

12

Political Epistemology of Venice's Hydrology

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Notes

This lesson highlights the political dimension of science-based transformation of the Venice waterscape. Although the history of the territory and the hydrological basin connecting the Alps to the Mediterranean Sea depended on forms of knowledge (scientific and not) and technological capacities, the history of Anthropocene Venice is not technocentric. Rather, it relates to political decision making, cultural systems, economic practices, ideals and aquatic ways of living and experiencing the territory.

The solution to problems of water management is far from a purely technical question. It does not solely depend on the capacity of hydraulic engineers to address objective and 'neutral' problems, left alone with their own means. No water expert can work in insulation from society because decisions concerning water have always been complex from a social and ecological viewpoint. Indeed, they are embedded in different visions of society and its future. Interventions aimed at regulating and controlling flows become inscribed in the territory which they alter. Most importantly, to manage water equates to manage the conditions for life. The *2024 UNESCO World Water Development Report* clearly states that peace and prosperity are dependent on wise, just and sustainable uses of water (United Nations 2024). Allocation for alimentation and hygiene, domestic activities, drinking and fishing, agriculture, transportation, and energy production need to be balanced else they generate conflicts within a community, between different groups, towns, and states. Water, with its cycle, and society, with its cycles, too, work together as concurring hydro-social forces of world transformation. The dialectics of water and society constitute a dynamic juncture from which one can aptly observe the Anthropocene condition, in which humans and their technologies have become major geological factors. Indeed, water politics can be termed a "total geological fact" at the encounter of the Earth sciences with cultural anthropology (Schmidt 2017, 20). Venice is a paradigm case of Anthropocene hydrosociology: the survival of its natural-cultural settings is linked to the evolution of the climate and the conditions for life on Earth.

This lesson looks at water from the viewpoint of political epistemology, that is, from a cross-disciplinary viewpoint that connects 1. hydraulic knowledge, 2. philosophy (especially epistemology), 3. history. Relative to history, this should not be understood as history-writing and narrativity as much as a comprehension of reality as a process, and 4. political theory.

The historical materiality of Venice witnesses to the intricacies of the natural-human coevolution, mediated by science and technology. Far from being the result of a blind causality, guided by an alienating and impersonal necessity, the genesis and development of the Lagoon of Venice has been shaped by individual and collective purposes and subsequent actions. Past decisions shaped the lagoon, its coastal lines, and the riverine system, from the Alps to the Adriatic Sea. Venice's environment looks now very much as a cultural-natural cyborg. The path dependencies that made it reach its present form reflect ways of experiencing, representing and living the territory, as well as in economic interests, and political motivations. The mercantile classes that ruled the city in the Middle Ages and the early Modernity requested the protection of its watery environment to the benefit of commerce and maritime expansion. Their engineers, as a kind of 'organic intellectuals' of the maritime mercantile class, efficaciously defended the lagoon by diverting riverine sediments outside of it. In the sixteenth century, the highly esteemed water officer Cristoforo

Sabbadino opposed the agrarian faction of land speculators. Among them, his main opponent Alvise Cornaro encouraged vast reclamation projects that would have led to the total embankilometres of the lagoon. Against him, the victory of the 'water party' secured centuries of river diversions following Sabbadino's prescription, summarized in three lines of this sonnet of his:

Oh Venice! Remove the rivers and put a brake
To the greedy lusts of men. The sea
Will always obey you once its waters remain the only ones in the lagoon.

Without constant re-engineering of its waterscapes, Venice's insularity would have been lost. Today, the city would be similar to localities such as Ravenna and Caorle which used to be water cities, too. Ravenna flourished as a port city in ancient times but is now several kilometres away from the coast, as a result of sedimentation processes. As for Caorle, north of Venice, it was an island in the Renaissance but the rivers that the Venetians diverted from the lagoon discharged their sediments in its proximity and progressively connected it to the mainland.

The preservation of Venice's water produced great environmental changes in other places and bore high costs for subaltern communities. Uneven power relations, among others, hit the fishermen communities, for whom the transformation of waterscapes was not particularly desirable as it forced them to adapt, in particular their fishing, to varying environmental conditions.

One of the most reputed hydraulic engineers of nineteenth-century Venice, Pietro Paleocapa celebrated the farsighted politics of his predecessors because, as he argued, they always gave priority to the lagoon of Venice over any other interests (Paleocapa 1819). As much as he was right about the efficacy of his forerunners, he did not perceive the power relations that were at the basis their activity. Social relations informed Venice's hydrology as water politics were guided by specific interests and an image of the city. Engineers progressively disconnected it from the territories, people and ecosystems that surround the lagoon, both physically as well as mentally. A solipsistic vision of Venice as an autonomous island-state made of Venice the embodiment of a dreamt of city islands, which served philosophers to phantasize about idealized societies. Among them, Thomas Moore's *Utopia* and Tommaso Campanella's *City of the Sun*.

The trope of Venice's insularity, far from a mere representation, acted as a blueprint for action. Past imaginations still hunt us, as they have established the material and mental conditions of Venice. As an acknowledged world heritage (a UNESCO site since 1987), the city and its lagoon constitute an inseparable unity but the preservation of 'the stones of Venice' (in John Ruskin's expression) faces countless challenges, not least the defense of their living spirit against commodification. Should not their specific lifestyle, the 'soul' of this locality, be preserved against forms of cultural extractivism that force the last 'indigenous people' to abandon their homeplace in order to escape the combined floods of tourists and rising sea levels?

Imagining an ecological future for Venice means to reconnect it with broader, even planetary, webs – those of the climate crisis and environmental sustainability. They force us to move beyond the image of the secluded island and make it reconstruct the ties with its surroundings. Relative to its proximate areas, one ought to first acknowledge that the Alps and the rivers are an integral component of Venice both from a geomorphological viewpoint as well as a cultural one. Natural processes of erosion and sedimentation have created the plains and the coastlines of Veneto. Not only the soil, but also the sand of Venice's strands, its *lidi*, are the product of waters' lasting labour. The paleochannels of submerged Ice-Age rivers have been a condition of navigability in the lagoon for immemorable times. The rivers also served for the transportation of woods from alpine forests. They descended from there, bound together as rafts, along the Piave River and were later implanted in

the soil as the foundations on which the city could be erected. Those trees are also incorporated in the buildings as their scaffolding. And they were employed in the Arsenal for the construction of the fleet that once dominated the Mediterranean shores like a “forest at sea” (Appuhn 2009).

Till rivers flew into the lagoon, the aquatic connection with the inner territories was ostensible: the ‘hydrosocial’ link between the mountains and the sea was tangible. But after suzerain insulation became imperative, as a mission to be accomplished by all technological and political means, the experience of geographic, biological and cultural bonds between the Venetian waters and the fresh-water streams which meander from their elevated sources to the sea has been erased. The physical separation, in turn, sanctified the primacy of the island-capital over the mainland territories it ruled. This also produced staunch ecological blindness relative to natural-cultural interdependencies, which has unleashed programs of total management of rivers for land productivity and transportation, in the past, and energy production in the last century or so. Today’s hydro-geography embodies ecosocial hierarchies, which call for a re-connection in order to reestablish bonds of solidarity, horizontal ecological equity in decision-making and the inversion of top-down asymmetries in water management.

Among the waterways, the Piave River, which connects these three UNESCO sites – the Dolomites, the Valdobbiadene hills and the Lagoon of Venice – is exemplary of the ecosocial disconnection of the territory, its dis-integration, as it were, and the need to reestablish its continuity. In the industrial era, this river, which was for centuries the route of transportation of Alpine woods, has become a complex organic machine for the co-production of electric energy and agriculture. At the heart of this system, a protected natural area is still preserved, the Grave di Ciano. This is a former bending of the river, which is now protected in the framework of the European Union Natura 2000 network, both a *Special Area of Conservation* and *Special Protection Area*, according to the European Environmental Agency. Yet, this place is now threatened by climate change. But paradoxically, this happens in the name of ‘climate adaptation’ itself. Indeed, this oasis of biodiversity of about 940 hectares risks being destroyed and re-engineered as a gigantic flood retention basin which has been conceived as a measure against more frequent extreme events deriving from higher global temperatures. Current controversies over the future of this area involve the local community, civil society, experts, and politicians. The unfolding of the debate and the search for alternative solutions show the political importance of environmental knowledge and the urgency of renewed democratic forms of education to foster aware and inclusive environmental plans.

Decisions about water and its flows have always been existential for humans, their ecosystems, and biodiversity. A political-epistemological outlook on Venice’s hydrology evidences the force of science, in connection with technology, as a means of world transformation. It also shows the non-neutrality of decisions concerning water and territory. Indeed, hydrology is politics in the deepest sense, because it organizes the distribution and destination of the most precious element of life and reorganizes and constantly shapes the territory in accordance with visions which are political as far as they affect large societal bodies and shared views. Dreams of Venice as an insular utopia, the expression of an ideal society, served commercial, defensive and political strategies in the past. Those dreams have changed their function but still inform widespread perceptions and representations of the water city and its lagoon, as physically and mentally separated from the land by artificial means, especially the diversion of all rivers that once connected it to the Alps. In Venice, the environmental crisis is at once a cultural crisis. The future of its material existence coincides in many ways with that of its people and their bonds, to be re-established, with their natural, socio-political and mental settings, from the Alps to the sea.

Mandatory Reading

Omodeo, P.D.; Trevisani, S. (2022). "Historical Geoanthropology in Venice". *Journal of Interdisciplinary History of Ideas*, 11(22), 1-22.

Further Optional Reading

Appuhn, K. (2009). *A Forest on the Sea: Environmental Expertise in Renaissance Venice*. Baltimore: The Johns Hopkins University Press.

Bonan, G. (2020). *Le acque agitate della patria: L'industrializzazione del Piave (1882-1966)*. Roma: Viella.

United Nations (2024). *The United Nations World Water Development Report 2024: Water for Prosperity and Peace*. Paris: UNESCO.

Omodeo, P.D. (2022). "Hydrogeological Knowledge from Below: Water Expertise as a Republican Common in Early Modern Venice". *Berichte zur Wissenschaftsgeschichte: History of Science and Humanities*, 45(4), 538-60.

Paleocapa, P. (1819). *Esame delle opinion di Benedetto Castelli e di Alfonso Borelli sulle Lagune di Venezia*. Venezia: Dalla tipografia di Alvisopoli.

Schmidt, J. (2017). *Water: Abundance, Scarcity, and Security in the Age of Humanity*. New York: New York University Press.