

- Response -

SURFACING CARTOGRAPHIES

Encountering maps at the intersection of carto-spheres and water-spheres

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In a recent intervention, map artists and activists Cristina T. Ribas and Paul Schweizer from the collective *orantango* (2022, p. 20) proposed “hydrocartography” as a way to integrate the aesthetic force and ethics of water in the “generative unpredictability of any cartographic encounter.” Through shared artistic practices with workshops participants, they react to “arid cartography [which] tends to depict water as a knowable separate element, enclosed in its rightful domains – rivers, lakes, oceans – visualized with graphic elements such as static points, lines, and demarcated surfaces.” Ribas and Schweizer (2022, p. 20) suggest that their “hydrocartographic project acknowledges both the world’s fluid cognition and the cartographer’s becoming in these flows.” During the workshops they organize with participants in order to open up a visceral appreciation of the waters of the world, they start with the idea of becoming bodies of water, through exercises of body mapping and inward walks following imaginary currents. The hydrocartographic artistic experimentation proceeds with a collective walk on the margins of a river, to become part of both waters and maps, and to “wet the cartographers themselves” (p. 22). In this artistic and militant activity, hydrologic and cartographic imagination are woven together in a highly evocative manner. To some extent, in my view, a similar gesture can be seen at play in the ‘Interior Aquapelagos’ Debates article by Philip Hayward and Francesco Visentin (2025).

In their piece, Hayward and Visentin elaborate on internal waterscapes in conceptual, representational and practical ways, testing the use of ‘aquapelago’ as a possible frame to grasp the multifaceted realm of inland waterways. Saliently, in doing so, they engage deeply with cartographic representations to discuss their proposal. A series of historical cartographic visuals is put together to let the reader *enter* the watery dynamics and complexities of the region around Udine, which is the empirical laboratory chosen for such a theoretical proposal. The introduction to Hayward and Visentin’s conceptual journey starts with a flatly functional image taken from Google Maps that is meant to provide the reader with an orientation tool. The caption says, ‘Map of Udine’s position and the boundary of Friuli-Venezia Giulia region’. Here the map works as a plain device with an apparently simple locative rather than meaningful function. While the subsequent historical visuals are collected by the authors to advocate for the centrality and agency of water, this first map is not mobilised to legitimise a water-centric attitude. In this regard, while the historical maps are *enlivened* as ways to be attuned to water-spheres, this first locative image is essentially presented in a ‘dead’ manner, outside of the discourse the authors offer in the main sections of their article.

Past representational devices, once taken together, are meant to suggest that waterways are always evolving in time, oscillating from the natural and the cultural, and therefore are inherently mobile. In contrast, the first modest map seems to validate a common notion of maps (and land-water features) as immobile. Critical readings have often stressed the fixity inherent to the cartographic language, mostly considered as the absolute expression of immobility. Maps are indeed more straightforwardly seen as verbo-visual texts that block and freeze movement in both time and space. The mobile quality of cartography still sounds paradoxical for many. Yet, in a recent work built around the critique of a set of preconceptions and common-sense prepositions about cartography, map historian Matthew Edney (2019) has affirmed that nothing about mapping is fixed and stable. Indeed, we could consider the nexus between movement, or mobility, and maps in different ways. Once we adopt a performative, and post-representational point of view, we start seeing their multiple mobilities in terms of navigation, animation, circulation, reading processes and remediations (Lo Presti and Rossetto, 2023). Maps are also powerful images that attempt to convey the movement of both human and non-human things and assemblages, as in case of water-worlds, through different cartographic techniques.

Commenting upon Afro's 1930s mural featuring Udine and Friuli, Hayward and Visentin suggest that this mappy representation, which includes an oblique view and a plan of the city, seems somehow immobile in its current location in a museum. The mappiness of the visual is accurately described by the authors in its multimodality (both map and view) and symbolic meaning (the centrality of the city for the region). Hayward and Visentin note how Afro's painting provides no emphasis on the watery features of the city and region. The city plan in the upper left corner does not show canals, while the painted regional landscapes scarcely acknowledge for the presence of waterways, with exception of the icastic presence of the Tagliamento River that flows into a magnified and chromatically extolled Adriatic Sea. As they note, the symbolic presence of the Sea is overemphasised in comparison to the inland, thus undermining the role of internal waterways, a fact that mirrors the perception of waters in coeval time. Subsequently, Hayward and Visentin proceed by considering other representations that give justice to the liquid vitality of the land in the previous centuries. A 16th-century map by Paolo Forlani is interpreted as a demonstration of the importance of the system of rivers and canals for the socio-economic and political life of those territories in that period. Finally, the 17th-century elevated representation of the city of Udine attributed to Joseph Heintz the Younger brings the authors to point out how the network of canals inside the city walls (in the absence of a river) is featured through *chromatic* emphasis (Seeman, 2020). They contend that this city perspective "captures the city at its most aquapelagic before canals fell into decline" (p. 22).

As we see, the description of such cartographic visuals are woven together with interpretations of the geographical features they represent and the socio-cultural views they reflect. Moreover, these images are further *mobilised* when the authors advance their theoretical proposal in dialogical form. Maps are recalled, re-interpreted and called into action to feed thoughts and sustain arguments. For instance, the prominence of the sea in Afro's mural is metaphorically evoked by Hayward to acknowledge Visentin's observation that wet ontology has been much more linked to marine waters than to inland ones. In his turn, Visentin remarks about the presence of Tagliamento but the lack of minor rivers, streams and canals, stating that Afro's image was (perhaps unconsciously) reflecting the terra-centric cultural and material outcomes of the huge drainage works carried out in the region in those decades. While describing, decoding, interpreting, revealing and dismantling the messages and cultural references of such historical maps, the authors literally move through them. Strikingly, the map also brings them outside the cartographic space, for

instance when, describing Heintz the Younger's visual, in footnote 16 they adopt a zoocentric perspective, namely that of beavers.¹

As Jacob (1992, p. 2, p. 8) observed, although “maps establish a new space of visibility by their distancing of the object and their replacement of it by a representational image,” the map is primarily an object in itself whose effects “result from its materiality, from the specific pragmatics of its viewer's body and gaze.” The view from above, which is inherent to cartography, presupposes a space of visibility that implies a displacement of humans. However, as Jacob argues, this displacement, so typically attributed to cartography, paradoxically coexists with the fact that maps can induce a reverie in their viewers whenever their eyes slip freely over their surfaces. The map, thus, is a device fundamentally based on an act of distancing, but it is also a surface that is open to close encounters with map practitioners. As again Jacob states, “the map is never an isolated object independent of a desire to communicate, of the transmission of knowledge, and of a semiotic intent in the broad sense of the term” (p. 101). Thus, Hayward and Visentin are not just in dialogue between themselves, but in dialogue with the maps they display, compare, and reflect upon. And they are also in dialogue with the readers through such maps, when they explicitly invite us to ‘enter the region/enter the history’ with maps as travel companions. This vivid triangulation and invitation is palpable when reading their cartographic prose. Yet, again, the first locative image is apparently left outside from this rich dialogue and confrontation. Why? That map is a less evocative, less iconic, and definitely less volumetric one.

Indeed, when dealing with watery and aquapelagic features, volume, three-dimensionality and the sub-surficial acquire great importance. Marine spaces are a priority here. We just need to think about the role of sub-surficial mapping in knowing seafloors. The epic enterprise of ocean cartography (Makowski and Finkl, 2016), including figures such as Marie Tharp, who (together with colleague Bruce Heezen) was a key figure in transforming existing seafloor data acquired with sonar tools in visual form (and thus indirectly confirming the theory of continental drift), has been now celebrated (and also popularised).² Tharp's famous 1977 world ocean floor panorama, painted by Heinrich Berann, was the first to transform ocean seafloors into tangible objects (Figures 1 and 2).

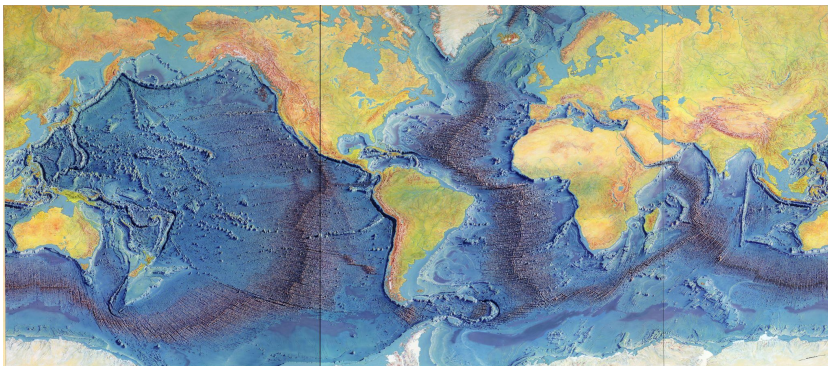


Figure 1 - Manuscript painting of Heezen-Tharp World ocean floor map by Berann, 1977.
(Source: Wikimedia commons)

¹ For a cartographic perspective on animal agency see Bushell, 2024.

² See Romano & Chiocci, 2024; Burleigh, 2014 and Wan (2016).



Figure 2 - Pages from an illustrated book celebrating Marie Tharp's volumetric mapping of water features. (Burleigh, 2014; photograph by Tania Rossetto).

Indeed, Hayward (2019) has previously considered sub-surficial mapping of marine aquapelagic spaces in cultural interpretive terms. In an article on the Flower Garden Banks Sanctuary in the US, drawing on Hawkins (2018), he writes that mapping through depth-sensing technologies differs from traditional mapping, since traditional mapping is based on seeing, while sub-surface mapping is based on multisensory media. Multisensoriality is thus recognised as a way to attend to, and mobilise, volumetric knowledge and politics about water. Hayward elaborates on this notion seeing the Flower Garden Banks as “entities performed by an intersection of animate and inanimate objects and the discourses applied to them” (2019, p. 162), including maps. Yet, we could apply this performative sensitivity to *all* mapping practices. Following recent cartographic theories, namely the post-representational turn (Rossetto, 2015), maps should *always* be thought of as mappings, that is as entities performed by intersections of human and non-human objects and discourses. In his Flower Garden Banks article Hayward points to the ways in which such islands are produced as cultural constructs by demarcation processes that “comprise the volumes of water that occupy the spaces between cartographic reference points and include seafloors of these areas” (p. 163). While cartography seems to be here understood as a fixing and demarcating technology, it is also acknowledged that demarcation is enacted through various practices and is always a processual performance. Here I see a theoretical oscillation between a fixed and immobile notion of mapping and a more flexible and mobile one which can adapt to complex, multimodal, multisensorial appreciation of water mapping and aquapelagic representational assemblages. As Hayward suggests, a lot of diverse maps are assembled to delineate perimeters, to state micro-sovereignties, to exhibit, to inform, but such maps – I argue – are just as fleeting entities as sanctuary islands (particularly in hostile contexts) are. Elsewhere, the same oscillation seems to appear with particular reference to the aquapelago (Hayward, 2025). Here at stake is the flatness of maps. As Hayward contends, the aquapelago:

is not a product of a cartographic imagination, an image rendered flat. Indeed, it is the multiplicity of submarine depths, of regions of water and currents, of seafloor surfaces, of various forms of flora and fauna and their interactions

with topologies of land and of aerial and weather systems as well as flows of materials between them that produces an aquapelago. (Hayward, 2025, p. 17).

Here cartographic flatness seems incompatible with the depth of aquapelagos. In another work, again Hayward (2012, p. 6) opposes the idea of aquatic spaces as “locations”, “surface models” and “objective geographical entities” to those of “spatial depths,” “underwater scapes” and “performed entities.” Implicitly, it is the figure of the map that is associated with the first set of immobile and flat concepts.

Returning to the dialogue between Visentin and Hayward, we should note that there is a final map on which this dialogue ends. It is from Eagle Maps, a web GIS service born in Friuli Venezia Giulia and dedicated to professionals, institutions, private companies or citizens. Apparently, it is a ‘flat’ map: no pictorial details, no volumetric features, no multisensorial figurations: just an abstract, zenithal cartographic space. Yet, watery features are rendered in vivid blue and therefore a hydro-centric perspective is well acknowledged by the authors also in this map, which is seen as a “complement” to the 17th century one by Heintz the Younger. “Using the thickened blue line technique... the fragmented land spaces appear as an archipelago,” Visentin writes (p. 24). From that line a new recognition of the liquid region emerges. The exercise of conceiving the region as an interior aquapelago, by traversing both the region and its cartographic renderings, brings the authors to “understanding the area as a three-dimensional space,” in Hayward’s words (2025, p. 24).

As the shift from maritime waters to interior waters requires a more sensible, subtle and insightful appreciation of the aquapelagic character of an area, the shift from ocean maps to inland ones require to be attuned to the less magnificent ways in which maps do or do not reveal wateriness. We could think of a parallel between hydrologic and cartographic imagination. As the authors state, drawing from Anurandha Mathur and Dilip da Cunha, we could say that a hydrologic imagination entails that we do not live on a surface, but in a pervasive wateriness. In a similar vein, our cartographic imagination changes when we begin to feel that maps are mobile, navigational, processual, and post-representational. Maps are not dead surfaces: even the most apparently flat map can be mobilised, enlivened, “fired-up” (Rossetto, 2024), and made volumetric by performance, discourses, bodily practices. In other words, maps always *emerge* while entering a world which includes (in a ‘ontologically flat’ manner) material agents and cultural contexts, human and non-human agencies. This is also, in my view, why the apparently insignificant initial map in Hayward and Visentin’s article is activated and made generative and volumetric by the encounter with the authors, thus fully participating in their conversation. The intersections of water-spheres and carto-spheres performed by Visentin and Hayward, while moving from the more modest to the more flashy final map, is an excellent example of what can happen when we invite *all* maps to take part in our dialogues.

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Film

- Marie Tharp: Uncovering the Secrets of the Ocean Floor, with Helen Czerski*. (2016). (Dir. Wan, R.). <https://www.youtube.com/watch?v=TgfYjSoOTWw&t=180s>