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MAIN SECTION

Land-Sea Spaces and Infrastructures: the Mediterranean as an Edge, a Continent, a Cluster

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ABSTRACT

Looking for new visions and tools for land-sea integrated planning, the article aims to reason on a reconceptualization of the contemporary Mediterranean through exceptional cases of design and representation. Whether they are utopian projects from the early twentieth century, such as *Atlantropa* (1928), or up-to-date critical mappings, such as Migrating *Mediterranean* (2022), they are works aimed at capturing the heterogeneity and at the same time compactness of this millennial water basin. If the utopian project of *Atlantropa* took the coastal edge of the Mediterranean as its main area of action, irreversibly modifying its morphology through new infrastructures, the critical map *Migrating Mediterranean* reverses the interpretation by focusing on the aquatic surface and, actually, on the multiple ways of settlement and circulation on and across the sea. Through these interpretations, the Mediterranean is seen time to time as an edge, a continent and a cluster. In the latter meaning – the Mediterranean as a cluster – its relational potential emerges proposing it as a key area for experimentation in the field of infrastructure and osmotic land-sea circulation. The perspective offered by the cluster regime turns the *Mare Nostrum* into a quintessential workspace for testing the new tactics offered by *spatial clustering*.

KEYWORDS

Moving Edge, Migrating Landscape, Port Clusters, Solid Sea, Liquid Continent.

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Background: Three Narratives

Crossings and relationships, interests and mutual contaminations define the nature of the Mediterranean region. A medium terrae that, as Carmen Andriani argued, "is the medium through which different cultures and policies connect and clash; it is a space of relationships crossed by routes that mark a dense network of intangible traces. A median condition, suspended between the North and the South of the Earth, which identifies the Mediterranean proper, in the Euro-African context, but which is also found in Central America, at the Gulf of Mexico, and in South-East Asia, in the Sino-Malay Archipelago. These are geographic locations at similar latitudes, they are all close to the equatorial belt, at the gateway to the Earth's South. They balance opposing forces, ensure the resilience of the different cultures that inhabit them, they build an apparent unity for a context that is in fact fragmented, they hold together a society fractured into different communities often in conflict with each other."[1]

Building on this idea, we can consider the existence of a plurality of *Mediterraneans* that, spread across the globe, are topographical concepts even before being geographical places.

The idea of several Mediterraneans responds to specific requirements from which it derives peculiar aspects. Therefore, the Mediterranean can be conceived, for instance, as an infrastructure, or as a "solid sea" constantly crossed by different individuals with different purposes and times. The Mediterranean is a habitat populated by animals, and marine plants and crossed by the migratory routes of birds. Ultimately, this contribution supports and develops the idea that the Mediterranean is an *inverse continent*, a vast fluid surface bordered by lands. Overturning the long-established geographical definition of a "continent" (i.e., a large continuous and discrete mass of land, ideally separated by expanses of water),[2] the Mediterranean today appears to be a *liquid continent* defined, rather than by the lands that perimeter it, by the set of seas that compose it and by the different ways in which it is inhabited.

Looking for new tools for land-sea integrated studies, the article aims to reason on a reconceptualization of the contemporary Mediterranean presenting three interpretative narratives in terms of design and representation. Whether they are utopian projects from the early twentieth century, such as *Atlantropa* (1928), or up-to-date critical mappings, such as *Migrating Mediterranean* (2022), they are works aimed at capturing the heterogeneity and at the same time compactness of this millennial water basin. If the utopian project of *Atlantropa* took the coastal edge of the Mediterranean as its main area of action, irreversibly modifying its morphology

1 Carmen Andriani, "Mediterranei," in *MED.NET. IT.01 REPORT,* ed. Manuel Gausa, Mosè Ricci, Nicola Canessa, Mathilde Marengo, Emanuela Nan (Trento: LISt Lab, 2011): 70.

2 Martin W. Lewis and Kären E. Wigen, *The Myth of Continents: a Critique of Metageography* (Berkeley: University of California Press, 1997),

through new infrastructures, the critical map *Migrating Mediterranean* reverses the interpretation by focusing on the aquatic surface and, actually, on the multiple ways of settlement and circulation on and across the sea. Through these lenses, the Mediterranean is seen from time to time as a *moving edge* (I), a *migrating landscape* (II) and a *design cluster* (III). In the latter meaning—the Mediterranean as a design cluster—its relational potential emerges proposing it as a key area for experimentation in the field of osmotic land-sea circulation.

The recognition of the Mediterranean as a *liquid continent* allows designers to place the focus on the sea, on the ways in which it has influenced urban transformations and altered itself in the process. In conclusion, the article establishes analogical or opposing relationships between the three proposed narratives in order to derive tools for contemporary transformations of the Mediterranean basin. These tools are deduced from specific declinations of the water surfaces, assumed as the active material of the project.

Moving Edge

In terms of ambition and size, Atlantropa[3] is the most visionary infrastructure plan envisioned for the Mediterranean. Proposed by Herman Sörgel[4] in 1928, the project aimed to connect Europe and Africa through a vast network of dams, bridges, ports, and tunnels. It was based on the construction of a colossal 35-kilometre-long dam on the Strait of Gibraltar, creating the world's largest power station with a capacity of 55,000 megawatts. Arranged in an arch to separate the Atlantic Ocean from the Mediterranean Sea and consisting of 2 to 5 billion cubic meters of concrete, the dam would be up to 300 meters high from the seabed thanks to a foundation with a section of half a kilometer. It was the most impressive infrastructure in the world, the construction of which would have taken 150 years and the employment of half a million workers.

Once the dam was completed, the level of the Mediterranean Sea would have been reduced by the natural effect of water evaporation and divided into two basins by two more dams to be erected between Tunisia and Italy: the western one with a 100-metre drop in water and the eastern one with a 200-metre drop. The land taken from the sea—almost 570,000 square kilometers of new soil—would thus have been used to expand coastal cities or exploited for agricultural and industrial purposes. Europe would thus have been united with Africa as well as Gibraltar, with a huge bridge extended between Tunisia and Sicily, supported by steel cables and crossed by road vehicles and suspended trains.

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3 Combination of the words "Atlantic" and "Europe".

4 Herman Sörgel (1885-1952) was a German architect belonging to the Expressionist movement. His production was mainly centered on the *Atlantropa* Project.

The production of electricity would also have been ensured by the construction of other energy infrastructures such as the power station in Tunis, the plants in the Strait of the Dardanelles and several hydroelectric establishments in Egypt. The latter, in particular, served to fill large reservoirs to irrigate the Sahara and the newly formed lands.

Originally named Panropa,[5] the project aimed to promote cooperation between communities, production, progress and the movement of people and goods. In the intentions Atlantropa was to change the political and commercial relations of Europe with neighbouring countries, contrasting the contemporary predispositions to expansion in an easterly direction, compared to that towards the south, which were dominant in German politics in the years before the Second World War. Atlantropa was conceived by Sörgel as a center of political power of global character, which could rival the two emerging continents, America, and Asia, becoming the leading power thanks to its infinite energy reserves.

Sörgel was convinced that in the past the Mediterranean was a land without water, thus justifying the exploitation of submerged lands. As geologist Kenneth J. Hsü demonstrated fifty years later,[6] at the end of the Miocene—that is, millions of years ago—the oceans underwent a glaciation that caused them to lower in altitude: the Mediterranean was actually transformed into an immense salt lake destined to slowly evaporate. Only later with the tectonic sliding of Africa towards Europe was the Strait of Gibraltar formed, again connecting the Atlantic with the Mediterranean.

It was clear that with Atlantropa many port cities would lose their role, but for Sörgel new settlements and infrastructure could be built on the new shores. The main issues were concentrated in Italy since the characteristic profile of its coasts would have been distorted: the Adriatic Sea reduced to less than a third of its surface area; Sicily unified with Calabria and Malta, Sardinia with Corsica; Genoa and Naples would lose their historical relationship with the water but acquire new surface area to expand over the sea. To remedy the drastic change suffered by the Lagoon of Venice, Sörgel had even imagined a dam 30 kilometers from the *Serenissima* to preserve its historical conformation and make it eternal.[7]

Although the project appeared utopian, Sörgel had managed to gain the support of many well-known architects, involving them in the development of specific projects within Atlantropa's grand vision. These included Peter Behrens who contributed to the publication of Atlantropa in 1932 by designing a 400-meter-high tower on the Gibraltar Dam. Erich Men-

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5 The name Panropa derives from the Pan-European Union founded by Richard Coudenhove-Kalergi in 1923. See Alexander Stumm, "Neo-colonial Continuities in the Mediterranean Infrastructure Projects of Atlantropa and Desertec," *Ardeth* 7 (2020): 128.

6 Kenneth Jinghwa Hsü, *The Mediterranean Was a Desert: A Voyage of the Glomar Challenger* (Princeton: Princeton University Press, 1987).

7 Giacinto Cerviere, "Atlantropa-Projekt," *Domus* 900 (2007): 77.

delsohn proposed an intervention to redefine the Palestinian coastline in relation to the imminent establishment of a new Jewish state. Sörgel also had the encouragement and input on specific projects from Cornelis van Eesteren, Wilhelm Kreis, Emil Fahrenkamp and even Hans Poelzig. Mies van der Rohe also showed interest in the project but never contributed directly.

Ideally bearing a message of peace and communion between different cultures, Atlantropa had a colonialist approach. Initially, the project involved Europe and North Africa, but Sörgel extended it to the entire African continent.[8] Three large freshwater lakes were planned. One north of Leopoldville (today's Kinshasa) which, thanks to a huge dam closing the basin of the Congo River, would have flooded the great plain surrounded by 500-meter-high mountains, thus creating a body of water of 900,000 square kilometers. The second further north, in Chad, served by a canal derived from the first. A third lake was planned in the area of present-day Zambia and Zimbabwe, fed by the waters of the Zambezi River. Sörgel's aim was to change the climate of the entire continent by bringing rain to the arid regions and thus being able to obtain extensive arable land.

When Hitler brought Nazism to power in 1933, the idea of universal brotherhood underlying Atlantropa collided with National Socialist totalitarianism. Sörgel's project was publicly mocked by propaganda in a documentary, raising serious questions about how the loss of the maritime economy for Mediterranean cities would cause irremediable social tensions. Stubbornly convinced of his vision, Sörgel continued to promote it by founding the Atlantropa Institute, which remained active until the late 1950s and published various essays and volumes. After the 1932 text *Atlantropa*, in 1938 the volume *Die drei großen 'A' Großdeutschland und italienisches Imperium, die Pfeiler Atlantropas*[9] was released. In 1943, the Ministry of Propaganda ordered Sörgel to end his promotional and essay-writing activities under threat of arrest. In 1945, when the war was over, Sörgel attempted to present Atlantropa to American military leaders, sensing the strategic interest of the United States in obtaining raw material extraction in Africa. However, with the development of atomic energy, the consequent decline of interest in hydroelectric power generation and Sörgel's sudden death in a car accident, the Atlantropa project finally fell into oblivion.[10]

The Atlantropa project considered the Mediterranean as a physical space, an unpredictable, manipulable surface, a territory with variable borders and traversable by a dense infrastructure network. The Mediterranean coast was interpreted as an edge that could be crossed, treated as a place

8 Stumm, "Neo-colonial Continuities," 132-133.

9 Herman Sörgel, *Die drei grossen "A": Großdeutschland und italienisches imperium die pfeiler atlantropas [Amerika Atlantropa Asien]* (München: Piloty & Loehle, 1938).

10 Cerviere, "Atlantropa-Projekt," 77.

of passage, as a means to go beyond. The political, economic, social, and environmental effects that Atlantropa would have generated can only be imagined. But undoubtedly, the creation of a vast artificial basin would have entailed a number of local climatic changes, including a decrease in the salinity of seawater and the alteration of the regime of winds and ocean currents, and a consequent substantial impact on marine fauna and flora. In addition, the management of the new artificial continent would have led to the difficult creation of new institutions and administrative structures in a region composed of different cultures and identities. In its powerful imaginative capacity, but also possible opportunities and probable failures, Atlantropa confirms the edge of the Mediterranean as a frontier. A edge intersected and altered by communication routes and attractive poles conceived as connectors of a solid sea, the Mediterranean Sea as a single territory together with Europe and Africa. Every intervention on the coast envisaged by Sörgel was part of an organic and complex system sustained by relationships that transcend the local. Conceived as a unitary project and the result of an intervention strategy based on the sharing and exploitation of a common territory, Atlantropa underlines how an overall vision of the Mediterranean coastal system is essential when approaching the design between land and water.

FIG. 1 *Atlantropa*. Credits: Deutsches Museum, München, Archiv CD 78659

Migrating Landscape

The Mediterranean is known as a migratory geography par excellence, a sea where Europe, Asia and Africa meet and collide, a liquid territory, transitional for multiple migratory routes. Central to the migratory flows of

human beings, who cross it on their way to Northern Europe, the Mediterranean manifests itself in its tragic reality, when these routes are interrupted due to the multifold consequences of contradictory EU conservative policies. Although this contribution does not delve into the complexity of migration flows across the Mediterranean from the northern coasts of Africa to southern and northern European regions, the picture described here is obviously much broader and further exacerbated by non-European policies in which political, economic, and commercial interests crash. The Mediterranean is indeed a war zone.

At the same time, the Mediterranean is a privileged habitat for bluefin tuna (*Thunnus thynnus*), migrating from the Atlantic to the Mediterranean to spawn, and later return to the ocean. And its habitat offers *steppingstones* for trans-Saharan migratory birds in their long-range trajectories linking southern Sahara to northern European breeding grounds.

Cradle of millenary cultures, the so-called *Mare Nostrum* has witnessed the expansion of civilizations following the movement of the surface sea currents, which have marked paths of conquest, but also of exchange and trade. Its ports are destinations and logistic hubs of international relevance and, since 1869 with the opening of the Suez Canal, it became the maritime connection between the Indian and the Atlantic Ocean.

The Mediterranean offers opportunities and resources. As it used to be in the past, with the centuries-old tradition of red coral (*Corallium rubrum*) hunting and still is now, with the exploitation of gas and oil. Active salt marshes alternate with abandoned ones, many of which have been transformed into wildlife sanctuaries, and privileged areas, for the pink flamingo (*Phoenicopterus roseus*), among other species. Its seabed is crossed by intercontinental communications submarine cables and gas pipelines, at the forefront of the current geopolitical debate, whose trajectories describe systems of energy—and therefore political—dependency.

The *Mare Nostrum* is crossed by flows of different natures; here, variegated migratory patterns overlap and humans, resources, animals, and plant species trace lines that stand out against the watery background of the Mediterranean.

But landscapes as well are migrating. Indeed, if a traditional understanding of the migratory flow interprets a trajectory of movement in relation to a fixed background, a critical understanding of the context highlights how landscapes are unstable, not fixed. These, in continuous metamorphosis and under the effect of natural and anthropic accelerations and pressures, make the background in continuous movement. As Brett Milligan argues, "we know that environmental conditions are always changing, but we allow ourselves the fiction of background stability."[11]

11 Brett Milligan, "Landscape Migration. Environmental design in the Anthropocene," *Places Journal* (2015).

The sources of pressure, and the forces that make the Mediterranean dynamic and in motion are many; the different speeds of these movements, therefore the spatial/geographical implications and the temporal extension, vary from geological eras to the immediacy of instantaneous phenomena such as volcanic eruptions and earthquakes. Anthropic pressures are fundamental accelerators of such instability, and the complex consequences of climate change can be interpreted as further speed multipliers. The acidification of the sea, resulting from the transformation of atmospheric CO2 into carbonic acid, and the increase of water temperatures, profoundly modify the marine habitat, especially in the eastern Mediterranean. The Suez Canal and the release of ballast water from commercial ships are migratory vectors for alien organisms and microorganisms, which find in these new environmental conditions an optimal ecosystem for their propagation.

To fully understand the migratory phenomena, it emerges as fundamental not only the understanding of the *push and pull factors*, agencies of attraction and repulsion that activate occasional or periodic movements, but a broad and holistic vision of instability. Intrinsic dynamism and different speeds of change characterize and modify geography and politics seamlessly.

Migrating Mediterranean is the product of research and critical mapping, conducted by the Dutch-Italian firm Openfabric in 2022, which focuses on the representation of migrations of people but also of landscapes and extractive resources. The map delves into the Mediterranean space, identifying agents of instability to show that the contextual framework we traditionally think of as fixed, is in fact not. Resources, humans, animals, plant species, cultures, cultivations, literature, ecosystems, tectonics are all evolving, proving that the Mediterranean must be recognised as being in constant metamorphosis. Accelerated growth is changing these patterns at their very foundations.

Migrating Mediterranean is an instantaneous and timeless cartography: by definition, imperfect, and partial, requiring continuous redefinitions and additions. The enduring, layered, and conflicting palimpsest of the Mediterranean emerges in the graphic visualisation as a privileged vantage point from which to observe the extension of *planetary urbanisation*[12] underlying renewed migratory flows and extractive configurations, where only seemingly wild and remote territories are transformed due to the socio-ecological consequences of unlimited urbanisation.

Once the different flows, pressure forces, and episodical phenomena are depicted in one comprehensive mapping, not only the migratory nature of the Mediterranean clarifies, but a renewed centrality emerges. Being

12 Neil Brenner and Christian Schmidt, "Planetary urbanization," in *Urban Constellations*, ed. Matthew Gandy (Berlin: Jovis, 2012): 10-13.

at the crossroads of Africa, Asia and Europe, the Mediterranean stands out as an alternative to the geopolitical Atlantic centrality and as a relief to the continental winds of war coming in the current framework from the Russo-Ukrainian crisis.

As a matter of fact, the Mediterranean influence doesn't stop at its coastline, but its relational system of exchange, production/consumption and cultural influence deeply effects the solid continents, as opposed to the liquid one. Once the notion of limit is superseded in favour of dynamic spaces of exchange, not only the migratory nature of landscapes can be addressed, but new land-sea projective scenarios are possible. The coastline may be read as an articulated coast-land interface, conceptually shifting from line to space: a set of areas where traditional geographical and administrative borders are overridden by a system of measurable forces, where migratory scheme at large, and macropolitical dynamics render it a highly unstable and transient landscape.

FIG. 2 *Migrating Mediterranean*. Credits: Openfabric (team: Francesco Garofalo, Konstantinos Venis, Enrico Mancadori, Luigi Ettore Ricchioni), 2022. Size: 2.5 million km². In exhibition: *International Architecture Biennale Rotterdam*: IABR. Rotterdam, 2022, NL and *Invisible Mediterranean*, La Biennale dello Stretto, Reggio Calabria, 2022, IT

Design Cluster

Looking at the sea as an immense space of relationships, a consolidating approach specifically in the field of networked maritime analyses is

showing how the poles of the land-sea system (i.e., mainly ports) are progressively acquiring a regional influence in terms of scale and impact. It was first maritime economics, together with transport geography, that theorized the so-called Port Regionalization phenomenon. Through this fundamental conceptualisation, the economist Theo Notteboom and the geographer Jean-Paul Rodrigue have demonstrated how ports are moving beyond their maritime facilities and traditional operative perimeters by boosting the transport systems towards inland regions.[13] This complex set of economic, logistic, and commercial processes is not immaterial but has tangible impacts that spill over spaces.

As Peter De Langen argued back in 2004, ports can be considered "drivers of agglomeration" in the cities and territories that they serve and make functional:[14] i.e., they function as catalysts of services, infrastructures, settlements and clearly of interests in the several sectors of the maritime sphere and beyond. In the contemporary framework, though, the increasingly regional nature of these land-sea junctions has introduced not only the notion of port region,[15] already prompted by Notteboom and Rodrigue, but also the concept of port system, or rather, port *cluster*.[16]

Starting from the late 19th-century theorisations in the industrial sector to the more recent applications in economic geography, the notion of cluster has become increasingly interdisciplinary. The cluster is both an empirical and conceptual construct:[17] it is mainly used to describe conurbations, interconnected networks, concentrations of firms and service companies having a high degree of collaboration. Large-scale and cross-border projects[18] take clusters into account to talk about networks and innovative *milieux*, economic and geographical disciplines employ the notion of regional clusters to refer to a geographically close group of interconnected companies, associated institutions linked by commonalities and complementarities, in the context of ports and beyond. In the port sector, with Port Clusterisation phenomenon we can describe the administrative aggregation of two or more single ports that, active in the same region, have been institutionally merged to form port clusters. Nonetheless, the idea

13 Theo E. Notteboom and Jean-Paul Rodrigue, "Port Regionalization: Towards a New Phase in Port Development," *Maritime Policy and Management* 32 (2005): 297–313.

14 Peter de Langen, "Governance in Seaport Clusters," *Maritime Economics and Logistics*, 6, no. 2 (2004): 141-156. in Haralambides H. E. (2015). Port management. Palgrave Macmillan. Retrieved November 15 2023: 138.

15 Ibid.

16 The notion of cluster, as applied to ports, has been addressed by several scholars in maritime economics and geography in recent decades. Among others, reference is made here to Alexandra Kocsis, "The role of port clusters in theory and practice," *Regional and Business Studies,* 3(2 Suppl.) (2011): 51–60.

17 Tim Vorley, "The Geographic Cluster: A Historical Review," *Geography Compass* 2, no. 3 (2008): 790-813.

18 *Delta Metropool* is a Dutch association based in Rotterdam which brings together professionals, governments, business, knowledge institutions and other social actors with a mission: advocating for metropolitan development in the Netherlands and surroundings (www.deltametropool.nl).

of clusters seems for the time being to ignore space: in other words, its spatial implication and potential application in urban and territorial design still appear incomplete and overlooked. In addition, the implications (also and above all spatial) introduced by port systems or clusters influence not only the inland but also have inevitable repercussions on the seas which, as primary infrastructures, connect ports and coasts.

The notion of cluster is hence applied to land-sea territories, and it bears witness to a further rapidly consolidating process. Not only the substantial supplanting of administrative and political borders but an intense *spatial stretching,* i.e., a physical and relational expansion of coastal and marine spaces that, through these evolutions, become increasingly polycentric, interlinked, multidimensional, and pooled, both on land and sea. Implying a new kind of spatial engagement, this stretching generates new spatial patterns of functional relationships between the poles of the cluster and the spaces linking them which have potentialities to be addressed through design disciplines.

The rapid introduction of the cluster regime, which is more advanced in some major Nordic ports (e.g. the French ports of Paris, Rouen and Le Havre or the Danish-Swedish alliance of the ports of Copenhagen and Malmo) and still at an early stage in, for instance, Italy (where port systems were formalised only in 2016), offers unexplored horizons to the design of port operational spaces and infrastructures. Clusters, in this context, stand as new instruments for land-sea integrated planning and design.

Considered one of the *new logistical weirdnesses,* port clusters have unexpected potential for both solid and liquid spaces. Their relational strength and pervasiveness can be transferred to the territories and act, for instance, to optimise the use of spaces and resources that, in the clustering regime, can be pooled. The concrete optimisation impacts will then be to avoid duplication of large infrastructures along the same coast/river stretch, to produce benefits in land reclamation and port pollution. The renewed governance of port clusters can improve territorial inclusiveness among primary and secondary ports, using the advantages of proximity. A cohesive planning will deal with the new port-city-territory interfaces which are hinges and grafts between land and sea. Lastly, a redistribution and relocation of catalytic operative functions within extended port city territories, resulting in freeing up seafront areas or decommissioning abandoned artefacts.

A major application of the cluster is placing emphasis on water spaces. Even though for years the planning system has turned its back on the sea considering it as *another urban territory*,[19] the spatial dimension and the relational regime introduced by the clustering of ports may instead be

19 On this, refer to Milica Topalović, Hans Hortig and Stefanie Krautzig, *Architecture of the Territory. Sea Region. Singapore, Johor, Riau Archipelago* (Singapore: ETH Zurich DArch FCL Sin, 2014).

pivotal in addressing new challenges of the marine environment and the maritime sector. For centuries, in fact, the space of the sea has been understood, on the one hand, as an empty and blank place and, on the other as a politically reclaimable surface to occupy, a solid dryland. This has for decades produced the direct transfer of terrestrial space formation rules to marine spaces: in other words, settlements and architecture of the sea were conceived and realised according to land-based shaping principles. Looking today at the sea as an environment affected by a specific kind of urbanization[20] (think, for example, of offshore platforms, submarine telecommunications grids, networks for transporting supplies of energy sources, large dams, wind farms, etc.), though, activates a reversal of this common idea, leading to a vision able to re-signify the transformation of the liquid environment and its main settlements and architectures.

As Nancy Couling has stated,[21] the ocean requires the development of unconventional methods for its description and development: alternative perspectives "[…] which draw the ocean in as an active participant to urbanization processes". Alongside the design tools provided for instance by the Marine Spatial Planning approach,[22] the cluster can bridge the gap from a land-centred perspective to an approach targeting marine environments, i.e., developing spatial formation instruments specifically for sea-based artefacts. In this sense, design in marine spaces implies a tension between fixity and fluidity, highlighting a recurring quality of such spaces that Nancy Couling defines as the "lack of settlement". This lack triggers a scarcity of interaction with ocean space that, specifically, concerns water settlements and offshore infrastructures.

To make effective use of the cluster as a design tool, it needs to be underpinned by an equally powerful vision. The Mediterranean water basin, given its millenary history of maritime activities and its still crucial position in the context of oceanic routes, is a key area for clustering experimentation. This is confirmed, among many other aspects, by the continuity of its coasts dotted to the south and north by hundreds of ports of different sizes, the consolidated relations with the river trade and transport network in the internal territories, the system of tangible and intangible marine infrastructures that bind distant regions above and below the sea in mutual

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20 On this, refer to Nancy Couling and Carola Hein, *The Urbanisation of the Sea. From Concepts and Analysis to Design* (Rotterdam: nai010 publishers, 2020).

21 Nancy Couling, *The Role of Ocean Space in Contemporary Urbanization*, PhD Thesis - School of Architecture Civil and Environmental Engineering (ENAC). Lausanne: EPFL Ecole Polytechnique Fédérale de Lausanne (2015): 11

22 As stated by the *Intergovernmental Oceanographic Commission*, "Marine Spatial Planning (MSP) is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process. MSP is not an end in itself but a practical way to create and establish a more rational use of marine space and the interactions among its uses, to balance demands for development with the need to protect the environment, and to deliver social and economic outcomes in an open and planned way."
For more: https://www.ioc.unesco.org/en/marine-spatial-planning#:~:text=Marine%20Spatial%20Planning%20(MSP)%20is,specified%20through%20a%20political%20process.

exchanges and contaminations.

Moreover, the systemic and relational potential of the contemporary Mediterranean exceeds the coastal edge alone and spreads deep along river valleys, cross-border corridors, and oceanic routes—thus both towards land and sea—materialising in the systemic dimension of ports, logistic platforms, inland ports, hinterland, agglomeration economies, types of business cooperation and so on. On this, we can mention for instance the spatial impacts of the EU's trans-European transport network policy, integrated with the system of connections by sea via the "Motorways of the Sea".

In its liquid genetics, therefore, the Mediterranean is a cluster of cultures, knowledge and, more specifically, of networks, junctions, and large infrastructural complexes. The relational perspective[23] offered by the cluster regime turns it into a quintessential workspace for testing the new design tactics offered by *spatial clustering*.

Conclusion: Tools for Water Surfaces

The three interpretative narratives proposed above constitute some of the myriad visions developed over the centuries to describe the characteristics of the Mediterranean. The trajectory they propose passes through a series of analogies or dissonances that can be deciphered. As stated in the introduction, the ultimate aim of this contribution is to draw the Mediterranean as a whole from the point of view of its seas and bodies of water, rather than the lands that delimit it, in order to pinpoint its transformative potential in the contemporary context.

While the utopian and intellectual project of *Atlantropa* (1928) took the coastal and infrastructural edge of the Mediterranean as its main area of action, expanding its ambit and irreversibly modifying its morphology through new infrastructures, the critical map *Migrating Mediterranean* (2022) reverses the interpretation by placing the focus on the aquatic surface and, actually, on the multiple ways of settlement and circulation on and across the sea. The latter reading interprets the Mediterranean as a passage (or rather, a set of landscapes) in motion.

One (the project) is applied on the continuous and narrow border at the hinge between land and sea—we can say between *ground* and *unground*—the other (the map) spreads over the fluid space of the sea, employing a maritime perspective and recording the flows that ply it on boats and transport networks, the ecological and climatic processes that alter it and, simultaneously, the human and non-human communities that inhabit it at all depths of the sea. Although very different in terms of time and purpose,

23 César Ducruet and Theo E. Notteboom, "Revisiting port systems delineation through an analysis of maritime interdependencies among seaports," *GeoJournal* 87, (2022): 1831–1859.

the project and the map share analogies and common grounds useful for outlining new perspectives to reconceptualise and reimagine the contemporary Mediterranean through the domains of space. Such visions, combined with that of the Mediterranean as a design cluster, corroborate the idea supported by the contribution of the Mediterranean Sea (much more than a sea, in fact) as a *liquid continent*.

Firstly, the three works consider the Mediterranean as a single element: a distinct inhabited body of water, a heterogeneous but compact overlapping of landscapes. It is no coincidence that, although produced more than a century apart in very different historical and cultural contexts, these interpretative frameworks assume the same geographical boundaries. This framing of the Mediterranean basin is a convention with very ancient roots: a homogeneous geographical space, an inland sea that was already being traversed back and forth to its remotest offshoots in the 4th century. "We stand around the shores of the sea like frogs or ants around a pond", was how Plato described it in the Phaedo, testifying to both the local and cosmopolitan dimension of this place.

In addition, the two works operate without predetermining or establishing a south and a north, an above and a below, an inside or an outside: despite the multiple nations and cities, peoples and cultures of Mediterranean identity, the reasoning pursued—one of a design character, the other of scientific and applied research—transcends administrative separations and proposes a de-bordered vision of land-sea spaces. On the other hand, as Ferrara has argued, with the process of bordering (literally the production of borders), borders have become devices of spatial differentiation embedded in a framework that is no longer immobile but in flux.[24]

Narratives of this kind are instrumental in defining new tools in the contemporary framework as of today. Such tools concern possible declinations of the vast water surface of the Mediterranean.

Starting from *Atlantropa*'s vision, water modifies its boundary with the land and, retracting to leave space for infrastructures and operational docks of the port, brings the maritime environment closer to the terrestrial one; in this declination, water is malleable design matter.

Taking its hint from the map *Migrating Mediterranean*, water is composed of a boundless set of landscapes, processes, flows and human and non-human migrations that populate it at different depths; in this declination, water is a vibrant habitat.

Finally, in the clustered declination of the Mediterranean, water is a great network of nodes and a hinge of exchange that links spatially distant places, bringing them together in a new aggregated and multi-centred dimension.

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24 Pasquale Ferrara, "Limes. Il confine nell'era postglobale," *Sophia* 3, no. 2 (2011): 183-194.

Since in maritime cultures the sea used to be seen *as the land* (such as, the source of livelihood, the space of everyday life and connections among people and settlements, which all gravitate toward it as the centre), we assume that these three different but complementary declinations of the water space of the sea provide strategic tools for the design of the Mediterranean *fluid continent*.

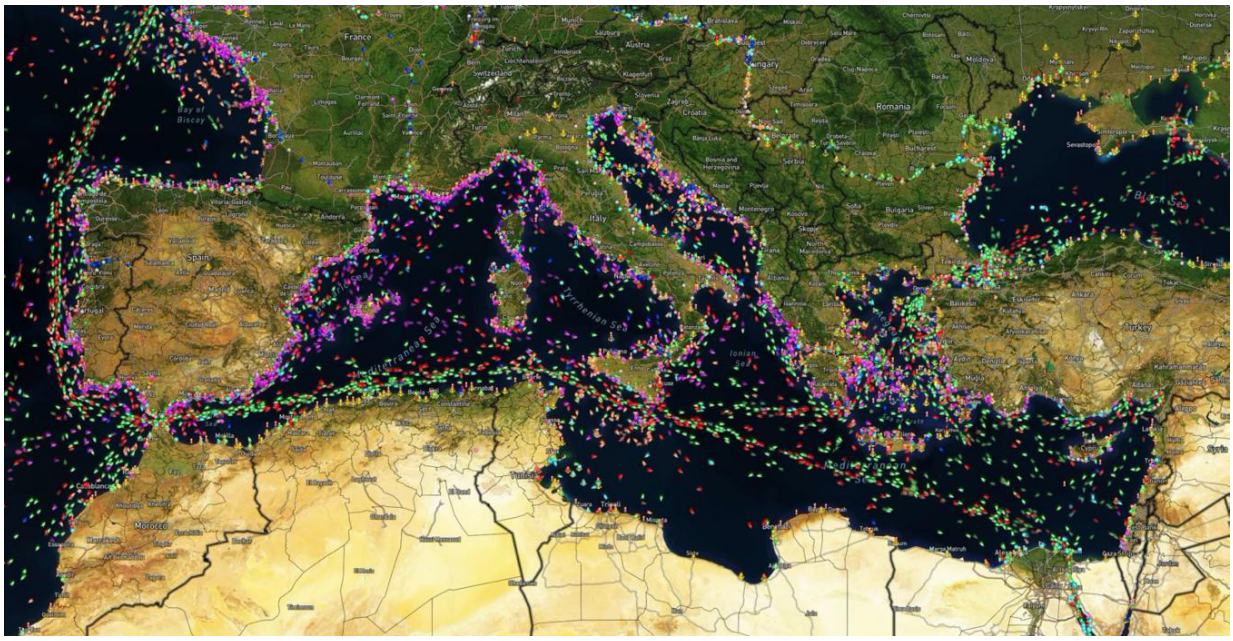

FIG. 3 *Sea routes and ports across the Mediterranean.* Credits: Marine Vessel Traffic (2023)

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