidden workings of machine learning, and especially unsupervised machine learning, are known to obscure from human view how these techniques make decisions that have real impacts in the world. Employing object-oriented methods to get glimpses into these hidden workings could offer a useful way to explore and bring to the surface the ethics and politics of digital cartography increasingly produced with only *some* (or no) human supervision. Indeed, lidar mapping itself could be developed as an object-oriented method if we were to adapt some of the techniques Rossetto describes. Combining self-narrations with repeat photography (or screenshots of lidar mapping) could be used to narrate how lidar sees the material world.

Running in parallel to the potential for Rossetto's methods to be used in novel ways to draw out the technical and political expressions of digital maps, these methods might also be developed to focus our attention on the enchantment of digital maps, which is something we have seen elsewhere in digital and A.I artworks that invite us to think about the 'liveliness' of machines (Miller, 2019). The enchanting qualities expressed by maps are a theme explored throughout the book, mainly through a focus on 'cartifacts', which Rossetto suggests are cartographic objects better described and analysed as artworks or geovisualisations than conventional maps. Cartifacts do not claim to represent the spatialities of the world, whereas cartography and mappings do. They offer a third way of thinking about maps, cartography and representation that deserve further attention because they do things in the world that mapping and cartography don't and as such, they offer a particularly useful way for understanding the thesis that maps can be enchanting. Digital maps have always had the capacity to express enchanting affects (see Wilson, 2017), but recent advances in A.I and 3D rendering software have changed again what the capacities of map objects are and how they can be withdrawn and expressed to the human observer. As digital maps continue to evolve from the 2D form into dynamic photo-realistic 3D images and become navigable in numerous ways by different technical interfaces (smartphones, medium and large touch screens, virtual reality headsets, and *still* the humble mouse) their capacity to express enchantment that is experienced by the user/viewer also continues to evolve. This is a space ripe for investigation, where I can imagine all manner of ways in which the object-oriented methodological approach could be used in conjunction with the performative and practice-led approaches written about by critical cartographers in recent years. That said, and digital technologies aside, these are also avenues to explore in relation to other mappings too, where these themes are rarely explored together (see Della Dora, 2009a, 2009b for exceptions).

But what of the power and politics of object-oriented cartography?

Object-Oriented Cartography: Maps as Things breathes life into map studies and offers a refreshing contribution to the field. In each chapter, Rossetto strives to combine theory and method in ways that are experimental, but accessible. Indeed, one of the strengths of the book is that the methods used could easily be replicated by readers with a little patience and practice. Ultimately this leads to a book that invites further thinking and investigation. Aside from these scholarly contributions, readers will also recognise the work as a personal book, which tells us much about how Rossetto's daily life in Padova is enmeshed with a variety of maps, mapping practices and 'carto-facts'. This not only provides an interesting

narrative thread for the book that can be at odds with the sometimes-dry literature in the field of map studies, but it is also used expertly as a writing device that breathes life into her thesis that maps and our daily lives co-exist in an emerging world. By offering us this glimpse of her own life, Rossetto invites us to see maps as she does - objects with vitality with enchanting properties, rather than just as utilitarian and instrumental devices. This is a trend that we should endorse if we want to push the envelope and explore the possibilities of an experimental critical cartography that seeks to be 'more-than-critical' (p. 4) and go beyond the established practices of *deconstructing the map* vis-à-vis Harley and his successors.

This is, of course, not to say that this line of enquiry is now fruitless, but rather to say there is other ways in which the *power of maps* is produced, used and circulated (cf. Edney, 2019) if only we paid further attention to maps as objects and not simply as map-territory representations of the world. In this sense, Rossetto's book is particularly provocative in the way it asks the reader to grapple with the question of how the power of maps can be understood from the perspective of an object-oriented cartography. Nevertheless, a minor critique of this book is that it does not always go far enough in exploring how an object-oriented cartography can be used to further our understanding of the map in terms of power and politics that might emerge from its expressive capacities. Although Rossetto's intention is to go in a different direction, as a way to turn a new page for critical cartography, I for one see much potential in exploring how an object-oriented approach can be used to expose the power and politics that emerge when the non-representational properties of maps express themselves and become entangled with other human and non-human objects and practices. The claims that critical cartography has largely been preoccupied with the top-down power-politics are true, but this does not necessarily mean that we cannot discuss the liveliness of maps and these concepts in the same breath.

Chapter 7's focus on the Fonteuropa map begins to do this by using it-narration to explore how the maps' capacities are expressed in relation to the local politics and urban changes of Padova, but this could have been teased out further in other chapters to expose how maps draw out the withdrawn capacities *of us* inasmuch as we can sense the expressive capacities of maps. Returning briefly to Chapter 10 on in-car navigation, we can all relate to instances when the sheer *presence* of the map has articulated minor politics and power relations amongst riders during long car journeys. These elements could have been explored further here, although admittedly the ethnographic observations might not have revealed these instances. Moreover, we might think more about the politics and power relations that emerge in the production of maps, amongst cartographers who sense and act upon the expressive capacities of maps in different ways to their peers, their managers and the end-users. Or the politics and power that emerge as digital maps increasingly want to draw out *something* from us: namely location data laden with economic and surveillant *potential*. I certainly agree with Rossetto that the *power of maps* should not necessarily be confined to the representational properties of maps, but I am left thinking that power and politics do have a central part to play in 'more-than-critical' approaches to map studies, even if it is not the approaches presented in this book.

If anything, these critiques demonstrate my active engagement with Rossetto's thesis, which should be regarded as a compliment of the highest order. My hope is that readers will

find the work as provocative, challenging and deeply interesting as I did. If one of the aims of scholarly book is to push for new directions, Rossetto book should be regarded as more than a footnote for critical cartography. Through its experimental framework, innovative methodologies and personal narrative, this book does push the envelope, which I hope will (re)tune others' attention to an object-oriented cartography.

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