

Financial Littorals

The Architecture of Profit Margins and Ambiguous Lands

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DECLARATION

I, Daniel Fernández Pascual, declare that this dissertation is the result of my own work and that it has been generated by me as the result of my own original research. It also includes work done in collaboration with others, as properly declared and referenced in the text. Information derived from third parties, published and unpublished sources, has been acknowledged in the text and a list of references is given in the bibliography.

This thesis is not substantially the same as any that I have submitted, or, is being concurrently submitted, for a degree or other qualification at Goldsmiths College or any other University or similar institution.

A handwritten signature in black ink, appearing to read 'Dfppascual', followed by a period.

Daniel Fernández Pascual

London, April 2018

ABSTRACT

On the 4 April 2006, a municipal council was dissolved for the first time in the democratic history of Spain, making the housing crisis financially and politically apparent. In the Mediterranean town of Marbella politicians had been adapting the boundary between building land and the coastal commons to their own interests. The power to quantify and reclassify buildable space was at the core of an architectural struggle, as urban planning and the provision of housing had been designed upon the ambiguity of the highest tide in history. Since the 1988 Coastal Law, the Spanish shoreline has not been demarcated in its entirety yet: evictions and eminent domain have trapped the littoral commons in Court. Every twist of the shoreline reveals not where tides are active, but rather where landscape margins are entangled with real estate profit margins. This research investigates speculation and the housing crisis by using the materiality of the shoreline to understand dwelling struggles. The calculated construction of ambiguity in the demarcation of the littoral is analysed as a form of control and a form of resistance. Structured in three chapters, the practice-based research departs from the invention of the coastline in Spain to unpack the financialisation of space and the appropriation of the common good within the housing crisis. It investigates how the provision of 'affordable' homes as financial instruments relies on the global circulation of natural capital, coastal wetlands and offsetting operations. Through case studies in Europe and the US, it investigates the engineering of the shoreline by insurance companies after 'natural disasters' and the circumvention of mortgage debt offshore. Embedded in an analysis of housing from a critical finance perspective, this thesis demonstrates how rather than territorial boundaries being a circulation of capital, it is capital what needs to be read as a constant circulation of zoning laws and ambiguous borderlines, in order to anticipate alternative futures to housing inequality.

Keywords:

Ambiguity, border, boundary, circumvention, coastal commons, eminent domain, empiricism, financialisation, housing crisis, landownership, littoral, mapping, margins, mitigation banking, natural capital, offsetting, offshore, real estate, speculation, shoreline.

TABLE OF CONTENTS

List of Figures	4
PROLOGUE	9
Environmental Protection as Destruction: The Port Against the Beetle and the Seagrass	
INTRODUCTION & LITERATURE REVIEW	15
Aim, Structure, and Practice-Based Methodology	
Ambiguity as Control as Resistance	
From Borders as Circulation of Capital to Capital as Circulation of Borders	
The Mobile Contours of Frontier Natures	
Calculated Ambiguity: Spatial Margins as Profit Margins	
1. SHORE	
Spending the Summer: The Invention of the Coast	47
1.1 Resolution of the Ruler and the Littoral Exercise of Ambiguity	
1.2 The Origins of Littoral Value and Speculation on the Edgelands	
1.3 Environmental Crisis as the Erosion of Democracy	
1.4 The Failure of the Section: Salinity Reports as Factories of Truth	
Project Dossier 1	86
A/ The Failure of the Plan: Exceptions and Mismatches in Governmental Lines	
B/ The Failure of the Horizon: Shifted Gaze in the Tourist Image	
C/ <i>Where the Sea Ends Is Not Necessarily Where the Land Begins</i>	
D/ <i>Boundary Gazpacho</i>	
E/ <i>When Agua de Murcia Lost Its Virginity</i>	
2. OFFSET	125
Speculation on Disappearance: From Real Estate Boundaries to Banking Nature	
2.1 Conflict of Interest: The Insurance-Engineering of the Coast	
2.2 Creating Coastal Threat to Provide Mitigation	
2.3 Quantifying Space: Offsetting and No Net Loss	
2.4 Ambiguities of Demarcation at the European Investment Bank	
Project Dossier 2	157
F/ <i>Modelling Kivalina</i>	
G/ <i>The Coming Storm</i>	
H/ <i>Speculations on Disappearance</i>	
3. OFFSHORE	170
Housing As Financial Littoral: The Real Properties of Immovable Estates	
3.1 From Owning the Shore to Offshore Ownership	
3.2 Gambling with the Law: Loopholes, Circumventions and Ambiguity as Resistance	
3.3 The House Always Wins: Lotteries to Circumvent Debt	
3.4 <i>The Housing Act</i> : Organisation of a House Lottery in Lisbon	
Project Dossier 3	198
I/ <i>The Housing Act</i>	
Towards Onshore Offshoring as a Platform for Political Constituency	213
Bibliography	218

LIST OF FIGURES

- 0: Jeff Schmaltz, 'Dust Over the Canary Islands,' *LANCE/EOSDIS MODIS Rapid Research Team, NASA Earth Observatory*, 8 March 2012,
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<http://cnxarc1rbatx.blogspot.com/2014/10/cymodocea-nodosa.html>
- 5: Edge of Granadilla Port Under Construction. Image by the author, Tenerife, April 2013.
- 6-8: Pilar Bello Bello, 'Traslocación de Ejemplares de *Pimelia canariensis* desde la Zona de Obras del Puerto de Granadilla a la RNE de Montaña Roja,' Santa Cruz de Tenerife, 27 December 2010.
- 9-10: Google Earth. Tenerife, Spain. 15 September 2014, <http://www.earth.google.com>.
- 11: Albert Parsons, 'Beating the Bounds,' Hungerford Virtual Museum, 1 July 1913,
<http://www.hungerfordvirtualmuseum.co.uk/index.php/28-themes/town-and-manor/672-beating-the-bounds>
- 12: Corporal Punishment, 'Beating the Bounds,' Surrey, UK, ca. 1950s,
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- 13: Quadralectic Architecture, 'The Cross-Shaped Model,' Contemporary remains of Roman centuriated landscapes in Béziers, France; <https://quadralectics.wordpress.com/4-representation/4-1-form/4-1-3-design-in-city-building/4-1-3-2-the-cross-shaped-model/>
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- 113: Aerial view of the village of Kivalina and landing track with frozen waters around it. Source: Michael Brubaker, 2011.
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- 146-147: Modelling Kivalina Working Group, *The Coming Storm*, (UK, 2014). Film stills.
- 148-150: Installation view (site-specific), European Investment Bank, Luxembourg, June 2016. Images by the author.
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Dust Over the Canary Islands.

'The dust plumes appear distinct from each other near the coast, which suggests that much of the dust is from that region. Near the shore, a sand sea straddles the border between Western Sahara and Morocco, and some of the dust could have arisen there. But some dust also blows from further inland. Huge sand seas cover parts of Mauritania, east of Western Sahara, and likely supplied some of the dust in this storm.'

LANCE/EOSDIS MODIS Rapid Response Team, NASA Earth Observatory, 8 March 2012.



PROLOGUE

Environmental Protection as Destruction:

The Port Against the Beetle and the Seagrass

The contested construction of a port in Granadilla—a coastal area of southern Tenerife in the Canary Islands, Spain—is a paradigmatic case to dive into the struggle around the pandemic production of profit margins through building infrastructure. A coastal mega-project still today in the making, Granadilla's port has undergone constant tensions between business interests and environmentalist concerns that expose how local politicians have the agency to literally manufacture and govern the spatial extent of their dominions (Fig. 1). Based on an understanding of ecology to serve urbanisation, it epitomises how the architecture of boundaries is complicit with neoliberal powers in the governance of space, which was one of the main causes that led to the 2007-2008 financial bust. This thesis explores the housing crisis precisely from the perspective of these frictions that emerge at the frontier of ownership and development between land and sea.

In July 2010, a specimen of *Pimelia canariensis*, a beetle endemic to the Canary Islands, had been spotted in the area surrounding the Granadilla port site. Its discovery obliged the local authority—as part of their environmental responsibility towards society—to ensure that the construction activity of the port was not distressing any endangered species in the area. The regional government set up the Environmental Observatory of Granadilla (OAG) as an institution charged with watching the changing environment of the coast. Its foundation is the result of a top-down response to environmental protests against the proposal for the mega-port exactly where the beetle had appeared. Given that the construction of the port had already been heavily criticised as further real estate speculation to benefit local politicians, the OAG's mission aimed to safeguard any irregularities derived from building this piece of infrastructure by watching its development and ensuring it operated within European *green* guidelines. While it is not clear whether the beetles had been released next to the development area as a tactic to delay construction, what is clear is that after the first endangered beetle was spotted in the area (and by the media), its presence was used to stop the entire construction project.¹

The European Union had ambiguously ruled four years before that the beetles were endangered and should be saved. However, as the port was an exceptional opportunity for 'the common good', the endangered beetles could be kept 'in place' by displacing them just a little. In order to make this oxymoronic operation succeed, Brussels obliged the local government to set up an *independent* institution that would collaborate with local environmentalists to carry out that task: the OAG. As an immediate response, the independent environmentalist movement of the island released an open letter, where they complained.²

¹ Ben Magec, *Evaluación de la Utilidad y Cumplimientos del Observatorio Ambiental de Granadilla*. Tenerife: Ecologistas en Acción Canarias, 2013.

² Ibid.

- a) That no local environmentalist association had approved the foundation of the OAG.
- b) That the OAG, far from being an independent organisation to watch over environmental regulations, was actually directed by a former member of the government, who still today is supportive of the port. There is indeed a clear conflict of interest.
- c) That previous to the beetle episode, it had been proven that the local government had excluded an endangered species of slender seagrass (*Cymodocea nodosa*) from the list of protected species on the island, right before the announcement of the construction of the port.³
- d) That after Brussels realised the government's failure to protect the seagrass, the EU obliged the OAG to redefine the extent of the endangered species of seagrass properly. However, the OAG adjusted the boundary of the seagrass habitat to a point right beyond the development area of the port, in contradiction to the actual extent of the seagrass. In the maps included in the environmentalists' report there are two conflicting geometries: the green zone, which corresponds to the actual extent of the seagrass; and the marine protected area, whose boundary is right at the edge of the mega-port site (Figs. 2-5).

To prove that the OAG did truly care about the protection of the beetles, it eventually produced an environmental charade in the form of a scientific report to first, spot all possible beetles, and second, carefully displace them. On the 20 December 2010, a group of OAG's environmental technicians scouted the surroundings of the site chosen for the construction of Granadilla's port (Figs. 6-8).⁴ As the official report notes, they first demarcated three working sites on the coast, where the endemic beetles were believed to be most likely living. Once traps were scattered around the three sites they were fenced off and the search began. The team combed the terrain from 10am to 12:30pm trying to find as many of these beetles as they could. After a total of 2,5 hours of work, the same team found that no more beetles had been trapped and concluded that there were only 18 specimens, one dead. It had been raining for days, so the report argued that they did not find any larvae, and thus discarded the possibility of their existence in the area.

The OAG technicians later carefully released the collected specimens in a demarcated zone further inland, which was distant enough to not interfere with the new port. In the same way that they had determined the lines within which the insects could possibly be living, and not beyond, they also defined the lines within which the beetles would live from then on. Among its many contradictions, the report meticulously explained how to displace an endangered species to a 'safe zone' in order to secure its habitat and the environmental and economic sustainability of the surrounding landscape (for humans). The methodology used by the OAG is problematic not only in terms of fieldwork duration, but also in the way it uses zoning and displacement as a tool to preserve space 'as it is'. This exposes the irrelevance of their environmental care operations

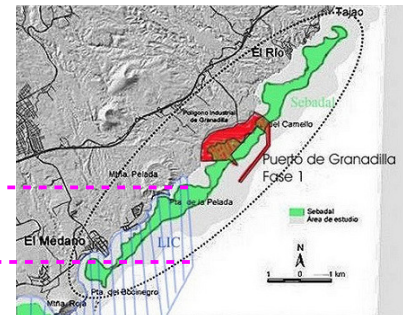
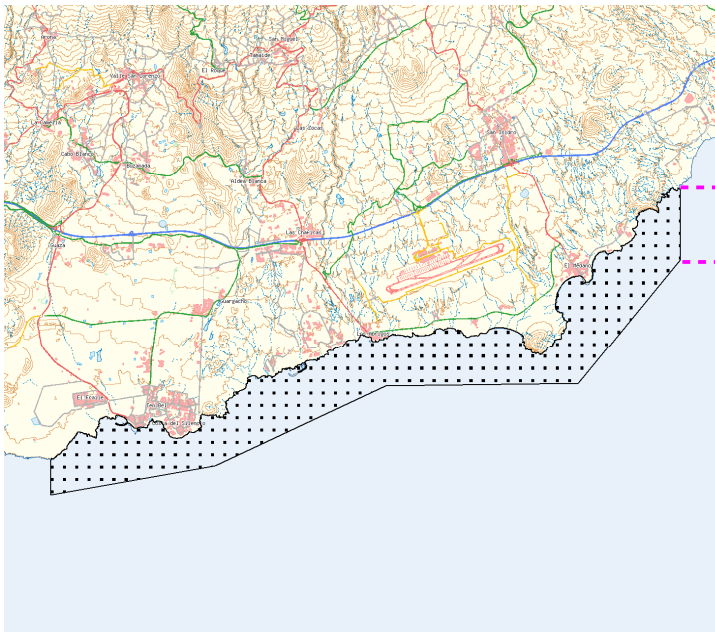
³ Europa Press. 'Greenpeace Echa en Falta a la Posidonia del Listado de Protección.' 13 September 2010, <http://www.europapress.es/sociedad/medio-ambiente-00647/noticia-greenpeace-echa-falta-posidonia-listado-proteccion-20100913133829.html>

⁴ Pilar Bello Bello, 'Traslación de Ejemplares de *Pimelia canariensis* desde la Zona de Obras del Puerto de Granadilla a la RNE de Montaña Roja,' Santa Cruz de Tenerife, 27 December 2010.

and the protection of coastal landscapes in the face of public scrutiny, as well as the inadequacy of an approach to territorial planning and the construction of building land that has been replicated across Spain and that significantly contributed to the recent housing crisis in the country.

Regardless of the reason for their presence, the 17 endangered beetles represent a political mobilisation that exacerbated a conflict between the demarcation of their habitat and the demarcation of the shoreline. Hence, the port versus the beetle and the seagrass is a paradigmatic case of eco-fiction, where greenwashing real estate operations use environmental protection as a form of environmental destruction. Analogously, this thesis unpacks how architecture in neoliberal governance has become a set of relations for valuing space: adapting boundaries and space to a conglomerate of political, economic, and environmental interests. In this sense, architecture can be understood as a result of a set of built environments, where space is built just as much as the environment is. If we take the root *environ* from French—meaning around, about, approximately—the making of the built environment is nothing far from that triple definition of *environ*-ing: the government of limits that more or less enclose space. Architectural processes then are investigated here through a logic based on speculation and financial frictions alongside the demarcation of ambiguous limits: a series of articulations between what we construct as nature and what we refer to as urbanisation. In them, loopholes operate as norms and norms operate as loopholes.

This thesis unpacks the urgency to redefine architectural practice along those speculative terms and the way value is created out of the demarcation of space. The boundary between the end of the coastal commons and the beginning of buildable land is constantly being reclassified. That boundary, which is made out of a very variable offset buffer with an easement of protection (6-500m in width), is regulated according to the Spanish Coastal Law. Deeply embedded in a process of real estate speculation that generates profit margins from the ambiguity of the boundary, it follows an understanding of ecology and the built environment based on a simplistic, two-dimensional approach. It draws flat lines across the country to limit a highly complex overlap of the preservation of life and non-life, with compulsory purchase, housing speculation, and tidal movements along the entire coast of Spain. This has resulted in a pernicious governmentality that gambles with the spatial dynamics embedded in the demarcation of boundaries. In fact, in the genealogy of ambiguity that follows, we shall see how the state cannot operate without it. However, as in the case of the beetle and the seagrass, this deliberate ambiguity can also be used as a basis of contemporary resistance.



1: Masterplan for the new Granadilla port. 2013

2-3: Conflicting boundary systems: the protected area for the slender seagrass (LIC) does not correspond to the extent of it (green solid hatch); the port (solid red hatch) is clearly situated on top of the underwater fields of seagrass, but the protected area (blue stripes) ends right before the site of the port.



4: Slender seagrass (*Cymodocea nodosa*).



5: Edge of Granadilla port under construction. Tenerife, April 2013.



6-8: Endangered beetle *Pimelia canariensis*; environmental technician lifting a rock looking for specimens; and demarcated areas of intervention with the exact location of beetle traps, scattered around three different sites. OAG report, Santa Cruz de Tenerife, 27 December 2010.

INTRODUCTION & LITERATURE REVIEW

'If property depends on clearly defined boundaries, [...] then coastal/marine property is complex and problematic indeed. A fundamental notion in managing the commons is that one needs clear, agreed-upon, defensible and socially and ecologically sensible boundaries [...] However, littoral boundaries are liminal; they are complex, contextually contingent, and changing, challenging those who want solid and easily defined property rights or management jurisdictions.'

—Bonnie McCay, *The Littoral and the Liminal*.⁵

'[C]alculated ambiguity [is] the ability to give diametrically opposed but legally valid answers to the same question from different quarters. Thus offshore allows individuals and firms to enjoy simultaneous ownership and non-ownership, to be high profit and loss-making, heavily indebted but also debt-free, and for investment to be foreign and domestic.'

—Jason Sharman, *Offshore and the New International Political Economy*.⁶

Aim, Structure, and Practice-Based Methodology

This thesis investigates the quantification of space and the classification of land in neoliberal times by looking at the ways in which architecture is complicit in the construction of value. For that purpose, the research begins by looking at the urban planning conflicts along the Spanish coast and how the shoreline—a line that does not exist—can work as an object of enquiry to understand the housing crisis. The contradiction of looking at the visibility of the non-visible in the shoreline itself is, rather than nonsensical, precisely at the core of the notion of ambiguity, of being both and neither. Ambiguity is investigated here as an operational spatial practice that simultaneously allows for control and resistance based on the limit between land and water. It allows for analysing the conflicts around landownership structures, appropriation of the coastal commons, injustice around mortgages and evictions through the risks around the nature of the coast. Hence, the fact that the shoreline is an abstract threshold, produced through military control, speculative interests, and architectural interventions, serves to unpack the collapse of 'affordable' housing and how different local governments have instrumentalised the housing question to produce profit margins. As such, the study of the shoreline as a capitalist abstraction can advance knowledge of how space is constructed in the neoliberal context and how the

⁵ Bonnie McCay, 'The Littoral and the Liminal: or Why it is Hard and Critical to Answer the Question "Who Owns the Coast?"', *Marine Anthropological Studies* 17 (2009): 8-9.

⁶ Jason C. Sharman, 'Offshore and the New International Political Economy,' *Review of International Political Economy* 17 (2010): 1, accessed 23 February 2017, DOI: 10.1080/09692290802686940.

production of subjectivities intersects with architecture.⁷ As Bonnie McCay remarks, the liminality embedded in littoral boundaries challenges the very concept of property, ownership, and spatial appropriation.⁸ Furthermore, from Sandro Mezzadra and Brett Neilson's perspective, the very analysis of the boundary can be a method in itself, whereby the *productive* power of the border unveils the strategic role it plays in global politics.⁹ The shoreline is regarded here as the exercise of ambiguity according to its literal definition, as it is not only a research *object*, but an epistemic angle that provides insight on the tensions that blur the boundaries between inclusion and exclusion at the frontiers of capital.¹⁰ The immaterial condition of the shoreline that results from its contestation in international law means that any working methodology can only approximate that condition, and that at different times it must approximate it in different ways.

In a material sense, the conventional approach to studying and analysing the shoreline would be to calculate the movement of sands, topographic contours, and geological maps, mainly within the fields of coastal engineering, urban planning, and environmental and legal studies.¹¹ Architectural perspectives have focused on the urban spectacle of mega-resorts – a typology that played a crucial role in the financial bubble – and the corruption behind planning agreements.¹² As necessary as this may be, there is not much analysis that critically challenges land use, zoning, and speculation on the boundaries of the coast. This thesis aims to rectify that imbalance by investigating that speculation and looking at the ambiguity of boundaries as well as the loopholes they have produced and are still producing. This speculation marks an urgent need to understand the spatial relations between coastal zoning and the global circulation of capital.

The bureaucratic representation of the shoreline as a flat, static margin does not take ecological dynamics into account. Twists of the shoreline in legal documents do not explain where tides are active, but rather where municipal powers fail to make ethically, socially, and ecologically sound decisions in the legislation of the coast. Being a complex ecological *dispositif*, the

⁷ Sandro Mezzadra and Brett Neilson, *Border as Method, or, the Multiplication of Labor* (Durham: Duke University Press, 2013), 54.

⁸ McCay, op. cit., 9.

⁹ Mezzadra and Neilson, op. cit., preface.

¹⁰ Ibid.

¹¹ Miguel Ángel Losada et al, 'History of Coastal Engineering in Spain,' in *History and Heritage of Coastal Engineering*, ed. Nicholas C. Kraus (New York: ASCE, 1996), 465-466; Fikret Berkes, *Coasts for People: Interdisciplinary Approaches to Coastal and Marine Resource Management*, New York: Routledge, 2015; Rosemary E. Ommer, *Coasts Under Stress: Restructuring and Social-Ecological Health*, Montreal and Kingston: McGill-Queen's University Press, 2007; Philip E. Steinberg, *The Social Construction of the Ocean* (Cambridge: Cambridge University Press, 2001). The study by Curtis Ebbesmeyer and James Ingraham is particularly remarkable in its approach. They analysed ocean currents by looking at the recovery of 61,280 floating untied Nike sneakers on the US coast from a wrecked container ship. See Curtis Ebbesmeyer and James Ingraham, 'Shoe Spill in the North Pacific,' *Eos* 73 (1992): 361-365.

¹² Isabel Concheiro, 'Interrupted Spain,' in *After Crisis: Contemporary Architectural Conditions*, ed. Josep Lluís Mateo (Baden: Lars Müller, 2011); José Luis Díez Ripollés et al, *Prácticas Ilícitas en la Actividad Urbanística: Un Estudio de la Costa del Sol* (Valencia: Tirant Lo Blanch, 2004); José Manuel Naredo and Federico Aguilera Klink, *Economía, Poder y Megaproyectos* (Tegui: Fundación César Manrique, 2009); Federico Aguilera Klink, *Calidad de la Democracia y Protección Ambiental en Canarias* (Tegui: Fundación César Manrique, 2006); Mariano de Santa Ana, *Paisajes del Placer, Paisajes de la Crisis* (Tegui: Fundación César Manrique, 2004); Rafael Aníbal, *Aquellos Maravillosos Años: Escándalos de Corrupción y Despilfarro en España Durante la Última Década* (Madrid: Continta Me Tienes, 2012); Antonio Romero and Miguel Díaz, *Costa Nostra: Las Mafias en la Costa del Sol* (Sevilla: Atrapasueños, 2009); Ángel Menéndez Reixach, 'La Nueva Ley de Costas: El Dominio Público como Régimen Jurídico de Especial Protección,' *Estudios Regionales* 22 (1988): 113-123; Ramón Fernández Durán, 'El Tsunami Urbanizador Español y Mundial,' *Ciudades Para un Futuro Más Sostenible*, April 2006, accessed 10 June 2017, <http://habitat.aq.upm.es/boletin/n38/arfer.html>; Marc Badal Pijuan and Daniel López García, *Los Pies en la Tierra: Reflexiones e Iniciativas Hacia un Movimiento Agroecológico* (Barcelona: Virus, 2006).

fluctuation of the shoreline must be studied from a combination of zoological, visual, financial, and risk perspectives. This multidisciplinary approach is inspired by paradigms like the Camouflage Centre established in 1940 by the British War Office that included a magician, a surrealist painter, and a zoologist to develop a logic of misdirection.¹³ In a similar way, the research method for this study of the shoreline looks to ambiguity as a form of governance and incorporates the material and visual relationships between the climatic events, oceanic currents, sediments, shell companies, salt, glaciers, lava; life and non-life, humans and nonhumans that are allowed to – or barred from – inhabiting coastal and intertidal zones.

The shore is not a fixed and measurable object, but a dynamic set of relations. The sea never stops moving, and even amid the discord of the global political economy, it is a space of contradictions and alternatives, of images and laws, of labour and dreams.¹⁴ Therefore, rather than analysing the shoreline from the perspective of actor-network theory, the shoreline is explored here as a set of singularities and exceptions, many times isolated from each other: as a financial device that regulates mortgages, indebtedness, evictions, offsetting, insurance, conservation, housing, and real estate interests. These relationships might appear only loosely connected to the reader. However, given that the shoreline is a line that does not exist outside the modern Western legal paradigm, this thesis could never successfully visualise it without apparently disjointed cases and relations.

While the clear demarcation of boundaries has been well-studied, much less has been done in spatial theory on the notion of productive ambiguity, most work being on land use, vacant properties, and urban planning. The blurry definition of a dominion – the extents of possession – can lead us to think about an alternative theory of spatial production that results from the fragility, uncertainty, and violence of the limit. This thesis aims to elaborate a field of knowledge based on the limit as a *dispositif* and proposes the construction of ambiguity as a binary relationship between spatial margins and profit margins.

The shoreline is not a logic of fictitious capital *accumulation* based on supply and demand (consumed now with the promise of a future return), but rather an object of fictitious *commodification*, referring to the ability of neoliberalism to turn almost anything into value.¹⁵ It does not apply a Marxist labour theory of value, as the research here cannot rely on value being *objective* or value as the calculation of the cost of production. Instead, the idea of commodity fetishism is expanded through marginal theory of value.¹⁶ The notion of marginal utility proves more useful for this thesis: taking value as a *biased* matter, arbitrary and based on changing patterns of pleasure, satisfaction, and desire, how valuable is a commodity to any individual? Instead of following the postmodern approach of deterritorialisation where limits disappear, this thesis proposes a framework of *littoralisation*, whereby limits appear, but the speculative

¹³ Michael Taussig, 'Zoology, Magic, and Surrealism in the War on Terror,' *Critical Enquire* 34 (2008): 107-108.

¹⁴ Philip E. Steinberg, *The Social Construction of the Ocean* (Cambridge: Cambridge University Press, 2001), 210.

¹⁵ Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, 1957), 68-76; Wolfgang Streeck, *How Will Capitalism End?* (London and New York: Verso, 2016), 61

¹⁶ Marginalists William Stanley Jevons, Carl Menger and Léon Walras developed it to explain paradoxes like difference in value between diamonds and water. Value not related to price, but to the utility assigned to the object.

financial relations around them makes them malleable enough to both control and resist at the same time. This is the basis for understanding architecture as financial littorals: a juxtaposition of law, territory, and both profit and spatial margins.

By visualising the forces that shape the littoral condition, new paradigms around the liquid and fluid encounter between land and sea become possible: where the tidal zone becomes synonymous with a movable freehold.¹⁷ Through a practice-based methodology, an experimental series of visual explorations unpacks the multi-scalar complexity embedded in the making and representation of a-legal boundaries.

To understand the condition of the shoreline as a political-economic practice, it is necessary to look at the agents involved and the spatial frictions between them. The analysis of the shoreline is organised in this thesis around different types of spatial conflicts: politician/developer vs. architect; investor/insurer vs. environmentalist/dweller; and banker vs. indebted household (Figs. 9, 10). The main body of the thesis is structured in three chapters with corresponding project dossiers that interrogate the immateriality of the shoreline as a series of financial littorals. These forms of power are investigated at a spatial level through three principles: the Shore, the Offset, and the Offshore. Each is a concept used in geography, urban planning, finance, and ecology with different meanings; but each of them also requires the existence of a baseline, an immediate set back from that reference line, and a faraway displacement of space, obligations, responsibility, money, energy, beings, or goods. They are all essential to understand the ways in which power and capital flow.

CHAPTER ONE, 'Shore', investigates the invention of the coast as a site for the circulation of capital by looking at the Spanish littoral. On 4 April 2006, for the first time in the history of democratic Spain, a municipal council was dissolved. In the Mediterranean town of Marbella, the core of the Costa del Sol, the Court of Justice revealed a network of politicians-turned-real-estate-investors who had been using their power to adjust the limit between buildable land and the coastal commons in their own interests. The real estate boom in the Spanish Mediterranean, and the housing crisis that followed, is analysed here through failures in the making of the shoreline of the entire country. The 1988 Coastal Law and its subsequent reforms have not protected nature as initially promised. Instead, they have instrumentalised scientific reports to invent a shoreline, where landscape margins have become entangled with real estate profit in an endless number of ambiguous situations. Spanish city planning schemes and municipal master plans became powerful instruments in the redistribution of surplus value and are now at the forefront of a national political crisis.¹⁸ Using satellite mapping, microscopic salinity reports, and other scientific evidence, the power to reclassify space and turn nature into developable land has led to a second crisis of objective data and the exposure of para-empiricism.¹⁹ As Laura Kurgan notes, even if there is no such thing as neutral data, this uncertainty need not create problems; instead, it is only through a condition of para-empiricism

¹⁷ McCay, op. cit., 9.

¹⁸ Andrés Betancor and Javier García-Bellido, 'Síntesis General de los Estudios Comparados de las Legislaciones Urbanísticas en algunos Países Occidentales', *Ciudad y Territorio Estudios Territoriales*, 127 (2001): 99.

¹⁹ Laura Kurgan, *Close Up at a Distance: Mapping, Technology & Politics*, (Brooklyn: Zone Books, 2013), 34.

that we have a chance of operating responsibly in the world.²⁰ The final outline of the Spanish shoreline has not yet been demarcated in its entirety; evictions and eminent domain have trapped it in court.

Project Dossier 1: The practical component of this chapter consists of a visual analysis of the twisting boundaries demarcated along the coastal commons of Spain, between 1988 and 2016. Comparing discrepancies between the demarcation of the shoreline and satellite mapping served as a method for investigating the crisis of empiricism and the political constructions of the shore. The images expose a logic of self-interest. At the same time, coastal fictions and an aesthetic of ambiguity in archival and contemporary souvenir postcards (from the 1970s to the 2010s) demonstrate a shift in the tourist gaze.

CHAPTER TWO, 'Offset', investigates how flood risk is reshaping inhabitation and ecology and how both the aftermath of Hurricane Katrina and the recent financial crisis have shifted real estate investment toward natural capital. In September 2006, one of the largest homeowners insurers in the US expanded the 'coastal area' from 1000 feet to one mile from the high water mark.²¹ The insurance-engineering of the shoreline is investigated here through the ways both space and responsibility are offset by the disappearance of coastal landscapes. 'Natural capital' not only creates new financial products out of littoral environments, but also plays a crucial role in the urbanisation of wildlands. Mitigation banking is a financial practice based on offsetting units of coastal biodiversity: it swaps destruction here with reconstruction there. According to the 'No Net Loss' policy, any development that destroys natural habitats has to be recouped by the restoration of an 'equivalent' landscape elsewhere. The net amount of biodiversity is meant to remain 'the same' in terms of surface, quality, or quantity. With this logic of offsetting and nature banking, architecture acquires the agency to destroy, displace, and replicate natural landscapes miles away from their original location.

Project Dossier 2: This investigates how engineering interests, in particular the US Army Corps of Engineers in Alaska, declared coastal settlements at risk in order to provide mitigation solutions. It explores the ways in which future projections of the shoreline are modelled and how they can be challenged through alternative forms of modelling the future of climate change. The project materialised as a collectively produced film about the construction of the shoreline in order to generate profit in Kivalina, Alaska (2014). In a second part, the act of extracting value from nature is represented here through the emergence of environmental services and habitat banking. By looking at the species in the global market of compensation for coastal damage, the neoliberal logic of offsetting space becomes clearer. The resultant sound installation at the European Investment Bank in Luxembourg (2016) featured the world's top-banked species.

²⁰ Ibid, 35.

²¹ State Farm Insurance. See Sandra Fleishman, 'Sea Change in Insurers' Coastal Coverage,' *Washington Post*, 30 December 2006, <http://www.washingtonpost.com/wp-dyn/content/article/2006/12/29/AR2006122900626.html>

CHAPTER THREE, 'Offshore', investigates the shift from owning the shore to offshore ownership. It explores how the ambiguous condition of offshoring – operating from an extraterritorial, exceptional space – allows shell companies to control the global housing market. At the same time, it investigates how offshore extra-legality has allowed housing rights. When exceptions to property rights become a form of biopower, the same exceptions can also be used to contest such practices. This chapter investigates ongoing tactics to resist foreclosures that emerged in the European tax haven of Andorra and the outermost region of the Azores: house lotteries that crowd fund debt relief. These lotteries, which operate beyond the margins of national governance in territories with special status, have recognised the opportunities in contesting the right to housing through some of the same techniques of risk and legal maneuver that more typically characterise corporate approaches to neoliberalism. This chapter is indebted to Michel Feher's notion of 'investee activism' as a way to explore resistance in the age of neoliberal appreciation.²² Once society ceases to be organised by employer-employee relationships, new forms challenging speculation and neoliberal power emerge through the 'investor-investee' condition. Hence, investee activism involves identifying modes of social antagonism specific to financial markets (stakeholder activism in the stock market, borrower activism in the bond market, collateral guarantor activism in the derivatives market, etc.) and speculating on the potential for contestation and resistance.²³

Project Dossier 3: This dossier compiles a series of independent house lotteries implemented in different countries. Taking as reference legal contracts developed for house lotteries in Andorra and in the Azores, another house lottery was organised in Lisbon to investigate the procedure of challenging indebtedness from within the Portuguese legal system. Rather than publicly shaming abusive powers and threatening their reputation, this act embraces a-legality and circumventions of the law as a mode of offshoring-based resistance.

Ambiguity as Control as Resistance

Fences, enclosures, boundaries, walls, and houses are the five constructed limits that Carl Schmitt used to define or contain a secured space—the fence being the original condition for safety, and walls and houses its immediate consequence in the form of shelter.²⁴ The German term for enclosure, *Hegung*, indeed connotes instability, from its Greek root *Agon* (competition, agonism) and the contestation of two realities along an intermediary, arbitrating line.²⁵ This friction relies on the determination of a degree of secured belonging, where the outside, as

²² Michel Feher, 'On the Age of Appreciation: Lectures on the Neoliberal Condition,' Lecture series, Goldsmiths University of London, 2013-15.

²³ 'Investee Activism,' working group with Michel Feher, <http://investeeactivism.blogspot.co.uk/>

²⁴ Schmitt takes this idea from Germanic linguist Jost Trier, who had only referred to the first three (*Zaun*, *Hegung*, *Grenze*): 'In the beginning was the fence. Fence, enclosure, and border are deeply interwoven in the world formed by men, determining its concepts.' See Carl Schmitt, *The Nomos of the Earth in the International Law of the Jus Publicum Europaeum* (Berlin: Telos Press, 2006), 42.

²⁵ 'Zaun und Hegung stecken in vielen Kampfwörtern. Hegung gehört zum Wesen des Spiels. Ob Spielbrett oder Spielplatz – Rand und Hegung sind es in jedem Falle, die den Raum bestimmen, in welchem das Gesetz des Spiels herrscht, aus welchem ausgeschlossen sein soll, was in Gedanken, Formen, Taten spiefremd wäre, während ihm sein Recht im Draußen nicht bestritten wird. *ludus* und *Spiel* sind Hegewörter, weil die Sonderwelt des Spiels eine Welt mit eigenem Nomos ist.' See Jost Trier, 'Zaun und Mannring,' in *Beiträge zur Geschichte der deutschen Sprache und Literatur* 66 (1942): 232.

Hardt and Negri remark, is constructed from within.²⁶ Indeed, power is mainly realised at the margins of containment, where borders are flexible and identities are hybrid and fluid.²⁷

The logic of enclosing space emerged out of the ownership of earth and the desire for profit.²⁸ From historical practices that planted hedges as fences, to contemporary financial hedge funds, the act of *hedging* consists of limiting risk while maximising return on investment.²⁹ The opposite of such hedged enclosures is an ambiguously defined space, which becomes *a priori* a disruptive force (Figs. 11, 12). This has been previously studied in the fields of law, international relations and bilateral treaties, political economy and conflict resolution, Marxist theory, and uncertainty and risk analysis.³⁰ However, this thesis neither challenges how capitalism removes market walls while keeping accurate borders nor critiques the relationships between uncertainty, ambivalence, and opacity. Rather, it investigates how borders are intentionally thickened ad infinitum. It aims to understand the limit – not from an economic perspective, but from the political condition of littoralised space.

As Reviel Netz remarks in *Barbed Wire*, with a closed line, and the prevention of motion from outside the line to its inside, the idea of property emerges.³¹ Indeed, violence often controls motion not by making the recipient static but by moving the recipient in the desired direction, perpetuating a control system based on a differential regime. Fences around animals or human prisoners have embedded with them a system of property and ‘civilisation and progress’. Modernity, as Netz argues, made possible a total asymmetry between the powerful and the powerless.³² In his *Discourse on the Origins of Inequality*, Jean-Jacques Rousseau also questions the validity of the fence as the materialization of possessions:

The first man who, having fenced off a plot of land, thought of saying, *this is mine*, and found people simple enough to believe him, was the real founder of civil society.³³

Rousseau’s boundary is here a legal fiction. Barry Smith and Leo Zaibert cite this assertion in their analysis of *The Metaphysics of Real Estate* to identify fencing as a way of creating something that did not exist before; Wendy Brown as well quotes it in *Walled States, Waning Sovereignty* to refer to the enclosure as the legitimization of secular democracy; Stuart Elden opens *The Birth of Territory* with it to locate the emergence of spatial conflicts; and Reinhold Martin quotes it to discuss the inequality embedded more than ever in the architectural processes through which we are governed by real estate.³⁴ These four citations across the

²⁶ Michael Hardt and Antonio Negri, *Empire* (London and Cambridge: Harvard University Press, 2000), 184.

²⁷ Ibid, 39.

²⁸ Andro Linklater, *Owning the Earth: The Transforming History of Land Ownership* (London: Bloomsbury, 2013), 15.

²⁹ ‘Hedge Fund,’ Investopedia, accessed 2 March 2017, <http://www.investopedia.com/terms/h/hedgefund.asp>

³⁰ The lack of clarity in semantics implies weakness in discourse, as the existence of as many as 23 different meanings on an average for the 500 most used English words allow for ambiguous interpretations to happen. Oxford dictionary’s definition in Himani Singh, ‘Language of Law: Ambiguities and Interpretation,’ *AJRHASS* 13 (2013): 122-123. Ambiguity has often been confused as a term with vagueness and ambivalence, specially in social theory and cognitive psychopathology (Zygmunt Bauman, *Liquid Modernity*).

³¹ Reviel Netz, *Barbed Wire: An Ecology of Modernity* (Middletown, CT: Wesleyan University Press, 2004). Introduction.

³² Ibid, 234.

³³ Jean-Jacques Rousseau in Stuart Elden, *The Birth of Territory* (Chicago: Chicago University Press, 2013), 1.

³⁴ Barry Smith and Leo Zaibert, ‘The Metaphysics of Real Estate,’ *Topoi* 20 (2001): 161-172; Wendy Brown, *Walled States, Waning Sovereignty* (New York: Zone Books, 2010); Stuart Elden, *The Birth of Territory* (Chicago: Chicago University Press, 2013); Reinhold Martin, Susanne Schindler and Jacob Moore, *The Art of Inequality: Architecture*,

fields of geopolitics, economy, political philosophy and architecture use Rousseau's quote to expose the fictional character of the boundary as a producer of subjectivities. The boundary becomes an imaginary line between two nations, separating the imaginary rights of one from the imaginary rights of the other.³⁵

Despite Rousseau's association of enclosures as arbitrary forms of ownership and decision-making, Elden contests that 'civil society' at the time of Rousseau was still meant in opposition to the 'state of nature', instead of the Hegelian opposition between civil society and the state.³⁶ Smith and Zaibert, however, look at property rights as a way to analyse the power of the state.³⁷ Although *owning* property shares an etymological origin with *sitting* in German (*besitzen* - *sitzen*) and Latin (*possidere* - *sedere*), a ruler sitting on a throne cannot claim to possess a well defined object, given that the symbolic practice of sitting gives no clue as to what the boundaries of that object might be; it is too far from the throne to be touched by the ruler's body.³⁸ Hence, the ruler needs the abstraction of the boundary, a line that does not exist, as a mechanism to multiply his/her presence and teleport authority to the material edge of the dominion. In Brown's terms, the growing transnational flows of capital, people, ideas, goods, violence, and political and religious fealty both tear at the borders they cross and crystallise within them, thus compromising sovereignty from its edges and from its interior.³⁹

Rousseau states that the cultivation of land led to a necessary division of space, and that is for him the origin of the clearly demarcated boundary.⁴⁰ However, the Eurocentric genealogy of the appearance of the limit can be contested by ancient human settlement along the Nile. As a highly organised agricultural society, space was subdivided but edges were blurry, contrary to clearly fixed margins. Given that the technology to measure sharp lines had not yet been developed, cultivation cannot be considered as the origin of property lines. Without any known formal cadastral structure, fields along the Nile River Delta were redrawn after the annual flood, redistributing patches of land submerged anew by the rich silt sediments that organised boundaries around three flood-based seasons.⁴¹ It was not until the later development of *agrimensura* (land surveying) in the Roman Empire that space was rigorously measured and mapped by the state for legal purposes (Fig. 13).⁴²

To sustain biopolitical control of peasants, property boundaries needed to be clearly demarcated in order to regulate ownership of space and fiscal fertility. But geometric surveys did not extend beyond agricultural fields. They did not define how Roman rulers or citizens

Housing and Real Estate, a Provisional Report (New York: The Temple Hoyne Buell Center for the Study of American Architecture, 2015).

³⁵ Ambrose Bierce, *The Unabridged Devil's Dictionary*, (Atlanta: University of Georgia Press, 2003).

³⁶ Stuart Elden, *The Birth of Territory* (Chicago: Chicago University Press, 2013), introduction; Andro Linklater, *Owning the Earth: The Transforming History of Land Ownership* (London: Bloomsbury, 2013), 15-16.

³⁷ Smith and Zaibert, op. cit., 161-162.

³⁸ Ibid.

³⁹ Wendy Brown, *Walled States, Waning Sovereignty* (New York: Zone Books, 2010), 22.

⁴⁰ Jean-Jacques Rousseau, *Discourse on the Origin and the Foundations of Inequality Among Men*, trans. Ian Johnston (CPSIA), 42.

⁴¹ *Akhet* or inundation (June-September); *Peret* or growing season (October-February); *Shemu* or harvesting season (March-May).

⁴² Elden, op. cit., 53-55.

imagined the world. Space was perceived as a series of routes surrounded by ambiguous zones and did not refer to area but to distance and proximity.⁴³ Anything beyond the agricultural line or outside the path was part of the unmeasured (Fig. 14). If not conveniently useful as a grey zone, the uncharted margins were always subject to improvement, settlement, colonisation, or development. Those same zones beyond the lines of measure constituted zones of refuge. After the collapse of the Roman Empire, Germanic peoples conceived their boundaries as indefinite forests (*forst*) or marshes (*marks*) that functioned as the margins of inhabitation to be claimed through war. 'Barbarian' and 'uncivilised' peoples possessed no landed property structures in their nomadic and unsettled cosmovision of space; they lived beyond the reach of established medieval powers along the so-called outlaw corridor of Bohemia.⁴⁴

Regarding the appropriation of water, different degrees of ambiguity followed different cultural traditions. The Indian Ocean was originally perceived as a great void beyond coastal powers, whereas for the Roman Empire the Mediterranean was between freedom and enclosure, and could foster stewardship but not ownership. Even more extreme, the waters of Micronesia were clearly demarcated in a way akin to land-space and subject to territorial control.⁴⁵ By creating lines to appropriate space individually or collectively, power structures have historically invented new geometries to control landscapes, waters and people. In the European Middle Ages, landed property regimes relied on cadastral maps and navigational charts as efficient and violent forms of value extraction; in sum, cartography was at the service of the state.⁴⁶

Medieval mapmaking and agrarian studies gave rise to boundaries as taxation devices, where enclosures facilitated the circulation of commodities. In *The Art of Not Being Governed*, James Scott analyses how conventional maps, in which a kilometre is always a kilometre regardless of how the terrain or body of water affects human mobility, are profoundly misleading.⁴⁷ Mapmaking could instead rely on another metric that corrects that friction or distortion. Referring hill societies in Burma, Scott remarks how the government of time and distance were crucial to the authority of the ruler. The cultivation of wet-rice has always been paradigmatic of early state-making in Southeast Asia, where the limits to the state were decided by the journey of a cart transporting bulk foodstuffs to feed population or collect tributes. Resistance relied on residence beyond the mapped line (Figs. 15, 16). The exchange that governmental authority is able to control and appropriate is what Scott refers to as *state* space, as opposed to the geography intrinsically resistant to state control, or *nonstate* space.⁴⁸ A threshold of distance

⁴³ Jordan Branch, *The Cartographic State: Maps, Territory and the Origins of Sovereignty* (Cambridge: Cambridge University Press, 2014), 63; Ricardo Padrón, *The Spacious Word: Cartography, Literature, and Empire in Early Modern Spain* (Chicago and London: Chicago University Press, 2004), 58-59.

⁴⁴ The only exception being the Catholic pilgrim (*peregrinus*) who also wandered and resided beyond any territorial limits, but authorities were not hostile towards him. James Scott, *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia* (Yale University Press, 2009); and Daniel Heller-Roazen, *The Enemy of All: Piracy and the Law of Nations* (Brooklyn: Zone Books, 2009).

⁴⁵ Philip E. Steinberg, *op. cit.*, 40-42.

⁴⁶ Roger J.P. Kain and Elizabeth Baigent, *The Cadastral Map in the Service of the State: A History of Property Mapping* (Chicago and London: University of Chicago Press, 1992); Jordan Branch, *The Cartographic State: Maps, Territory and the Origins of Sovereignty* (Cambridge: Cambridge University Press, 2014), 62.

⁴⁷ James Scott, *op. cit.*, 41.

⁴⁸ *Ibid.*, 47-48.

appears between the ruler's headquarters and a remote area, where the cost of collecting tax (labour and fodder for the oxen) exceeds the value of the collected taxes. State evasion appears therefore in settings where political control remains subject to the 'friction of distance' or its 'fading sovereignty'. Hence, the territory no longer precedes the map, nor survives it. It is the map that precedes the territory.⁴⁹

By governing the equation of velocity (space/time), the fiction of the mapped boundary can be challenged through ambiguous landscapes. Nonstate spaces facilitate zones of refuge that escape territorial control: the impenetrable marshes on the lower Euphrates were nonstate space until Saddam Hussein drained them to subject its inhabitants to the rule of the state; the Pontine Marshes near Rome were drained by Mussolini; the Great Dismal Swamp on the North Carolina-Virginia border, the Pripet Marshes in Poland, and the mangroves of the Philippines and Indonesia follow a similar logic.⁵⁰ Although Scott qualifies the constitution of nonstate space as an anarchist history, people seeking refuge in the margins did not always intentionally confront the sovereign's power. They might have simply aimed for a more individualistic life, and it is unclear whether they ever meant to set up a parallel society. The liminality of ambiguous landscapes throughout history has led colonial power regimes to appropriate them; but they have also been sites of refuge for all kinds of outcasts. According to that logic, the 'waste-land' was always the territory occupied by indigenous inhabitants on a haphazard basis.⁵¹

The margins of the Medieval European city operated under a logic similar to the nonstate space of maroon wetlands, swamps, and mangroves. The zone beyond the city walls was the refuge for bandits and outlaws, but also a productive space for inhabitants within the city walls. Unruly places trapped between a-legal belonging to the city and to the countryside, it was precisely their physical proximity to state space that made them an exoparasite: unsafe and unstable social environments that fed on the city's fortified body while lacking fire insurance, poor relief, or the right to be defended in an attack.⁵² The suburbs beyond the city gates were a site of immunity, where smuggling and trading bypassed tolls and tariffs; where hospitals treated infectious diseases that could otherwise spread among 'real' citizens; where cemeteries with rotting corpses would keep plagues in a distant soil; where seductive brothels facilitated illicit sexual escapades; and where money-lending could be carried out by sacrilegious groups such as the Jews. The margins were the site of a productive, renegade economy that was not at odds with the pious activities inside the city walls; quite the contrary, it was highly regulated and mutually dependent.⁵³

⁴⁹ Jean Baudrillard in Branch, op. cit., 68.

⁵⁰ James Scott, op. cit., 26-27.

⁵¹ Andro Linklater, op. cit., 235; Vittoria Di Palma, *Wasteland: A History* (New Haven and London: Yale University Press, 2014), 14-15.

⁵² Yair Mintzker, 'What Is Defortification? Military Functions, Policy Roles, and Symbolism in the Demolition of German City Walls in the Eighteenth and Nineteenth Centuries,' *Bulletin of the GHI* 48 (2011): 42.

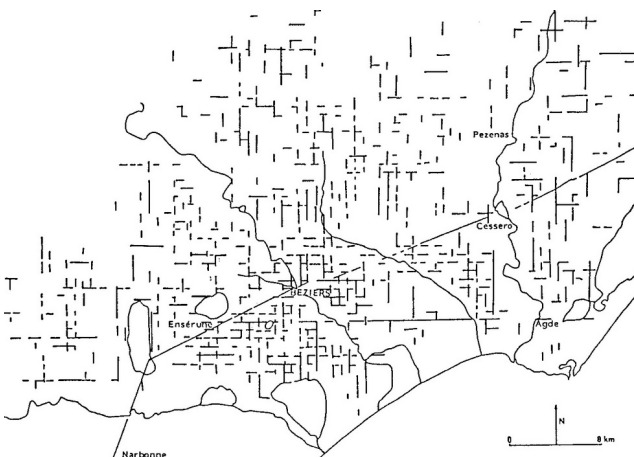
⁵³ Ricardo Padrón, *The Spacious Word: Cartography, Literature, and Empire in Early Modern Spain* (Chicago and London: Chicago University Press, 2004), 58; Jordan Branch, *The Cartographic State: Maps, Territory and the Origins of Sovereignty* (Cambridge: Cambridge University Press, 2014), 48.



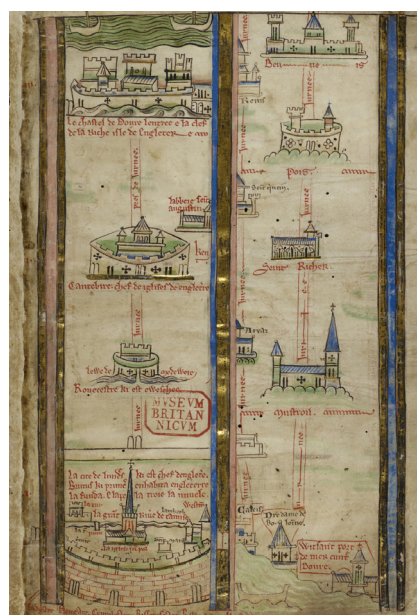
9-10: Manufacturing of the Spanish coast according to different interests from politicians and developers: creation of a landfill to extend the shoreline seaward and make the holiday homes on the waterfront be 'far enough' from the water (above); and fishermen's houses to be demolished for being 'too close' to the water (below). Both cases in Cho Vito, Tenerife.



11-12: *Beating the Bounds*. Yearly event to make inhabitants remember the boundaries of the borough by walking along them (Hungerford, UK, 1913); similar festivity beating local kids with rods at different landmarks along the limits (Surrey, UK, ca. 1950s).

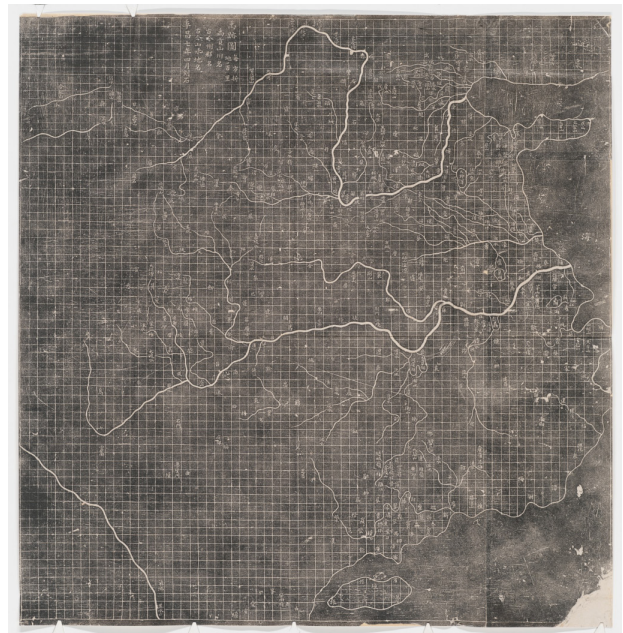


13: Contemporary remains of the Roman centuriated landscape. Béziers, France.



14: Medieval itinerary map: the route from London to Jerusalem. Matthew Paris, between 1250-1259.

15: The Yǔjī tú Map subdivided China into a grid of 100 li squares. James Scott uses the ancient Han proverb 'Do not make a sale grain over a thousand li', to refer to the friction of the terrain, market efficiency in tax collection and nonstate space (stone carving, 1136).



16: Index Chart of the Great Trigonometrical Survey of India by the British Empire to take control of the subcontinent. James Walker, 1870.



17: Global Linear Thinking: Different geographers interpretations of the same Papal Meridian. It assigned the Planet to the Spanish and Portuguese Empires, 1493-94. Per definition, it was a line 100 leagues off Cape Verde (later changed to 370 miles), whereby Spain was entitled to evangelise all the territories in the very ambiguous space 'south of a north-south' line.



From Borders as Circulation of Capital to Capital as Circulation of Borders

For Carl Schmitt, land-appropriation (*Landnahme*), or the taking of the soil, is at the core of the *nomos*, the way to govern the planet.⁵⁴ Embedded in his notion of 'global linear thinking' – the history of colonialism, of conquering space – is a history of settlement in which order and orientation are tightly combined. The first global lines appeared, according to Schmitt, in 1493 as a form of domination, when the earth was cut into two halves and assigned to two different owners.⁵⁵ By issuing the Bulls of Donation, one of the earliest European diplomatic documents on America, Pope Alexander VI shared out the world between the two main maritime powers of the time. After cutting a circular line from pole to pole, the Pope granted one half of an unknown sphere to the Spanish Catholic Kings of Castile and Leon, and the other half to Portuguese King John II. Rather than drawn, the geometry of the Papal Meridian was written in words, given the lack of a mathematical method to accurately visualise such a line on a map.⁵⁶ The Papal Meridian described an imaginary north-south line situated 100 leagues west of the Azores and Cape Verde islands that split the earth between east and west.⁵⁷ Every conquered territory westward of the line would become property of the Spanish Crown, while anything eastward would fall under Portuguese ownership.⁵⁸ This early act of *real estate* speculation was literally and legally a matter of *royal state*.⁵⁹

Ambiguously written, the Papal Meridian took for granted the Spanish league as a unit of length equalling 3 miles; but by the end of the 15th century a value equalling 4 miles was simultaneously in use.⁶⁰ Even Schmitt confuses the units, as he refers to 100 miles instead of 100 leagues.⁶¹ Nonetheless, contrary to the current logic of international politics and border disputes, the inaccuracy of measurement of the Papal Meridian did not lead to an impossible agreement at the time. Quite the opposite, it was precisely that geometric inaccuracy that led to further renegotiation between both parties, where no one appeared to lose space by agreeing on an uncharted frontier (Fig. 17).⁶² Troops could be sent to fight and die for boundaries that

⁵⁴ This is magnified if the relation between land and sea and the domination of airspace are added to the equation. See Carl Schmitt, *The Nomos of the Earth in the International Law of the Jus Publicum Europaeum*, trans. G.L. Ulmen (Berlin: Telos Press, 2006), 80-87.

⁵⁵ Ibid, 89.

⁵⁶ Even though Ptolemy's *Geography* was re-introduced in Western Europe and translated into Latin in the early 15th century, exposing humanist scholars to a set of map-making techniques forgotten during the Middle Ages, it did not apply to the Bulls of Donation. See Jordan Branch, *The Cartographic State: Maps, Territory and the Origins of Sovereignty* (Cambridge: Cambridge University Press, 2014), 6.

⁵⁷ '[...] should any of said islands have been found by your envoys and captains, give, grant, and assign to you and your heirs and successors, kings of Castile and Leon, forever, together with all their dominions, cities, camps, places, and villages, and all rights, jurisdictions, and appurtenances, all islands and mainlands found and to be found, discovered and to be discovered towards the west and south, by drawing and establishing a line from the Arctic pole, namely the north, to the Antarctic pole, namely the south, no matter whether the said mainlands and islands are found and to be found in the direction of India or towards any other quarter, the said line to be distant one hundred leagues towards the west and south from any of the islands commonly known as the Azores and Cape Verde.' Frances Gardiner Davenport, *European Treaties Bearing on the History of the United States and Its Dependencies to 1648* (Washington DC: Carnegie Institution of Washington, 1917), 75-78. The original text in Latin is in the same volume, 72-75.

⁵⁸ Portuguese King John II would later renegotiate the Papal Meridian by shifting it to a final distance of 370 leagues West from Cape Verde in the definitive Treaty of Tordesillas (1494).

⁵⁹ Andro Linklater, op. cit., 29.

⁶⁰ Some sailors incorporated the corrections discovered during the exploration of the Ocean with new astronomical techniques. See Ricardo Cerezo Martínez, *Cartografía Náutica Española en los Siglos XIV, XV, XVI* (Madrid: CSIC Press, 1994), 33.

⁶¹ Both in the original German text and the translation. See Carl Schmitt, *The Nomos of the Earth in the International Law of the Jus Publicum Europaeum*, trans. G.L. Ulmen. (Berlin: Telos Press, 2006), 89.

⁶² Jordan Branch, *The Cartographic State: Maps, Territory and the Origins of Sovereignty* (Cambridge: Cambridge University Press, 2014), 75.

had no visible landmarks, only linguistic or mathematical existence.⁶³ Like Lewis Carroll's ocean chart in *The Hunting of the Snark*, the completely blank map was such an ambivalent document that everyone could agree on it.⁶⁴

The multiple genocides in the Americas were legitimised by the Pope as part of the evangelising mission of land-appropriation, which was barely addressed in international law.⁶⁵ The resources that the Americas indeed provided for the Spanish and Portuguese Empires took advantage of biased definitions of wilderness and human occupation. Violent spatial appropriation followed Francisco de Vitoria's principle of *dominium eminens* or eminent domain: the power of rulers to take or expropriate property for the public good.⁶⁶ It was lawful for kings and 'great' men to take land from individuals to build palaces and castles, as these buildings theoretically served the public purpose of defending or representing society in political or military affairs.⁶⁷ In Spain, the *Siete Partidas* law book (1260s) stated that rulers could take property for the common good of the land, as long as they were compensated a *just* price according to the view of 'good' men.⁶⁸ Following a similar philosophy, the Laws of Burgos (1512) and the Laws of the Indies (1552) ruled and shaped Spanish inhabitation of the American continents. Their legacy in contemporary politics is still present in the way eminent domain and compulsory purchase operate in Europe and the US. Also still in place are the abuses around what defines the public good or just compensations.

The Laws of the Indies were based on a debate known as the Controversy of Valladolid (1550-1551), when two prominent theologians debated the human or nonhuman nature of the native dwellers of the Americas. On the one hand, Fray Bartolomé de las Casas, inspired by Francisco de Vitoria, advocated for the human rights of American indigenous peoples, based on their proven capacity to build extremely advanced architectures.⁶⁹ On the other hand, Ginés de Sepúlveda relegated natives to nonhumans as a result of their anti-natural ritual of human sacrifice.⁷⁰ Sepúlveda presented the natives as savages and barbarians, in order to place them outside the law and to make their land free and ready for appropriation, for legitimate *occupatio*.⁷¹ De las Casas placed native peoples within the law as humans, but as such they were subject to Christian evangelization. Under either approach, indigenous peoples could be dispossessed of their bodies, space, and beliefs through the management of ambiguous definitions. The boundary between human and nonhuman, godly and ungodly, was less an

⁶³ The mapping of oceanic voyages and discoveries made the governments of Portugal and Spain consolidate, manage and secure cartographic knowledge about their boundaries and frontiers through two new key institutions: the Casa da Mina in Lisbon and the Casa de la Contratación in Seville. Both institutions were meant to create, update, and keep secret master maps of their respective overseas empires. See Ibid, 100-105.

⁶⁴ Lewis Carroll, *The Hunting of the Snark* (London: Book Jungle, 2009).

⁶⁵ Carl Schmitt, *The Nomos of the Earth in the International Law of the Jus Publicum Europaeum*, trans. G.L. Ulmen. (Berlin: Telos Press, 2006), 101.

⁶⁶ Susan Reynolds, *Before Eminent Domain: Toward a History of Expropriation of Land for the Common Good* (Chapel Hill: University of North Carolina Press, 2010), 91-94.

⁶⁷ Susan Reynolds in her work on the origins of eminent domain signals the 1086 Domesday Book and the 1093 Castilian Charter as the two earliest records. See Ibid, 18-19.

⁶⁸ 'Men of good will' being the arbiters of the just value of space is a practice perpetuated even with the first Constitution in 1812. See Ibid, 74-75.

⁶⁹ Luis N. Rivera-Pagán, *Essays from the Margins* (Cambridge: The Lutterworth Press, 2015), 55-56.

⁷⁰ Ibid.

⁷¹ Carl Schmitt, op. cit., 102.

epistemological question and more a matter of expropriating and dispossessing a people of their riches.

Dominium eminens was used by de Vitoria and Hugo Grotius to differentiate between the commons at the beginning of humanity with the security of ownership that allowed people to agree together to form a common civil society.⁷² Invented boundaries led to social structures to secure the legitimisation of ownership together with the powerful right of *supereminens dominium*.⁷³ Both Grotius' visions of *dominium eminens* and *mare liberum* (freedom of the seas) advocated for an internationalist notion of sharing based on *extreme* necessity; either the extreme necessity of any nation to sail its ships across the seas or the extreme necessity of expropriation of foreign lands for the common good of the nation:

The property of subjects is under the eminent domain of the state, so that the state or he who acts for it may use and even alienate and destroy such property, not only in the case of extreme necessity, in which even private persons have a right over the property of others, but for ends of public utility, to which ends those who founded civil society must be supposed to have intended that private ends should give way.⁷⁴

Can any nation give away what it never owned, or discover what already belonged to someone else?⁷⁵

Despite aspiring to end Spain and Portugal's Catholic monopoly over the Earth, Grotius did not propose an open planet for all. He rather aimed to enable his native Holland to take advantage of the plunder of entire continents. His ambiguous rhetoric around collective possession was in favour of protecting and abusing humankind at the same time. Grotius' idea of freedom of the seas, as the opposite to John Selden's notion of enclosed seas (*mare clausum*), was a social construction of marine governance that only considered a freedom-enclosure dichotomy from a Eurocentric perspective.⁷⁶ Contrary to the glorification of Grotius' work, Rousseau criticised his masquerade of *alter*-colonialism, positioning him as a white man, who not only justified slavery, but was also the *idéologue* of barbarous colonisers.⁷⁷

[Grotius] spares no pains to rob the people of all their rights and invest kings with them.

Dominium eminens and the definition of the common good relied on the power of ambiguous judgement and the state of necessity doctrine. Rather than *extreme* necessity, eminent domain is a matter of *created* necessity.⁷⁸ In either John Locke's idea of political power as jurisdiction

⁷² Hugo Grotius, 'On the Law of War and Peace,' Constitution Society, accessed 9 January 2017, <http://www.constitution.org/gro/djbp.htm>

⁷³ Susan Reynolds, *Before Eminent Domain: Toward a History of Expropriation of Land for the Common Good* (Chapel Hill: University of North Carolina Press, 2010), 95.

⁷⁴ Grotius, op. cit.

⁷⁵ Hugo Grotius, *Mare Liberum* (Marston: Amazon, 2015), 8.

⁷⁶ Philip Steinberg, *The Social Construction of the Ocean*, 39-40.

⁷⁷ Hans W. Blom, *Property, Piracy and Punishment: Hugo Grotius on War and Booty in De iure praedae* (European History and Culture, 2009). DOI: 10.1163/ej.9789004175136.i-422

⁷⁸ Engrained in the politics of imperialism there were two approaches performing dispossession based on the created necessity of domination. On the one hand, the British, French and Spanish Empires appropriated land on the grounds of not being occupied by humans. This narrative erased all sorts of indigenous life, by equaling natives with wild animals, and firm land with vacant space. Paradoxically, it could be argued that this racist colonial approach did indeed correspond to indigenous cosmogonies of humans, land, and animals being one single entity. On the other hand, Dutch pioneers in the US sometimes buying land from the natives, bypassed fair contracts by means of controversial exchange rates. This second narrative acknowledged a previous equal owner, but took advantage of the valuation process to expropriate space. See David Schultz, *Evicted! Property Rights and Eminent Domain in America* (Santa Barbara: Praeger, 2009), 14.

over the land or Immanuel Kant's notions of supreme proprietorship of the soil, land appropriation eventually constituted an original spatial order as the source of all further law that has the power to justify decisions based on that necessity.⁷⁹

In the same way that Grotius advocated for eminent domain and freedom of the seas, at a European scale France pushed to open its rivers in order to freely circulate goods and capital, not for the sake of a more united continent, but in order to dismantle the powers in place.⁸⁰ The aim was to increase freedom of trade by freeing circulation along watercourses in the early 17th century. The more mobility German Princes acquired, the faster the predatory Habsburg Empire would dissolve into independent nation-states to the advantage of France.⁸¹ The need for freedom in commerce and circulation would eventually overthrow the neighbouring absolutist powers. The Rhine River, traditionally perceived as the *natural* border of France, shifted from being a divisive boundary to a unifying economic corridor, a destructive frontier to circulate capital.⁸²

Following the opening of European rivers, the 1648 Peace of Westphalia put an end to the ambiguity of sovereignty along natural and naturalised borders. For the first time in Europe, stable and static boundaries were to be internationally respected. And yet, Westphalia, rather than fixing national borders, perpetuated imperial logics based on the demarcation of precise boundaries. Territory is no doubt a geographical concept, but it is first of all a juridico-political one: the area controlled by a certain kind of power.⁸³ The materialization of the treaty into lines on maps started with the Treaty of the Pyrenees (1659), which bounded Spain and France in the eponymous mountains and is considered the first instance of the modern territorial limit as a *natural* boundary.⁸⁴

The myth of Westphalia is a fallacy produced in the 19th and 20th centuries based on the idealisation of sovereignty and 17th century anti-Habsburg propaganda.⁸⁵ In practical terms, the linear and exclusive frontier scarcely existed before the French Revolution, almost 150 years after Westphalia.⁸⁶ It was the great crisis of state legitimacy after 1789 that created the need for a new basis to political authority. In fact, it was only in the aftermath of the Vienna and Paris conferences of 1814-15 that territoriality based on clearly demarcated limits was fully implemented in Europe.⁸⁷ More than the boundary itself, the real innovation of Westphalia was the embassy as a system for extraterritorial exception.⁸⁸

⁷⁹ Carl Schmitt, op. cit., 47-48.

⁸⁰ Mazarin did a series of hydrographic studies for engineering the Vistula, the Oder, the Elbe, the Weser, the Ems and the Rhine rivers; planned to circumvent the Danube valley; and reconnect the Atlantic and the Mediterranean by the Languedoc Canal that would avoid sailing around Spain and the Habsburg's tolls in Gibraltar. See Pierre Beaudry, 'The Economic Policy That Made The Peace of Westphalia,' *Executive Intelligence Review* 30 (2003): 20.

⁸¹ Ibid, 22.

⁸² Ibid, 20-21.

⁸³ Elden, op. cit., 9.

⁸⁴ Branch, op. cit., 30.

⁸⁵ Andreas Osiander, 'Sovereignty, International Relations, and the Westphalian Myth', *International Organisation* 55 (2001): 251-87; Branch, op. cit., 30.

⁸⁶ Malcolm Anderson, *Frontiers: Territory and State Formation in the Modern World* (Cambridge: Polity Press, 1996), Introduction.

⁸⁷ Branch, op. cit., 166.

⁸⁸ Ibid, 31.

From the perspective of urban transformation, what did follow from Westphalia was the defortification of cities across Europe, whereby urban conglomerations started to loosen their edges.⁸⁹ Hundreds of Medieval walls, which had served as clear boundaries between the legal and the illicit city for centuries, began to be dismantled. The boundary of the urban realm became more and more abstract, subject to regulations, and fluid in the impact of its power. In Spain, that boundary also became financial with the first large-scale speculative real estate operation, in the year 1600. The entire court of King Philip III moved from Madrid to the countryside of Valladolid for a period of just six years. The change of capital was promoted by the King's favourite, the Duke of Lerma, who argued against the lack of fresh and hygienic air in the city and the potential menace of revolts. Economist José Manuel Naredo argues that the actual intention was to obtain vast economic profits by turning rural wastelands into a designated imperial site.⁹⁰ The fields, which the Duke of Lerma had previously bought at very low value, were sold at an inflated price to the court for its new seat. He repeated the stunt when the court returned to Madrid. Power, for Fernand Braudel, is the product of bringing together the state and capitalism into a common project of development; here, the entanglement of capitalism and the creation of a capital go hand in hand.⁹¹

Capitalist speculation around the value of land transformed cities' historical medieval limit into public promenades for enlightened pedestrians, with paradigmatic cases all across Europe that reframe the role of the state towards life in its cities. De-fortifying medieval enclaves in Europe turned boundaries into an open space for the common good and a new site for the invention of capital. Evictions beyond the city walls erased the 'insalubrious' quarters of the poor. For the sake of bourgeois order and hygiene they gave way to leisure spaces built with capital lent by newly created institutions. This new spatial order capitalised on the boundary line, not only at the level of empires, nations, and rivers, but also at the urban scale, building up toward the project of the liberal and neoliberal city. The demolition of city walls has specific narratives in each location. In Barcelona, the city wall had long been a contentious boundary for Spanish-Catalan political relationships in the second biggest city of the country, purposefully limiting the expansion of urban growth. The demolition could later only materialised through a watered down version of the original Cerdá Plan by accommodating centralist political interests (Fig. 18).⁹² In Paris, however, being the capital of France, the boundary of the city was shifted from the periphery to its interior by opening wide streets to control its own citizens (no longer the outsider). Furthermore, David Harvey points out how the Haussmann's transformation (1853-70) was rather made possible thanks to the Péreire brothers—who developed an unprecedented system of mortgages and lending facilitating the building boom (Fig. 19).⁹³

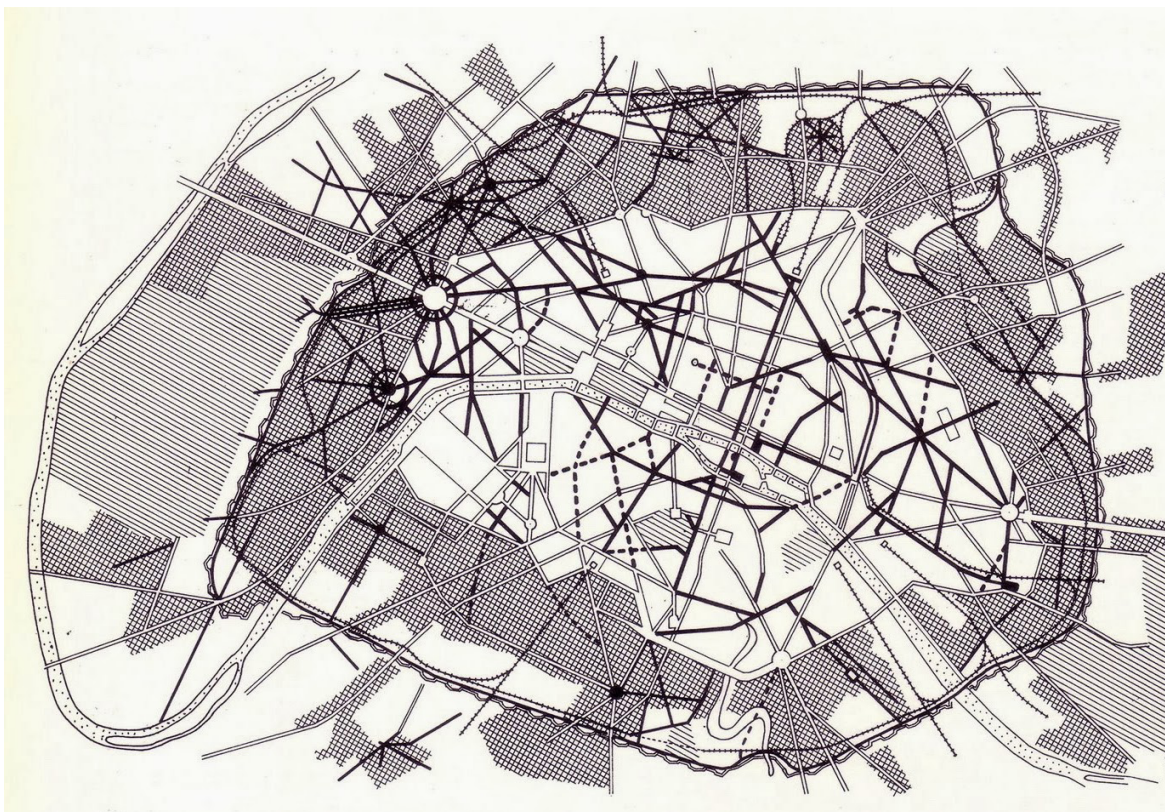
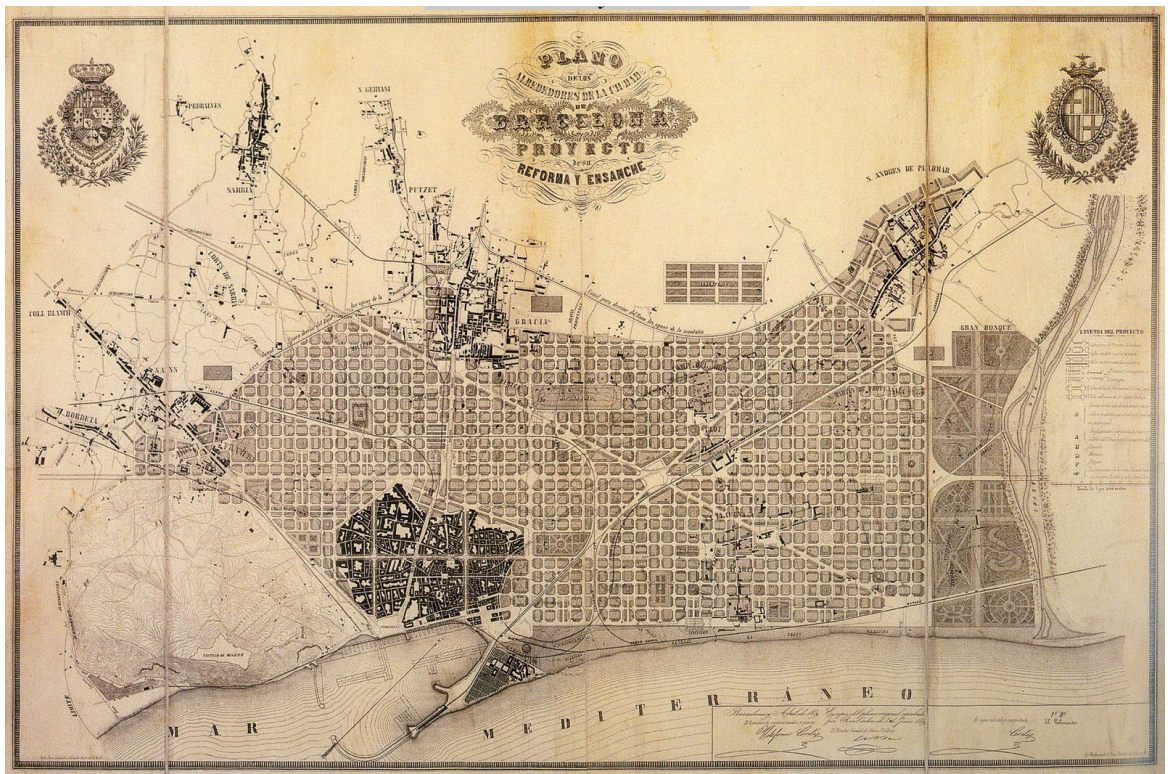
⁸⁹ Yair Mintzker, 'What Is Defortification? Military Functions, Policy Roles, and Symbolism in the Demolition of German City Walls in the Eighteenth and Nineteenth Centuries,' *Bulletin of the GHI* 48 (2011).

⁹⁰ José Manuel Naredo and Manuel Delgado Cabeza, 'Economía, Poder y Megaproyectos,' 19 June 2009.

⁹¹ Fernand Braudel, *Civilisation and Capitalism, 15th-18th Century: The Wheels of Commerce* (Berkeley and Los Angeles: University of California Press, 1982), 230.

⁹² Eduardo Aibar and Wiebe E. Bijker, 'Constructing a City: The Cerdá Plan for the Extension of Barcelona', *Science, Technology & Human Values* 22 (1): 3-30.

⁹³ Haussmann paved the new boundaries of the city for the military control forces of the state to easily navigate a formerly intricate network of tumultuous alleyways. Paradoxically, those same cobblestones became the perfect weapon for rioters to throw over the barricade lines against the police in the street protests of the late 19th century. See David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution* (London and Brooklyn: Verso, 2012), 42-43.



18: Enlargement Map of Barcelona, Ildefons Cerdà, 1859. His original plan consisted on an egalitarian non-hierarchical expansion based on a grid that reduced the amount of 'privileged' streets. Note that the blocks were not intended to be filled in their four sides.

19: Destruction of Paris designed by Georges-Eugène Haussmann to allow military control of the city by widening streets into easy-access axes, depicted in black (1853-70).

The circulation and accumulation of capital is the subject of a vast literature from Adam Smith to Karl Marx, but this thesis does not aim to investigate notions of value in commodity fetishism, visibility of labour in its production, or social alienation.⁹⁴ It rather uses a Foucauldian approach to investigate the spatial implications of capital circulation in relationship to the ambiguity of boundary lines. Foucault regarded the security of territorial boundaries as a modern conquest when compared to the borders for Machiavelli's Prince.⁹⁵ While for Machiavelli the main task of the sovereign was to demarcate, fix, enlarge, and protect the borders of his territory, Foucault argued that once modernity made those borders fixed and certain, the main preoccupation became how to ensure circulation of capital through them. Consequently, instead of understanding spatial boundaries as the circulation of capital in a Foucauldian sense, this thesis proposes to read capital as the circulation of borderlines. It is under that framework that the construction of space in architecture and geography is entangled with the idea of the urban frontier.

The Mobile Contours of Frontier Natures

Frontiers are not lines or zones, but institutions and processes.⁹⁶ The notion of frontier and boundary are inherent to the ambiguity of their inhabitation and the pressure of reinstating some sort of 'legitimate belonging' to that space. In a Hegelian sense, vagueness and ambiguity characterise the liberal position on frontiers; and yet, liberalism assumes the existence of the territorial state as a given, standing above civil society and regulating it.⁹⁷ A frontier can also be understood as the moment when a community occupies a territory that is later shaped by the activity and growth of that community, or by the impact it has on another community.⁹⁸ If the frontier is a diffuse zone of relations where humans and nonhumans dwell, the boundary governs that area in international law through a line without width. A frontier population is marginal, and it is typical for people belonging to both sides of the frontier to engage in smuggling, as a frontier dweller's political loyalty may be affected by his economic self-interest or precarious marginal inhabitation. In the case of Aboriginal Australia, the concept of the region or habitat is clearer than any concept of a sharply defined edge; the region does not have an edge, but shades off into a margin of uncertainty, a no-man's-land where other bands or communities may be encountered.⁹⁹

However, frontiers subsequently acquired a new constituency through the invention of the 'Far West' in the northern half of the American continents.¹⁰⁰ Inspired by the violent process of

⁹⁴ Karl Marx, *Capital: A Critique of Political Economy*, vol.1, trans. Samuel Moore and Edward Aveling, ed. Friedrich Engels (New York: Dover Publications, 2010), 163-169.

⁹⁵ Michel Foucault, *Security, Territory, Population. Lectures at the Collège de France 1977-1978*, ed. Michel Senellart, François Ewald and Alessandro Fontana; trans. Graham Burchell (New York: Picador, 2004), lecture 4.

⁹⁶ Malcolm Anderson, *Frontiers: Territory and State Formation in the Modern World* (Cambridge: Polity Press, 1996), Introduction.

⁹⁷ Ibid.

⁹⁸ Owen Lattimore, *Studies in Frontier History: Collected Papers 1928-1958* (London: Oxford University Press, 1962), 469-471.

⁹⁹ Ibid.

¹⁰⁰ Kieran J. Rankin and Richard Schofield, 'The Troubled Historiography of Classical Boundary Terminology,' in *Mapping Frontiers, Plotting Pathways*, Ancillary Paper 2 (2004), 4-5.

enclosing the commons that had taken place in Britain, after the 1862 Homestead Act a series of governmental policies freely granted ownership of land in the US. Any individual, no longer just the ruler, was legally entitled to claim a piece of 'vacant space,' 'free soil', or 'marginal land'. This provoked a prodigious flow of 'pioneers' migrating to the American West. Frederick Jackson Turner first claimed in 1893 that the frontier was the outer edge pushing further; an ever-shifting meeting point between savagery and civilization.¹⁰¹ In quantitative terms, the frontier was a margin of a settlement with a density of two or less *people* to the square mile.¹⁰² Similar to the disagreement in the definition of humans and nonhumans in the Controversy of Valladolid, Native Americans were excluded from the calculation of density.¹⁰³ Robert Wade refused Turner's claim of a European right to cultivate 'vacant' land and reframed the dream of continental domination.¹⁰⁴ The desire to urbanise the continent's vast surface promoted the growth of agricultural economies that violently asserted ownership over areas inhabited by Native Americans. Rather than small villages evolving into bigger towns, it was towns that appeared first and agriculture that followed. Eastern investors scanned maps looking for likely spots to establish a city, usually at the junction of two rivers or the centre of fertile farming districts; they bought the land, divided it in lots, gave the place a name, and waited for development that would appreciate its value. William Cronon in *Nature's Metropolis* also criticises Turner's view of the frontier as bucolic rural plains, and as if frontier history had little or nothing to do with cities.¹⁰⁵ Contrary to Turner's idea that cities marked the end of the frontier, cities and countryside grew in tandem as a commercial-capitalist complex.¹⁰⁶ It consisted of a unified process of rural settlement and metropolitan growth that colonised 'vacant' land through a grid of property lines.

The frontier had to be measured and demarcated if the colonial project was to succeed in selling land from afar, which led to simple geometric systems imposed on the landscape, like the Jeffersonian Grid.¹⁰⁷ In this new boundary-based society, Jeffersonian property became a mode of citizenship.¹⁰⁸ The settlement of the US coincided with a change in Western views of wild nature and democracy. Had Europeans colonised America in the 11th century, the National Parks system would have been impossible due to alternate systems of land-ownership. However, by considering the 'Indians' had to be 'savage', 'uncivilised' peoples and thus without any right to property, European-Americans saw themselves as fully entitled to take over their 'vacant' territory, as the Spanish had already done some centuries before.¹⁰⁹

¹⁰¹ What historians refer to as the 'Frontier Thesis' or the 'Turner Thesis' is outlined in Frederick J. Turner, 'The Significance of the Frontier in American History,' lecture at the Chicago World's Fair, 1893.

¹⁰² Frederick J. Turner, in Kieran J. Rankin and Richard Schofield, 'The Troubled Historiography of Classical Boundary Terminology,' in *Mapping Frontiers, Plotting Pathways*, Ancillary Paper 2 (2004), 4-5.

¹⁰³ Michael Hardt and Antonio Negri, *Empire* (London and Cambridge: Harvard University Press, 2000), 171.

¹⁰⁴ Robert C. Wade, *The Urban Frontier: The Rise of Western Cities, 1790-1830* (Champaign: Illinois University Press, 1996).

¹⁰⁵ William Cronon, *Nature's Metropolis: Chicago and the Great West* (London and New York: Norton & Co, 1991), 46-47.

¹⁰⁶ *Ibid.*

¹⁰⁷ Andro Linklater, *Owning the Earth: The Transforming History of Land Ownership* (London: Bloomsbury, 2013), 241.

¹⁰⁸ *Ibid.*, 350.

¹⁰⁹ This process went along the lines with Steinberg's claim about the making of a social construction of the ocean through the marketisation of its emptiness.

Transforming the imaginary wilds of the frontier into mappable territory generated natural commons, leading to Yellowstone becoming the first National Park in the US in 1872. Its delineation shaped the landscape into a marketable product by reclassifying 'wild' space into a bounded commodity. Politicians, conservationists, and investors turned wilderness into wonderlands to attract tourists and an inflow of capital. In order to distinguish itself from the rest of the country, Yellowstone's marketeers even created 'spatial oddities' for people to admire.¹¹⁰ It is remarkable how the colonial project converted savages into *noble* savages so nineteenth century tourists could revive the magic of the frontier: nature, in the case of Yellowstone, needed such inhabitants.¹¹¹ National parks in the US were not altruistic creations of forward-thinking individuals; these places held in many cases no economic value, and had managed to escape lumbering, mining, grazing, or agriculture because they were 'worthless' wastelands in a traditional market sense.¹¹² And yet, they provided space for the economic exploitation and control of native populations.¹¹³

Colonial lines classifying the nature of land often relied on the ambiguity of its common good. The study of spatial margins and marginal spaces became more and more a matter of national political economy. Since frontier and boundary studies emerged as a discipline in Europe in the late nineteenth century, white male thinkers from Great Britain, France and Germany (the main players in international – imperial – relations at that time) dominated the field.¹¹⁴ In his seminal work *Geography of Frontiers and Boundaries*, John Robert Victor Prescott situates the genealogy of frontiers and modern European boundary theory in 1895 with Friedrich Ratzel's principles of *Lebensraum* (living space) and *Anthropogeographie* (anthropogeography), which laid the foundations for his *Geopolitik*.¹¹⁵

Ratzel used the analogy of a living organ to describe the border: states are organisms and boundaries their skins.¹¹⁶ For him, the *Grenzraum* (borderland) is the real space, while the *Grenzlinie* (boundary line) is only its abstraction.¹¹⁷ The borderland becomes the area within which growth and decline are both organised and revealed: the site of friction.¹¹⁸ However, making Ratzel the founder of border studies flattens a previous non-European history of queer, unorthodox, and ambiguous demarcations of space.¹¹⁹ The very act of 'inventing' boundary theory legitimises the need to impose rigid lines upon the management of an intellectual space. Indeed, Ratzel's Eurocentric white male colonial perspective derives from the 1884-85 Berlin Conference (also known as the Congo Conference), when the main European powers carved Africa into pieces on paper, interpreted 'blank spaces' in the African continent as areas open for

¹¹⁰ Mark D. Barringer, *Selling Yellowstone: Capitalism and the Construction of Nature* (Lawrence: University Press of Kansas, 2002), 34-35.

¹¹¹ *Ibid.*, 10.

¹¹² *Ibid.*, 5.

¹¹³ Authorised by the General Allotment Act of 1887, allotment cost Indians two-thirds of their land and left much of the remainder effectively useless as it passed to successive generations of owners. See Kenneth H. Bobroff, 'Retelling Allotment: Indian Property Rights and the Myth of Common Ownership', in *Vanderbilt Law Review* 54 (2001): 1561-62.

¹¹⁴ John R.V. Prescott, *Political Frontiers and Boundaries* (London: Routledge, 1990), 12-13.

¹¹⁵ *Ibid.*

¹¹⁶ Rankin and Schofield, op. cit., 4-5.

¹¹⁷ *Ibid.*

¹¹⁸ *Ibid.*

¹¹⁹ Henk van Houtum, 'The Geopolitics of Borders and Boundaries,' *Geopolitics* 10 (2005): 674.

exploration and colonisation, rather than the limits of their knowledge of African geography.¹²⁰ Prescott and others contested the simplistic classification of boundaries into *natural* and *artificial* that had been promoted by key figures in military geography like Lord George Nathaniel Curzon and Colonel Thomas Holdich.¹²¹ Holdich distinguished between frontier spaces being *natural*, and boundary lines being *artificial*. A limit being *natural* endowed a frontier with a scientific and moral legitimacy, invariably invoking a state's expansionist tendencies rather than an impulse to withdraw back to them.

It became clearer during WWI that boundaries and frontiers were artificially created necessities *contra natura*, even if these taxonomies were still used indiscriminately by forward-thinking theorists like Samuel Boggs, Charles Fawcett and Paul de Lapradelle.¹²² According to Fawcett, frontiers were not fixed entities, but distinct regions of transition: while he admitted that all regions are transitional, it is only when the transitional feature is a dominant characteristic that the region is a true frontier. A decade after the war, de Lapradelle replaced the dated notion of a *natural* boundary with the term *limites artificielles dérivées* (derived artificial limits). Robert Sieger coined 'organic boundaries' and 'boundaries borrowed from nature' for the same purpose, and further employed other terms such as *Grenzgürtel*, *Grenzlinie*, *Grenzlehre* (boundary zone, line, pattern).¹²³ Embedded in a war context, Karl Haushofer identified *Wehrgrenzen* as defensive, ambiguous buffer zones that incorporated part of the enemy's territory to deter bombardment.¹²⁴ In that case, the thickness of the line was intentionally beyond the boundary for security purposes.

During WWII frontiers developed into powerful forces of domination that were dependent on nationalist politics and that instrumentalised the ambiguity of the boundary to unify both language and peoples.¹²⁵ But by the end of the war, boundary zones were innocently claimed to be no longer necessary. Prescott remarks how the understanding of boundary zones was intentionally ambiguous in order to conflate the distinction between transitional border zones, undelimited areas, boundary zones, undefined boundaries, and no-man's land. Hence, the ambiguity of what aspects of boundaries had ceased to exist was even less clear.¹²⁶ Boundaries could not be studied in general terms, as each context became extremely specific and universal taxonomies no longer made sense, with the sole exception of whether they were exercised on paper (*de jure*) or in space (*de facto*).¹²⁷

¹²⁰ Thomas J Bassett, 'Cartography and Empire Building in Nineteenth-Century West Africa', *Geographical Review* 84 (3): 316-35. 1994:321-334; Jordan Branch, *The Cartographic State: Maps, Territory and the Origins of Sovereignty* (Cambridge: Cambridge University Press, 2014), 117-118.

¹²¹ Curzon of Kedleston, *Frontiers* (Oxford: Clarendon Press, 1907), in Rankin and Schofield, op. cit., 8.

¹²² John R.V. Prescott, *Political Frontiers and Boundaries* (London: Routledge, 1990), chapter 1.

¹²³ Rankin and Schofield, op. cit., 6.

¹²⁴ Prescott, op. cit.

¹²⁵ Rankin and Schofield, op. cit., 7.

¹²⁶ European WWII anxieties led to the study of ambiguity and uncertainty through existentialism, phenomenology and the ethics of decisiveness: mainly through the writings by Jean-Paul Sartre (*Being and Nothingness: An Essay on Phenomenological Ontology*, 1943); Maurice Merleau-Ponty (*Phenomenology of Perception*, 1945); and Simone de Beauvoir (*The Ethics of Ambiguity*, 1945). Given the context of violence, in Sartre's work for instance, the subject at stake was the ethical dilemma of a young man resolving whether to fight for his country or stay home to protect his family. The final option could always be right, as both options justify a set of interests for the self.

¹²⁷ John R.V. Prescott, *Political Frontiers and Boundaries* (London: Routledge, 1990), chapter 1; Stephen B. Jones, 'Boundary Concepts in the Setting of Place and Time,' *Annals of the Association of American Geographers* 49 (1959):

The ambiguity of the boundary line begins to be enunciated in *Géographie des frontières*, when Jacques Ancel distinguishes between plastic and mobile boundaries (*frontières plastiques; frontières mouvantes*).¹²⁸ The boundary for him results from pressures exerted on both sides: the line is simply the equilibrium between opposing forces.¹²⁹ Learning from the military construction of the civilian environment, Eyal Weizman's analogous concept of 'political plastic' reads architecture as a series of responsive physical structures and built environments, social forces *slowing* into form that 'behave' in response to pressures and buildings that 'perform' in relation to programme.¹³⁰ The act of delineation, and the malleable politics behind it, is eventually what constitutes and adapts the boundary.¹³¹ A paradigmatic example against the Western understanding of boundaries is the 'movable borders' (*confine mobili*) introduced in 2007 to re-define the Austro-Italian glacier-border in the Alps as it melts.¹³²

This shift in understanding borderlines as borderlands, which thicken and widen a line imagined with no width at all, is what Homi Bhabha describes as a 'third space': a realm of negotiation, translation, and remaking.¹³³ This is a useful framework not only to address cultural and social processes in borderlands created by empire, but it is also a way to conceptualise relationships in frontiers lacking colonial stigma.¹³⁴ The Western view on frontiers has dominated constitutional thinking in nearly every highly industrialised country; it has even permeated international institutions and international law in South-South diplomacy.¹³⁵ Counter-models are required to dismantle the inequality created by nations of the Global North in an attempt to create an *outside*. As some Mexican protesters now claim, 'we did not cross the border, the border crossed us'.¹³⁶ Indigenous understandings of landscape, territory, and inhabitation based on the absence of Westphalian boundaries have yet to be decolonised. Acknowledging immaterial property titles as legitimate ownership/usership of the land, like in recent Australian aboriginal lawsuits, might institutionalise orally transmitted songs into legally binding maps.¹³⁷ This shifts the logic of humans being landowners to land-users: it is the land that eventually owns us.¹³⁸

In Sandro Mezzadra and Brett Neilson's terms, these processes consist of *differential inclusion*: the conviction that the figures who inhabit the world's borderscapes are not marginal subjects on the edges of society but central protagonists in the drama of composing the space, time, and

241-55; Kieran J. Rankin and Richard Schofield, 'The Troubled Historiography of Classical Boundary Terminology,' in *Mapping Frontiers, Plotting Pathways*, Ancillary Paper 2 (2004), 10.

¹²⁸ Jacques Ancel, 'Les frontières: Étude de Géographie Politique,' *Recueil des cours* 55 (1936): 207-97.

¹²⁹ Prescott, op. cit., chapter 1

¹³⁰ Eyal Weizman, *Hollow Land: Israel's Architecture of Occupation* (London: Verso, 2007); and Weizman, Eyal.

'Political Plastic,' in (ed.) Robin Mackay, *Collapse* 6. Falmouth: Urbanomic, 2012.

¹³¹ Rankin and Schofield, op. cit., 10.

¹³² 'Italian Limes,' accessed 20 November 2016, <http://www.italianlimes.net/>

¹³³ Homi Bhabha, *The Location of Culture* (London: Routledge, 2004); Magdalena Naum, 'Re-Emerging Frontiers: Postcolonial Theory and Historical Archaeology of the Borderlands,' *Journal Archaeology Method Theory* 17 (2010):106.

¹³⁴ Ibid.

¹³⁵ Malcolm Anderson, *Frontiers: Territory and State Formation in the Modern World* (Cambridge: Polity Press, 1996), Introduction.

¹³⁶ Mezzadra and Neilson, op. cit., preface.

¹³⁷ Elizabeth A. Povinelli, *Geontologies: A Requiem To Late Liberalism* (Durham: Duke University Press, 2016), 26-27.

¹³⁸ Enoch Adams, in discussion with Modelling Kivalina working Group, July 2013.

materiality of the social.¹³⁹ From this perspective, the circulation of ambiguous limits can be connected to a post-national condition of elusive sovereignty, denationalisation, flexible citizenship, supraterritoriality, and extrajudicial spaces. For Jürgen Habermas and Arjun Appadurai, the post-national does not come after nationalism, but coexists in time with the national, while being challenged by a diasporic non-territorial condition.¹⁴⁰ This is also the sort of elusive sovereignty enunciated by Jacques Eric Roussellier: a simultaneous *de facto* combination of internal and external sovereignty.¹⁴¹ Saskia Sassen's idea of ambiguity as denationalisation actually consists of a new normative order based on the rising power of private authority in domains once exclusive to the state and the blurring between the private and public sectors.¹⁴² Sassen remarks how this implies a shift in the role of the state from supporting strategic industries to establishing conditions for competitiveness and antitrust legislation in a global economy.¹⁴³ Aihwa Ong's idea of flexible citizenship similarly refers to the cultural logics of capitalist accumulation, travel, and displacement that nudge subjects to respond *opportunistically* to changing political-economic conditions. This in turn leads to what Ong calls 'graduated sovereignty', a series of zones subjected to different kinds of governmentality.¹⁴⁴ In sum, ambiguity for all these thinkers can be read as a progressive dissolution of the Westphalian boundary. Instead, they propose a border that has evolved to become malleable in the face of ad-hoc, violent, and convenient regimes for increasing the extraction of value.

This transnational organisation is simultaneously public and private, national and international, profit-making and charitable, religious and secular, civil and military, and benign and nefarious.¹⁴⁵ The supraterritorial enables transborder monetary transactions in currencies that are not dependent on national geographic boundaries, but are most convenient in a given moment.¹⁴⁶ Giorgio Agamben's *State of Exception* is deeply embedded in the ambiguity of extrajudicial opportunism: the government separates the norm from its application in order to make its application possible.¹⁴⁷ Hence, exception is for Agamben about being *outside*, and yet belonging. The logic of ambiguity embedded in financial littorals that this thesis proposes regards the exception as a reversible condition: it is simultaneously about being inside and *not* belonging. Therefore, the goal of thinking about space through ambiguity is not just about border control: it is also about giving the border its real power.

¹³⁹ Mezzadra and Neilson, op. cit., 159.

¹⁴⁰ Jürgen Habermas, *The Postnational Constellation: Political Essays*, trans. and ed. Max Pensky (Cambridge: Polity, 2001); Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis and London: University of Minnesota Press, 1996), 21.

¹⁴¹ Jacques Eric Roussellier, 'Elusive Sovereignty—People, Land and Frontiers of the Desert: The Case of the Western Sahara and the International Court of Justice,' *Journal of North African Studies* 12 (2007): 55-78.

¹⁴² Saskia Sassen, *Territory, Authority, Rights: From Medieval to Global Assemblages* (Princeton University Press, 2008), 222-223.

¹⁴³ Ibid, 238-239.

¹⁴⁴ Aihwa Ong, *Flexible Citizenship: The Cultural Logics of Transnationality* (Durham & London: Duke University Press, 1999), 6-7.

¹⁴⁵ Samuel P. Huntington, 'Transnational Organisations in World Politics,' *World Politics* 25 (1973): 333-368.

DOI: 10.2307/2010115

¹⁴⁶ Jan Aart Scholte, 'Global Capitalism and the State,' *International Affairs* 73 (1997): 427-52; Stephen J. Kobrin, 'Globalization, Transnational Corporations and the Future of Global Governance,' in *Handbook of Research on Global Corporate Citizenship*, ed. Andreas Georg Scherer and Guido Palazzo (Elgar, 2008): 250.

DOI: <http://dx.doi.org/10.4337/9781848442924>

¹⁴⁷ Giorgio Agamben, *State of Exception*, (Chicago and London: University of Chicago Press, 2005), 11.

Calculated Ambiguity: Spatial Margins as Profit Margins

Both the right's neoliberal discourse and the left's post-WWII understanding of ecology embraced spatial imaginations of a commons based on free market ideology. The seminal text *The Tragedy of the Commons* by Garrett Hardin generated an ambivalent, market-oriented understanding of political and ecological space.¹⁴⁸ He argued that communal pastures, belonging to everybody and nobody at the same time, would lead to the unmitigated exhaustion of resources by many self-interested users.¹⁴⁹ Following this line of thought, Michael Heller framed the *Tragedy of the Anticommons* as the equivalent mismanagement of resources, not because of overuse, but underuse.¹⁵⁰ Given that some proactive owners can take advantage of more passive others, the elimination of clear spatial divisions within the commons could lead to a dead-end situation where none of the owners can use the common pool.¹⁵¹ Both Hardin and Heller dismiss any possibility of collective ownership, arguing that blurry boundaries for individual possession are a burden for spatial efficiency.

Elinor Ostrom's critique of Hardin's thesis, *Governing the Commons*, advocated for a renewed embrace of that shared space.¹⁵² The socioeconomic value of communal ownership, far from exhausting local means of survival, has carefully established durable institutions to govern those same resources and spaces.¹⁵³ Among many international cases, the *Tribunal de les Aigües* (Tribunal of Waters) on the Mediterranean Coast, a millenary extrajudicial system recognised by the Spanish government, has successfully regulated collective irrigation of coastal orchards since the tenth century. This time-based system of sharing common resources to organise coastal wetlands does not operate through two-dimensional boundary lines, but through the mutual government and fair distribution of velocity and timed water flows: each farmer is assigned a shift, a fixed time period to withdraw water; knowing exactly when and for how long water may be obtained, but without exactly knowing how much water may be available each time.¹⁵⁴ This collective usership of coastal waters and multiple tidal zones constitutes just one among many ways to contest the financialisation of the shore, as explained in chapter one.

In an analogous way, Ostrom's work reactivated the discourse on civic resistance to the privatisation of public space, raising awareness for the future of humanity and inhabitation. This had already been laid out in international law as part of the 1954 United Nations Common Heritage of Mankind project (CHM), as well as in a number of transnational agreements to maintain the seafloor or the Antarctic as international spaces – each ambiguously set aside for the common good, beyond national interests and in the name of human peace.¹⁵⁵ Nonetheless,

¹⁴⁸ Garrett Hardin, 'The Tragedy of the Commons,' *Science* 162, 13 December 1968.

¹⁴⁹ Ibid.

¹⁵⁰ Michael Heller, 'The Tragedy of the Anticommons: Property in the Transition from Marx to Markets,' *Harvard Law Review* 111 (1998): 623-4.

¹⁵¹ For instance, post-Soviet trade in street kiosks. See Ibid.

¹⁵² Hardin's formulation from 1968 happened at a time when environmental sensitivity gained popularity. Ostrom's text was published in 1990.

¹⁵³ Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge: Cambridge University Press, 1990), 76.

¹⁵⁴ Ibid.

¹⁵⁵ United Nations Convention on the Law of the Sea (UNCLOS I 1956-1958, UNCLOS II 1960, UNCLOS III (1973-1982) and 1994 Agreement; Antarctic Treaty 1961; and United Nations Outer Space Treaty 1967.

both coastal waters and coastal land are perceived as investment sites and have been incorporated within the territorial control of the state and the international community.¹⁵⁶ Immediately after the agreement, the OPEC crisis financialised even more the planetary commons, extracting value out of even the definition of the common good, as is described in chapter two. Paradoxically, the CHM framework boosted private exploitation and pressure on the commons by the very act of demarcating them.¹⁵⁷ The emergence of a defined realm created conflict around its accurate extent, usage, and shared ownership. The fact that economic tensions are constantly moulding the commons has led to a new form of neoliberal environmentalism, which ‘protects’ nature by speculating on the extraction of value from it, be it real estate potential or prospective natural resources. The perverse logic of the extraction of value from environmental protection is what Bram Büscher and Robert Fletcher describe as capitalist accumulation by conservation.¹⁵⁸

The privatisation of waters and the ownership of the tidal zone lie at the core of the financialisation of space. Are they collective resources or private property?¹⁵⁹ Both classifications imply the extraction of a certain economic value, neglecting any possibility of ‘untouched’ environment. Indeed, debates around the collective use of the commons eventually led to the stewardship doctrine, whereby space suddenly *needs* to be protected or guarded for the common good.¹⁶⁰ Under the values of stewardship, the ocean is seen as a socially significant space *providing resources and/or services*. Hence, after a violent era of industrial and mercantilist exploitation of the oceans, the rise of stewardship principles reflects the spatiality of a neoliberal economy. It legitimises environmental protection in order to regulate the extraction of value.

Granting marine governance has led to a system of global *ecocracy*.¹⁶¹ As opportunities for intensive marine resource exploitation outside territorialised coastal waters arise, the ocean has become a global resource-space to be *stewarded*. This process can be connected to the so-called ‘Cousteauization’ of the oceans: a popular movement to cultivate public interest in the ocean’s biota, through figures like Captain Jacques Cousteau, in order to generate financial support for further marine research and governmental and/or corporate stewardship of marine resources.¹⁶² In that regard, the *ecocratic* system of *environmentality* can extract even more value under the mask of environmental preservation.¹⁶³ Ecocracy has turned into another ambiguous form of law.

¹⁵⁶ Philip E. Steinberg, *The Social Construction of the Ocean* (Cambridge: Cambridge University Press, 2001), 208.

¹⁵⁷ Scott Shackelford, ‘The Tragedy of the Common Heritage of Mankind,’ *Stanford Environmental Law Journal* 27 (2008).

¹⁵⁸ Bram Büscher and Robert Fletcher, ‘Accumulation by Conservation,’ in *New Political Economy* (2014): 1-26. DOI: 10.1080/13563467.2014.923824

¹⁵⁹ Bonnie J. McCay, *Oyster Wars and the Public Trust: Property, Law, and Ecology in New Jersey History* (Tucson: University of Arizona Press, 1998), introduction.

¹⁶⁰ Steinberg, op. cit., 176.

¹⁶¹ Ibid, 180.

¹⁶² Ibid, 178; George Leddy, ‘Televisuals and Environmentalism: The Dark Side of Marine Resource Protection As Global Thinking,’ *Annual Meeting of the Association of American Geographers*, (1996).

¹⁶³ Arun Agrawal, *Environmentality: Technologies of Government and the Making of Subjects* (Duke University Press, 2005), 1-2.

Neither relying on the historical legacy of governing the commons nor a reliance on international regulatory frameworks is sufficient to safeguard the common good. It is a space constructed through ambiguous limits that secure economic returns in very different and even opposing conditions, precisely because of the flexibility of the limit. Everything that occurs 'beyond the line' remains outside the legal, moral, and political values recognised on *this* side of the line.¹⁶⁴

Margins and spaces of economic opportunity have materialised in the freedom of the seas, where maritime powers have historically instrumentalised the open waters through the figure of the privateer: an agent operating at the edge of fluid legalities and escaping national sovereignty, all the while employed by specific nations.¹⁶⁵ For Daniel Heller-Roazen, the pirate is no longer defined by the region in which he or she moved, but the region of piracy derives simply from the presence of the pirate.¹⁶⁶ Likewise, contrary to a clearly demarcated plot of land, a ship is an itinerant form of ambiguous sovereignty. Far from ending with the emergence of modern society, piracy's logic of ambiguity is still very present in business practices known as 'flags of convenience'. These practices avoid regulations in the country of the ship's owner, choosing instead to inscribe the vessel in a country with fewer legal limitations.

From a Foucauldian perspective, in law, anything that is undetermined is permitted; in contrast, in disciplinary regulation what is undetermined is forbidden.¹⁶⁷ This thesis looks at the ambiguity and the architecture of the limit as the very appropriation of what is undetermined and what is permitted: zones that are neither legal nor illegal, that exist while not existing, and at the same time are key to determining the degree of an ambiguous ownership.¹⁶⁸ Hence, this thesis is not about the spaces of discipline in a Foucauldian sense, but rather about how the boundaries that separate the allowed from the forbidden are intentionally thickened. Hans Lindahl has introduced another term to define this liminal condition: *alegality*, which is different from the illegal, and yet part of a legal disorder.¹⁶⁹

In this sense, the alegal contests the legal order through the legality of illegality, and the illegality of legality. Financial littorals are liminal spaces produced through this alegality and regulated by offsetting and outsourcing the speculative management of responsibility. If the Peace of Westphalia led to a global order, the peace treaties ending WWI and WWII have led to a post-Westphalian (post-boundary) era where offshore-like structures have come to dominate global space.¹⁷⁰ The formation of supranational instruments of governmentality are clear examples of power based on adaptable standards and their loopholes, with examples like the General Agreement on Tariffs and Trade GATT (1947-1995), which would later evolve into the

¹⁶⁴ Carl Schmitt, op. cit., 94.

¹⁶⁵ Daniel Heller-Roazen, *The Enemy of All: Piracy and the Law of Nations* (Brooklyn: Zone Books, 2009), 178-180.

¹⁶⁶ Ibid, 179.

¹⁶⁷ Michel Foucault, *Security, Territory, Population. Lectures at the Collège de France 1977-1978*, ed. Michel Senellart, François Ewald and Alessandro Fontana; trans. Graham Burchell (New York: Picador, 2004), lecture 4.

¹⁶⁸ Zygmunt J.B. Plater and William Lund Norine, 'Through the Looking Glass of Eminent Domain: Exploring the "Arbitrary and Capricious,"' *Test and Substantive Rationality Review of Governmental Decisions* 16 (1989): 663-64.

¹⁶⁹ Hans Lindahl, 'Border Crossings by Immigrants: Legality, Illegality, and Alegality,' *Res Publica* 14 (2008): 124-125. DOI: 10.1007/s11158-008-9051-5

¹⁷⁰ Eric A. Engle, 'The Transformation of the International Legal System: the Post-Westphalian Legal Order,' *Quinnipiac Law Review* 23 (2004): 26.

World Trade Organization, the World Bank (1944), the UN Charter (1945), the International Monetary Fund (1945), ISO global standards (1946), the 4th Geneva Convention (1949), and the Special Economic Zone that have developed since the 1950s.¹⁷¹

This is where Jacqueline Best's notion of 'constructive ambiguity' becomes so relevant.¹⁷² According to her analysis of the 1944 Bretton Woods Agreement – a key moment that established the basis for international finance – it did not fail to deliver its ambitious goals for a new global and transparent order not because it was too ambiguous, as the media reported at the time. Ambiguity, even today, has been taken as a synonym for uncertainty and is plagued by negative associations. Its stigma relies on its perceived opposition to clarity and transparency, to rational knowledge, and to the production of *one* truth. Ambiguity has been turned into a malady to be eradicated. However, Best argues that if we are surprised in a bad way by the idea of ambiguity as a constructive force, it may be because we insist on thinking of power and strength as the perfection of information.¹⁷³ For Bruno Latour, any trace of ambiguity is to be rejected, as ambiguity, he argues, is a mistake or the impossibility of asserting whether climate change, for instance, exists or it does not.¹⁷⁴ To solve any problem, it is necessary to know first whether the problem exists with certainty. However, contrary to the Latourian logic, ambiguity, and the lack of precision, can also be productive, precisely because it allows the problem to both exist and not exist at the same time. Best argues that the Bretton Woods Agreement actually failed, because it was not ambiguous enough:

Whereas the emphasis in the post-war regime was on *managing* ambiguity by *regulating* capital [...], the contemporary reliberalised regime has focused on *eliminating* ambiguity by *deregulating* financial flows.¹⁷⁵

Contrary to Best's proposition of embracing ambiguity and the opportunities it could facilitate, deregulated financial flows are ambiguous without acknowledging it. The neoliberal strategy of financial liberalization has grown into exactly the monster it was designed to avoid. But the idea of the calculated, ambiguous zone as a space beyond regulation is not new. Keller Easterling remarks, it dates back to Ancient Greek free ports, the Hanseatic League's free cities, the post-WWII Foreign Trade Zones and duty-free airports, and, more recently, Special Economic Zones.¹⁷⁶ These offshore spaces are the result of a 'hypocritical sovereignty', where nations operate between multiple jurisdictions with potentially conflicting allegiances and laws.¹⁷⁷ Zones 'cheat', just as most maritime city-states have cheated for centuries. Ronen Palan claims that with the emergence of offshore spaces of exception and overseas extraterritoriality, the state does not disappear, but rather enters a secondary, relatively unregulated, juridical space in which economic activities can develop *more or less* without hindrance.¹⁷⁸ Palan relates how the

¹⁷¹ Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London and New York: Verso, 2014) Chapter 1.

¹⁷² Jacqueline Best, *The Limits of Transparency: Ambiguity and the History of International Finance* (Ithaca: Cornell University Press, 2005), 147.

¹⁷³ *Ibid.*, 2.

¹⁷⁴ Bruno Latour, *Politics of Nature: How to Bring the Sciences in Democracy*, trans. C. Porter (Cambridge, MA: Harvard University Press, 2004).

¹⁷⁵ Best, *op. cit.*, 2-3.

¹⁷⁶ Easterling, *op. cit.*, Chapter 1.

¹⁷⁷ *Ibid.*, 49.

¹⁷⁸ Ronen Palan, 'The Emergence of an Offshore Economy,' *Futures* 20 (1998): 63-73. My emphasis.

juridical space of sovereignty is bifurcating into two simultaneous domains, one still very much 'on-shore', subject to the strict controls, regulations, and taxation and the other consisting of 'fictitious spaces' known as the 'off-shore'.¹⁷⁹

Extrapolating on the notion of offshore economy as an unregulated realm, Jason Sharman has noted that extraterritorial financial flows have consciously espoused ambiguity as a form of governance:

The common feature among offshore financial products is calculated ambiguity: the ability to give diametrically opposed but legally valid answers to the same question from different quarters. Thus offshore allows individuals and firms to enjoy simultaneous ownership and non-ownership, to be high profit and loss-making, heavily indebted but also debt-free, and for investment to be foreign and domestic.¹⁸⁰

By referring to the offshore as deliberate and calculated in its use of ambiguity, Sharman exposes its dual logic: the intentionality and need of governments to maintain zones beyond their own reach, where economic transactions can take place with minimal intervention by the state.¹⁸¹ Henry Kissinger's notion of constructive ambiguity has come to dominate international diplomacy since the mid-1960s as a negotiating tactic that allows contentious discourses by disguising frictions under a double-edged calm.¹⁸² At the same time, in the field of engineering, Lotfi A. Zadeh framed his notion of 'fuzzy logic'.¹⁸³ A 'fuzzy set' is a class of objects with a continuum of grades of membership, ranging between zero and one. The classical example is an apple that has already been eaten. If we take a bite out of the apple, it is still an apple; after several more bites, we are left with an apple core; at what point did the apple cross over from being an apple to being an apple core? Would that change if we could take one more bite out of that apple core?¹⁸⁴ The encounter between land and sea is a paradigmatic case of a fuzzy set.¹⁸⁵

Calculated, constructive, or fuzzy forms of ambiguity are crucial in challenging the Kantian approach to decision-making through a gradient of all possible possibilities. In that regard, the fuzzy becomes a system of partial truth. Even if fuzzy logic is widely accepted within the engineering and computer science, it is generally rejected by mathematicians and statisticians, as critics argue that it is unscientific by Karl Popper's standards: gradients of membership are not empirically verifiable.¹⁸⁶ Yet, it is precisely the impossibility of empirical verification that constructs the space of a successful or evil operation.

See also: Ronen Palan, *The Offshore World: Sovereign Markets, Virtual Places, and Nomad Millionaires* (Ithaca: Cornell University Press, 2006).

¹⁷⁹ Ibid.

¹⁸⁰ Jason C. Sharman, 'Offshore and the New International Political Economy,' *Review of International Political Economy* 17 (2010): 1-19. DOI: <http://dx.doi.org/10.1080/09692290802686940>

¹⁸¹ Ronen Palan, 'The Emergence of an Offshore Economy,' *Futures* 20 (1998): 63-73.

¹⁸² John Bew, *Realpolitik: A History* (Oxford: Oxford University Press, 2016), 260.

¹⁸³ Lotfi Zadeh, 'Fuzzy Sets,' *Information and Control* 8 (1965): 338-9. DOI: [https://doi.org/10.1016/S0019-9958\(65\)90241-X](https://doi.org/10.1016/S0019-9958(65)90241-X)

¹⁸⁴ 'The Fuzzy Logic Concept,' accessed 9 October 2016, <https://www.calvin.edu/~pribeiro/othrlnks/Fuzzy/concept.htm>

¹⁸⁵ One of the pioneering applications of fuzzy logic was the subway system in Sendai, Japan, where artificial intelligence qualified classifications like 'very fast', 'not very fast', 'quite slow', etc. As a result, Sendai has one of the smoothest subway systems in the world, where driverless cars accelerate and decelerate more smoothly than a human driver ever could. Andrew Pollack, 'Fuzzy Computer Theory: How to Mimic the Mind?' *New York Times*, 1 April 1989.

¹⁸⁶ 'Fuzzy Logic and Its Practical Use in Mass Transit Systems,' accessed 8 August 2016,

<http://skisko.blogspot.co.uk/2005/06/fuzzy-logic-and-its-practical-use-in.html>

The contemporary, neoliberal world is more and more reliant on the continuous reorganization of spatial margins and their associated profits. It allows opposing positions to be simultaneously valid. Not every country accepts democracy as a system of governance, but every country acknowledges the ambiguity of law as an imperative. Paradoxically, a universalist rule of law is the mechanism that facilitates international agreements operating in complete opposite ways, both in protected economies as well as deregulated and privatised ones.¹⁸⁷ This ambiguity-based neoliberal order requires an understanding of the rule of law as twofold: resolution of the ruler as the decision-maker who governs, and resolution of the ruler as the accuracy of the measuring tool. This is the logic of financial littorals that this thesis puts forward.

This genealogy of ambiguity is based on the role that architecture and the construction of space play and have played in the making of financially built environments. In this regard, not only has ambiguity been used as a form of control, but it also allows challenges to power structures by using the circumvention tactics of capital and offshoring. The liminal condition of the shoreline as a financial littoral is here a *dispositif* for investigating the agency of boundaries in the urbanisation and *environing* processes of global speculation. The next three chapters investigate the phenomenon of *littoralisation* from the perspective of the shore, the offset, and the offshore.

¹⁸⁷ Saskia Sassen, *Territory, Authority, Rights: From Medieval to Global Assemblages* (Princeton University Press, 2008), 13-14.



20: Shifting encounter between waters of different densities: Boundary between melted coastal waters influenced by glacial weathering (light blue) and offshore waters of the Gulf of Alaska (darker blue). Ken Bruland, USGS 2007.

1– SHORE

Spending the Summer: The Invention of the Coast

‘Est autem litus maris, quatenus hibernus fluctus maximus excurrit.’

[The shore of the sea extends to the point attained by the highest tide in winter.]

—Justinian I, *Code*¹⁸⁸

1.1 Resolution of the Ruler and the Littoral Exercise of Ambiguity

On 28 July 1988 the Coastal Law was passed in Spain.¹⁸⁹ For the first time in the country’s history, a law explicitly identified the shoreline as a juridical entity in order to protect it—the previous law in 1969 was merely administrative and in any case was hardly enforced.¹⁹⁰ The 1988 law opens by defining the coast according to its length: 7,880km. With this measurement of an abstract line that did not previously exist, the shoreline reveals the political, ecological, architectural, and economic pressures upon the boundary between land and sea. The shoreline is indeed a line that does not exist; it is a thick, liminal zone. This thickness is defined differently in different contexts. At a European scale, for example, it is a variable strip, whose width depends more on environmental management than existing administrative or planning units.¹⁹¹ For practical operations, it is considered to be about 10km-wide. In Spain, in order to calculate the population of coastal zones, the 1988 Coastal Law defined the thickness of the shore as only 5km-wide—meaning that 35% of the population was concentrated in an area that constituted 7% of the national territory.¹⁹²

Colliding with this legal definition, a series of contradictory measurements describe the length of the Spanish coast: 8,000km according to the *History of Coastal Engineering in Spain* by Miguel Ángel Losada et al.; 7,879km according to the Spanish National Geographic Institute; 7,268km according to the World Resources Institute; and 4,964km according to the CIA-authored *The World Factbook*.¹⁹³ Mismatching dimensions referring to the same territorial boundary expose

¹⁸⁸ Justinian in George M. Cole and Donald A. Wilson, *Land Tenure, Boundary Surveys, and Cadastral Systems* (Boca Raton, FL: CRC Press, 2017); Lal Mohan Doss, *The Law of Riparian Rights, Alluvion and Fishery* (Bombay, London and Madras: W. Thacker & Co, 1891), 34.

¹⁸⁹ Spain, ‘Ley Orgánica 22/1988, de 28 de julio, de Costas’. *Boletín Oficial del Estado*, 29 de julio 1988, núm. 181, 23386-23401.

¹⁹⁰ Ibid.

¹⁹¹ European Union, ‘Recommendation of the European Parliament and of the Council of 30 May 2002 Concerning the Implementation of Integrated Coastal Zone Management in Europe’, *Official Journal* L148, 6 June 2002. 24-27.

¹⁹² Spain, ‘Ley Orgánica 22/1988, de 28 de julio, de Costas’. *Boletín Oficial del Estado*, 29 de julio 1988, núm. 181, 23386-23401.

¹⁹³ Miguel Ángel Losada et al, ‘History of Coastal Engineering in Spain,’ in *History and Heritage of Coastal Engineering*, ed. Nicholas C. Kraus (New York: ASCE, 1996), 465-466; ‘Longitud de la Línea de Costa Española por Provincias,’ Instituto Geográfico Nacional, accessed 8 June 2017, <http://www.ign.es/web/ign/portal/ane-datos-geograficos/-/datos-geograficos/datosGenerales?tipoBusqueda=longCosta>; ‘National Coastal Length’, GEO-3 Data Compendium, accessed 27 June 2017, http://geocompendium.grid.unep.ch/data_sets/coastal/data/coastline_length.htm; ‘The World Factbook,’ Central Intelligence Agency, accessed 27 June 2017, <https://www.cia.gov/library/publications/the-world-factbook/fields/2060.html>;

different methods of quantifying the space of the littoral and the complexity of forces negotiating between land and sea. By 2005, the Spanish shoreline was mapped only along 70% of its length (taking the 7,880km figure as 100%); in 2012, the shoreline was still recorded at only 95,85% of its extent; and as of 2017, the line still has not been fully traced.¹⁹⁴ Despite acknowledging its total as a round figure, the government simultaneously states the precise distances that have not yet been measured. Twenty-nine years after the Coastal Law was passed, and even after further amendments in 2013, there exists no official map with the complete shoreline of the entire country. Around 3% of the unmeasured length is still under litigation, meaning there is still over 200km of contested littoral. How did the state find itself in such a situation? What are the forces constructing that territorial boundary? How will climate change affect the architecture of a line that so far does not even exist?

This chapter investigates how the littoral has been produced both as an object and as a legal controversy: the shoreline has been taken to court in order to unveil the political and economic interests behind its making. Furthermore, the very matter of the shoreline exposes how its existence is intrinsically connected to the controversial understandings of ecology, zoning, and land use that contributed to the housing crisis (Figs. 21-26). The power and authority of politicians to reclassify space, to turn nature into buildable land, to change land use categories, and to speculate on the valuation of space has led not only to a collapse of the housing and real estate market, but also to a crisis of empiricism. Scientific reports demarcating the shoreline have been based on *factishes*: fictions that are used as arguments.¹⁹⁵ Following from Bruno Latour and Isabelle Stengers, the *factish* operates as a form of hybrid knowledge between the factual and the fetish, based around the entanglement of how different narratives construct scientific facts.¹⁹⁶ This does not imply that there is to be less trust on the production of truth. On the contrary, from an STS approach, to aim and increase awareness on the agency of the actual monitoring systems to produce alternative systems of knowledge-production informed through other channels. The ultimate goal would be to bypass those power structures that produce both a biased problem and a solution for it.

In the Spanish case, this translates into a conflict of interest. The firms commissioned to produce outsourced environmental reports to serve as expert evidence in court often find themselves in a self-perpetuating cycle: the party who desires a biased 'scientific' report chooses a docile technical studies provider, who in turn produces a malleable-enough report in order to secure future commissions.¹⁹⁷ Is there any possibility of an objective measure and demarcation of the shoreline? Does architecture have the power to adapt the fetishized holiday home that is at the core of contemporary political and housing struggles?

¹⁹⁴ Note that as of January 2017, the Ministry's latest official update is from 2012. 'Costas y Medio Marino,' Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente, accessed 5 January 2017, <http://www.mapama.gob.es/es/costas/temas/default.aspx>

¹⁹⁵ Federico Aguilera Klink, 'Discurso y Práctica de los Grupos Empresariales y Políticos: Megaproyectos y Megamentiras,' in *Economía, Poder y Megaproyectos*, ed. José Manuel Naredo and Federico Aguilera Klink, (Tegui: Fundación César Manrique, 2009), 63.

¹⁹⁶ Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Harvard University Press, 1991); Isabelle Stengers, *Cosmopolitics I*, trans. Robert Bononno (Minneapolis: University of Minnesota Press, 2010).

¹⁹⁷ Federico Aguilera Klink in discussion with the author, 2 April 2012.

21: Overlay of revenue generated by the main real estate and construction companies in Spain 2000-2007, and increase in housing prices in the same period

22-23: Benidorm, Spain, ca. 1960 and 2000s. Greenpeace.

24: Benidorm, Spain, August 2013.





25-26: La Manga del Mar Menor, Spain, ca. 1960 and 2000s. Greenpeace.

In his 'coastline paradox', mathematician and early weather forecaster Lewis Fry Richardson enunciated that the length of a shoreline relies on the ruler with which it is measured.¹⁹⁸ In the Spanish context it is important to understand the figure of the ruler both as an object and as a subject: the authority who defines a measurement and the accuracy of the tool used in that measurement; when a coastline is measured in kilometres, increments less than one kilometre in length are ignored. Consequently, the resolution of the ruler is what eventually designs the measured object. The reduction of units to the infinite allows for infinitely many types of measurement.

In contemporary technology, that ruler has been superseded by pixels. Satellite imagery can potentially increase the accuracy of the line, and yet, in most cases it is the microscopic materiality of sand that brings the demarcation into question: not the view from above, but from below, from the nature of the ground itself. It is not the 'easily-measured' high water mark during spring tides, but rather the particles of sea salt that have to prove their presence or absence.

Despite a desire for clearly defined boundaries, the Spanish National Geographic Institute (IGN) acknowledges the controversy embedded in measuring territorial boundaries. For example, the location of the geographic centre of a country is crucial to defining its extremities. And yet, the very institution founded to regulate the geography and cartography of Spain claims that the demarcation of the geographic centre is unnecessary, given the infinite possible perimeters.¹⁹⁹ The IGN quotes Oscar S. Adams' *Geographic Center of the United States* to argue that – outside the popular imaginary – there will never be agreement on the territorial centre.²⁰⁰ In fact, there is no objective method to locate the geographical centre of a territory; thus, the IGN has decided it is more rational to ignore that centre completely.²⁰¹

If the Spanish geographic authority finds it impossible to calculate the perimeter, how can the Spanish Ministry of the Environment argue that there not only is a *precise* perimeter, but that it is legally operable? This contradiction not only challenges the logic of private property and the demarcation of building land, but it unveils the logic of power embedded in spatial margins and how their ambiguity has been used as a political tool to increase profit margins.

Disguised under an environmental narrative, spatial margins have been at the core of the most recent cycle of financial speculation. At the international level, the United Nations Convention on the Law of the Seas (UNCLOS) forms the basis for the conservation paradigm of the 1988 Coastal Law. It was devised at the beginning of the neoliberal age, between 1973 and 1982, and is a clear case of how the demarcation of waters and the drawing of baselines is a way to extract resources under the masquerade of environmental protection. As explained in the

¹⁹⁸ Lewis Fry Richardson, 'The Problem of Contiguity: An Appendix of Statistics of Deadly Quarrels,' *General Systems Yearbook*, 6 (1961), 139-187.

¹⁹⁹ 'Preguntas Frecuentes Datos Geográficos,' Instituto Geográfico Nacional, accessed 15 June 2017, <http://www.ign.es/web/ign/portal/preguntas-frecuentes>

²⁰⁰ US Department of Commerce, 'Geographical Center of the United States,' National Oceanic and Atmospheric Administration, National Ocean Survey. Includes a reprint of Oscar S. Adams, 'Geographical Centers,' *The Military Engineer*, 24 (1932): 586-587.

²⁰¹ IGN, op. cit.

introduction, the 'Cousteauization' of the ocean raised awareness of a global ecological threat, while allocating funding to the study of extractable resources in the seas. Following UNCLOS international regulations, not only the coasts became financialised spaces. Any state was entitled to claim its territorial waters at an offset of 12 nautical miles (measured from the low-water tide), with the possibility of claiming additional territory as part of a so-called Exclusive Economic Zone. By scientifically proving that the geological composition of the seabed is the same as soil onshore, any nation could expand its dominion – not to protect more of the ocean, but to exploit and appropriate additional resources.²⁰² Just like the landward shoreline, the territorial sea was subject to factishes supplied by objective reports. Littoral space became a resource that needed stewardship.

Taking advantage of this opportunity, Spanish expeditions have sailed the Atlantic over the past decades to collect underwater sediment samples as legal evidence to prove the relationship between the material composition of onshore soil and the seabed beyond the 370-km width of the EEZ.²⁰³ In the Canary Islands, the same place where the beetle and the seagrass challenged the demarcation of the shoreline, this allowed for the expansion of Spanish territorial waters up to 648 km.²⁰⁴ This extension of the zone was based on the discovery of the Garoé Pinnacle, a submarine geological formation that proved a material connection to the volcanic magma coming from the archipelago. Hence, the UN allowed Spain in 2014 to annex 296,000 km² of the ocean and exploit its natural riches.²⁰⁵ Potentially the world's largest deposit of tellurium, a key chemical component in solar panels, was recently discovered 463 km off the Canary coasts, where mining companies can harvest economic value from the sun thanks to the geological components of the seabed.²⁰⁶

Not only does the geological composition of the soil affect the shoreline dispositif, but seismic forces also influence the management of the coast as a contested space of inhabitation. On 1 November 1755 at 9:40 am, a devastating earthquake of 8.5-8.9 on the Richter scale, followed by a tsunami and a series of fires, destroyed the city of Lisbon at the coastal epicentre of the Portuguese state. Killing up to 100,000 people, it constituted one of the deadliest events in the history of the European continent. After so many buildings were shattered, coastal urbanisation at large entered a profound crisis. The earthquake struck at a time when the balance of power between church and state, and between science and religion, was quite delicate.²⁰⁷ Indeed, it was the first earthquake to be investigated on modern scientific lines, with data collected

²⁰² This system derives from Cornelius Bynkershoek and his *De Dominio Maris* (1702), which restricted the maritime dominion to the actual distance within which cannon range could effectively protect it. Most maritime nations adopted this principle, which developed into a limit of 3 nautical miles (5.6 km) off the shore of any country as the seaward extent of the shoreline.

²⁰³ 200 nautical miles in imperial units.

²⁰⁴ States also have rights to the seabed of what is called the continental shelf up to 350 nautical miles (648 km) from the coastal baseline, beyond the exclusive economic zones.

²⁰⁵ RAD Agencias, 'España Amplía Su Soberanía Hasta las 350 Millas al Oeste del Archipiélago,' *La Provincia*, 23 December 2014, <http://www.laprovincia.es/canarias/2014/12/23/espana-amplia-soberania-350-millas/659795.html>

²⁰⁶ José María Rodríguez, 'Telurio, Cobalto, Vanadio...El Tesoro "High-Tech" de las Abuelas de Canarias', *El Periódico*, 15 April 2017, <http://www.elperiodico.com/es/noticias/sociedad/telurio-cobalto-vanadio-tesoro-hi-tech-las-abuelas-canarias-5974832>

²⁰⁷ Amos Nur and Dawn Burgess, *Apocalypse: Earthquakes, Archaeology, and the Wrath of God* (New Jersey: Princeton, 2008), 228; Andrew Robinson, *Earth-Shattering Events: Earthquakes, Nations and Civilisation* (London: Thames & Hudson, 2016), 20.

systematically through an official questionnaire that was distributed by parishes to their members.²⁰⁸ Its thirteen questions covered matters such as the timing and direction of the earthquake; aftershocks and previous earthquakes; the earthquake's effects on movement in the sea before the tsunami; the number of deaths; the duration of fires; damage to buildings; food shortages; and the immediate measures taken by those in positions of civil, military, or ecclesiastical authority.²⁰⁹

Determined to use the disaster to destroy the influence of the Jesuits, PM Marquis of Pombal replaced the authority of the church with his own dictatorship. In other words, he civilised the nation at the same time that he enslaved it.²¹⁰ Only four years after the earthquake, he expelled the Jesuits from Portugal and its colonies and appropriated their large land holdings in Lisbon for himself. By blaming the church and religion, Pombal took advantage of new possibilities for urban speculation. Indeed, tension between church and state was at the core of larger debates around Enlightened despotism at the European level. The battle between divine and rational thought provoked a crisis of both power and the shape of urbanity. On the one hand, the church argued that the earthquake was the result of divine wrath and a punishment for the city's moral failings. Intellectuals like Voltaire argued that the earthquake was God avenging the cruelty of the Inquisition. On the other hand, Rousseau argued that it was the fault of people, for choosing to invest in fragile urban buildings and packing them with valuable possessions, rather than living in safe, small houses, in natural surroundings, where they could easily escape.²¹¹

Despite the fact that the fatal event put Iberian seismology at the centre of discussions on whether humans were building too close to the water (and too close to each other), it is striking that since the 1755 earthquake, seismology has been left out of definitions of the coast. This is especially perplexing as the fault line that separates the Eurasian and African tectonic plates tilts the Iberian landmass in 1000-year long cycles. Archaeological remains have shown that the land where Barcelona lies today used to be completely submerged, and the shoreline was several kilometres further inland (Figs. 27-29). And in excavations of pre-Roman settlement in Valencia, structures typical of land activity have appeared under water, indicating that the sea level has risen considerably in that area.²¹² The floodplains in the south of Spain and the sharp cliffs of the north are a result of these cycles of tectonic tilt. Furthermore, recent seabed-fracking initiatives 30 km off the coast of Castellón have created new fault lines, as the Castor Mining project provoked 512 seismic events on Spain's Mediterranean coast in only its first month of explorations.²¹³

²⁰⁸ Charles Davison, *Great Earthquakes* (London: Murby & Co, 1936); Robinson, *Ibid*, 67.

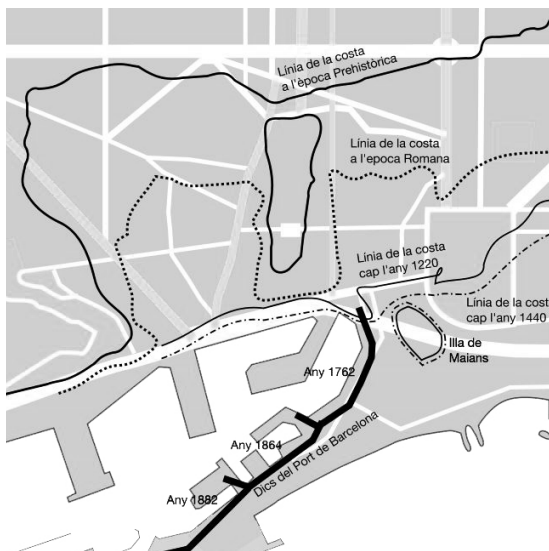
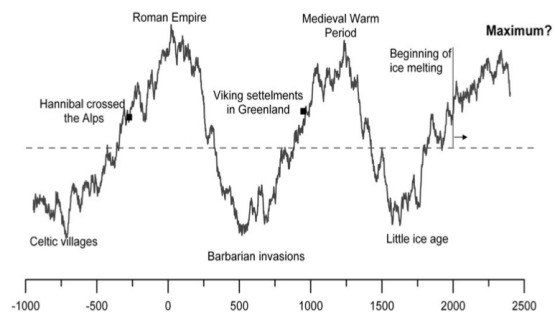
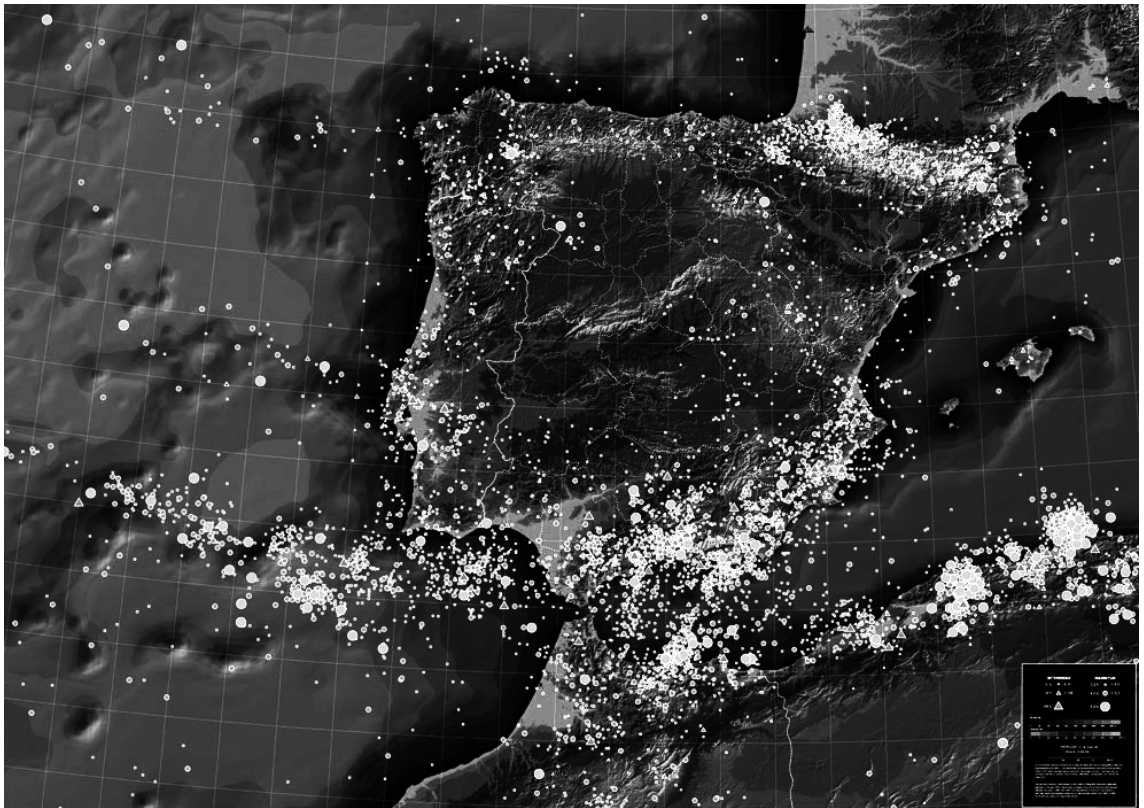
²⁰⁹ Robinson, *Ibid*.

²¹⁰ Kenneth Maxwell, *Pombal: Paradox of the Enlightenment*. Cambridge: Cambridge University Press, 1995; Robinson, *Ibid*.

²¹¹ Robinson, *op. cit.*, 71.

²¹² Pilar Carmona González, José Miguel Ruiz Pérez and Miriam Ibáñez Solaz, 'Erosión Costera y Cambio Ambiental en el Humedal de Cabanes-Torreblanca (Castelló). Datos Para una Gestión Sostenible,' *Boletín de la Asociación de Geógrafos Españoles* 66 (2014), 161-180.

²¹³ Elena G. Sevillano, 'Los Expertos Confirman la Relación entre los Seísmos y el Proyecto de Gas Castor,' *El País*, 12 May 2014, http://sociedad.elpais.com/sociedad/2014/05/12/actualidad/1399897547_384101.html



27: Seismic activity in the Iberian Peninsula (1048-2003), Instituto Geográfico Nacional.

28: Cycles of sea level change in the Mediterranean and main historic events. Losada et al., 2011.

29: Historic shift of the shoreline in the city of Barcelona during Prehistory, Roman period, 1120, 1440, 1762, 1864, and 1882.

If we were to consider real estate over longer periods, the repetition of geological cycles and appearance of seismic events would render the demarcation of the coast useless for building purposes. There is a historic cycle of sea level rise and fall that lasts approximately 500 years, which demonstrates the need for a flexible definition of the shoreline. It is a zone that is perpetually in motion, shaken by unexpected and literally earth-shattering events that do not fit in the legal definition of the littoral.

Changing width and depth over time requires a four-dimensional concept of the coast, which is remarkably missing from its contemporary legal rationale. Currently, the 1988 shoreline definition poorly addresses its changing character by considering it not as a single line, but as a zone of multiple offset boundaries. However, this attempt to regulate the spatial complexity of the coastal landscape is still only a two-dimensional logic.²¹⁴ This conception of the shore increases the revenue of major constructor corporations, without addressing the actual ambiguities of its character. By trying to facilitate the coast as a space that is public, free of cost, and freely accessible to all, the primary effect is for it to become freely developable.

In order to regulate universal accessibility to the sea, the Spanish Maritime-Terrestrial Public Domain (DPMT) subdivided it into two main spaces: the end of the sea and the beginning of building land. The sea as a *public* domain is a coastal commons of 'nature'. According to the written definition, the DPMT includes: the shore, tidal rivers, marshlands, coastal lagoons, swamps, and estuaries flooded by the influence of the sea; places with loose sea sediments like beaches, escarpments, dunes, and verges (with or without vegetation) formed by the effect of the sea, coastal winds, or any other natural or artificial cause; territorial and internal waters, including both the seabed and subsoil; any natural resources corresponding to the former; landfills, either due to sedimentation, accretion, sea recession, and infrastructural or drainage works (including lighthouses or signs); land regained by the sea; sensibly vertical cliffs; formerly coastal spaces; islets in international and national waters; and harbours.²¹⁵ The end of the sea is also subdivided into: an inner shoreline, which is the actual end of seawater (where waves break and die); and an outer shoreline, which is the end of the landscape affected by seawater (coastal dunes, marshes).

In contrast, the beginning of building land or the *private* domain corresponds to human activity and real estate interests. This is separated from the outer shoreline through a secondary buffer, which includes an easement of protection (100m from the outer shoreline, possibly extendable for another 100m); an easement of transit (6m from the outer shoreline, extendable up to 20m); and an easement of access to the sea (free public access for cars up to a line 500m away from the outer shoreline, and for pedestrians, up to 200m away).

²¹⁴ The complexity of the coastal edgelands has been formulated through different comprehensive ecological concepts, like the foreshore. Lal Mohan Doss, *The Law of Riparian Rights, Alluvion and Fishery* (Bombay, London and Madras: W. Thacker & Co, 1891), 33.

²¹⁵ Spain, 'Ley Orgánica 22/1988, de 28 de julio, de Costas'. *Boletín Oficial del Estado*, 29 de julio 1988, núm. 181, 23386-23401. Articles 3 and 4.

As the parameters above indicate, the shoreline does not exist as a line. It is rather a considerably wide, politically-constructed zone ranging up to 500m from the water according to urban planning codes and up to 5 km according to taxonomies of human geography. The actual thickness of the littoral depends on setbacks and offset buffers between the inner end of the water and the outermost beginning of buildable land. The shoreline-zone allows for multiple loopholes in the definition of physical features. Since 1988 hundreds of legal cases have challenged the definition of the shores by taking advantage of these ambiguities. For instance, if a *natural* dune is stabilised and fixed (proving that it no longer moves), it can be automatically excluded from the realm of the coast and turned into holiday homes on the seafront.²¹⁶

In practical terms, these financial littorals are physically built through a series of boundary stones (*mojones*). The average distance between them, 50 or 100 metres, is defined by the government and materially structures the resolution of the ruler. However, in legal cases involving steep topographies, it has been proven that it would be better to have them in closer proximity, possibly even every 5 to 10 metres, implying a tenfold increase in the current resolution. Furthermore, when cliffs are modelled in three dimensions at a local, discrete level, the representation can actually challenge the outdated two-dimensional calculation that defines the average slope of a cliff. If that slope is above the 60° threshold for a segment of the littoral, the whole cliff belongs to the sea, whereas if the slope is less steep, it enters the realm of buildable land.²¹⁷ However, high-resolution modelling is carried out only in the case of conflict between litigants who can afford it, making precise measurements a valuable commodity.

Apart from loopholes in the geomorphologic or topographic resolution of the coast, the ambiguous definition of the seasons also plays a crucial role. As the processes of climate change become more acute, millenary principles regulating the impact of seasonal tides on the geometry of the shoreline are becoming less relevant. According to the laws of Justinian in Constantinople in the 6th century, the highest tide was in winter, as Eastern Mediterranean storms are rarely as strong in spring or summer. These old taxonomies have indeed become obsolete as the cycles of climate-related events start to follow unprecedented patterns (Figs. 30-32). However, the manner, extent and permanency of these changes still govern and determine the ownership of the soil affected by them.

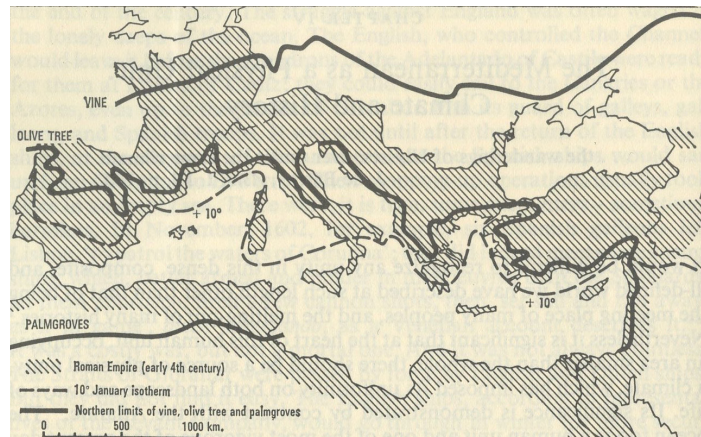
For the sake of accuracy, and given that weather conditions and tidal movements along the Spanish littorals differed from those in Constantinople, Iberian legislators also used climate to shape the law. Justinian's principles were adapted to the western Mediterranean by incorporating the higher variability of the Atlantic coasts. In the seventeenth century, France refined the principle with the 1681 *Ordonnance* bylaws that declared the shoreline as the line reached by the highest floods in March.²¹⁸

²¹⁶ Sentence A.N. 04-06-03. Recurso nº 0627/1999 (DL-42-Baleares).

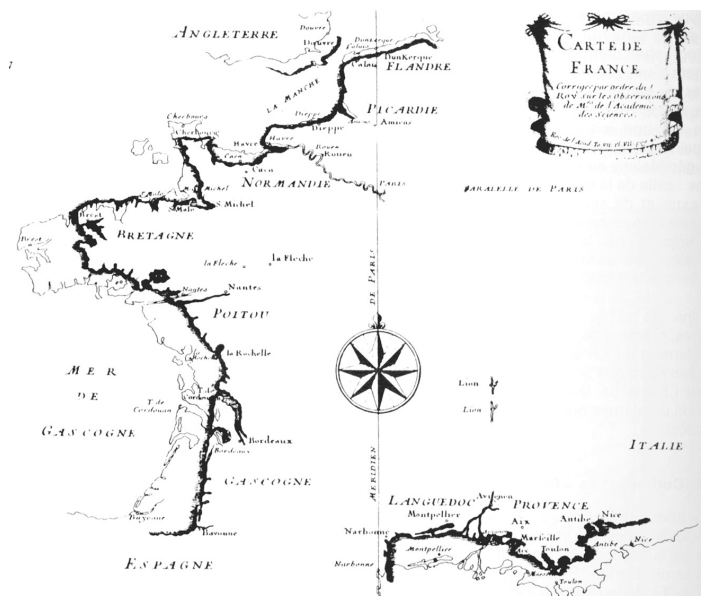
²¹⁷ 'El Deslinde Topográfico del Dominio Público Marítimo Terrestre y su Problemática Pericial,' Albireo Topografía, accessed 2 May 2017, <http://www.albireotopografia.es/deslinde-topografico-dominio-publico-maritimo-terrestre-pericial/>

²¹⁸ Mohan Doss, op. cit., 34.

30: The 'true' Mediterranean, from the olive tree to the great palm groves. Fernand Braudel, 232.



31: Correction of the French shoreline measurement technologies improved. Louis XIV claimed afterwards that he had never lost as many territories to any enemy as he did to his own Academy of Sciences. César-François Cassini, 1682.



32: Chinese engineering processes to claim territorial waters by means of artificial islands in the South China Sea, CSIS/AMTI 2015.



These yearly fluctuations are still classified as those that observe a fixed periodicity and regularity (*ordinary*) and those that observe no such periodicity at all, occurring seldom and at irregular intervals (*extraordinary*).²¹⁹ According to the 1969 Spanish Coastal Law, which continued the Justinian universalist tradition, the shore is determined by the highest tide during *ordinary* storms. The 1988 Coastal Law, however, extended its definition to the highest tide in either *ordinary* or *extraordinary* storms, as long as there is *known evidence*. The main aim was to shift the criteria from the frequency of the storm to the measurable materiality of their impact. It is nonetheless remarkable how the law still defined *extraordinary* as an unusual weather event that occurs less than five times within a ten-year period (redefined as three times within a five-year period in the 2013 amendments). This shortened the cycle of uncertainty, but still recklessly acknowledges that houses on the shore can be flooded up to three times every five years before considering any change in the demarcation.²²⁰

Almost three decades later, that arbitrary definition is still too indefinite to regulate the ownership of the coast based on weather and climatic conditions. What does *extraordinary* and *known evidence* mean in today's legal context? Do these terms depend on 'nature' or can they be moulded by human activity/reason/interests? A remarkable case in a coastal village outside Valencia exposes the power of real estate in inventing the accountability of weather events: after a storm completely flooded the coastal village it was argued that it was *only* fresh rainwater – and not a drop of seawater – that had covered the streets.²²¹ Consequently, the shoreline did not need to be redrawn further inland after that *extraordinary* event.

Seasons and seasonalities are not only affected by climate alterations but by the differential flows of tourists, which create the high and the low seasons for flowing capital. After a coastal waterfall in Galicia was drained to a hydropower plant managed by one of the largest real estate oligarchic families in Spain, the Catholic municipality dictated that water would only flow during the 'tourist season', Sundays at noon, special celebrations and national holidays.²²² Not only is the duration of seasons in crisis, but the coast itself has also acquired 'opening hours' that turn nature into a mediated spectacle. The hydropower company was nevertheless congratulated for facilitating such an event.²²³ It was not the highest tide in winter principle that regulated the coast, but a spiritual devotion towards a sort of 'water miracle'.

Real estate developers trying to shorten the distance from hinterland cities to the shore have largely commodified the 'natural beauty' of the coast. This making of relative proximity and distance to the seafront is contested even today. The continuity of the littoral soil is materially

²¹⁹ Ibid, 33.

²²⁰ The 2013 amendments introduced back into the demarcation process the notion of *ordinary* weather events as an exception applied to the island of Formentera.

²²¹ Enrique Fernández Escalante and Manuel García Rodríguez, 'Aspectos Procedimentales de Geomorfología Litoral. Aplicación práctica de la Ley de Costas en la Delimitación del Dominio Público Marítimo-Terrestre (DPMT),' *Tecnología y Desarrollo* 1 (2004), 26.

²²² José Precado, 'Un Cambio Legal Permite a Villar Mir Evitar un Pleito de Ocho Millones Por Secar una Cascada con Permiso de Fraga', *El Diario*, 2 March 2017, http://www.eldiario.es/economia/Villar-Mir-condena-millones-Manuel_Fraga-Xunta-cascada_0_613488830.html

²²³ When the conservative party lost control of Galicia in 2011, the waterfall was reverted to its original condition. However, the lawyers of the hydropower company managed to make the environmental crime prescribe.

ambiguous. Wind, water, topography, geology, seismicity, and resource extraction all constitute anthropogenic forces that make it impossible to trace the influence of the sea on the land, and vice versa. And these geo-sophical distinctions have economic implications; they legitimise the right of manmade structures to sit at certain distance from 'the end' of the sea. According to coastal demarcation protocols, some buildings are part of the maritime-terrestrial public domain and have to be torn down, others remain on building land and are allowed to stay, and still others are allowed to be built anew on coastal wild land. Even though the Coastal Law was passed in 1988, it was not until 9 October 2002 that the first structure was forcibly purchased and demolished for 'invading' the domain of the sea.²²⁴

Local and national interest groups have initiated alliances and lobbies since that demolition, so that a powerful oligarchy now decides what lies on which side of the line. Given the numerous conflicts and significant litigation that began immediately after the general panic at the prospect of losing one's sacred private property – something that capitalist regimes and democratic constitutions have always ensured as a basic human right – the Spanish Ministry of the Environment published a set of guidelines for surveyors to more effectively carry out the demarcation of the coast. The document provides jurists with a procedure on how to properly draw the limit between land and sea. However, they still contain problematic distinctions between the 'virgin' coast and the 'anthropogenic' coast, as if the idea of the littoral had never been manufactured.²²⁵ Indeed, the virgin coast is defined as the one that 'has *practically* not been modified by human action'.²²⁶

This ambiguous definition again perpetuates the notion that an 'original' environment can coexist with highly urbanised areas and that a ruling authority can itemise the human impact on ecological systems. As of the 1988 Coastal Law, this division between *natural* and *artificial* processes includes at the same time *natural* impacts on the *artificial* landscape, and *artificial* impacts on the *natural* realm.²²⁷ This taxonomy is profoundly contradictory – the law juxtaposes 'natural dunes formed by natural or artificial actions' with 'naturally flooded land that is no longer flooded because of artificial means'.²²⁸

The intricacy of these oxymorons and word games not only allowed for the aforementioned legal loopholes, but is also a direct result of the still-unresolved debate between Voltaire and Rousseau. Two hundred sixty-two years after the Lisbon earthquake, the thresholds between divine and rational, natural and artificial are still playing the same role in politics. The logic of measurement and the paradigm of calculation aim to make the line more and more accurate; thinner and thinner and with increased precision. However, this chapter argues that the shoreline needs not to increase but to decrease in resolution; to become thicker, higher, deeper,

²²⁴ Fernández Escalante and García Rodríguez, op. cit., 28.

²²⁵ Spain, 'Ley Orgánica 22/1988, de 28 de julio, de Costas'. *Boletín Oficial del Estado*, 29 de julio 1988, núm. 181, 23386-23401. Introduction.

²²⁶ Ministerio de Medio Ambiente, 'Instrucciones Técnicas para la Realización de Deslinde del Dominio Público Marítimo-Terrestre,' January 2006, 33.

²²⁷ García Pérez, op. cit., 396.

²²⁸ Spain, 'Ley Orgánica 22/1988, de 28 de julio, de Costas'. *Boletín Oficial del Estado*, 29 de julio 1988, núm. 181, Art. 6.2; García Pérez, op. cit., 396.

and blurrier. Effectively, the ruler needs to reduce its resolution over the landscape in order to rethink the architecture and geomorphology of the coast according to the flexibility of ecology.

1.2 The Origins of Littoral Value and Speculation on the Edgelands

Since the development of bacteriology, Dr Antoine Jérôme Balard's discovery of iodine and bromine in seawater, and the parallel discovery of their benefit to the human body, the coast has acquired the condition of a consumable commodity.²²⁹ The advantages of hygiene have not only led to new housing typologies, the circulation of fresh air, and more green spaces for urban inhabitants, but they have also led to the development of the coast for seasonal recreation, first as a luxury and later as affordable for the masses (Figs. 33, 34). Likewise, nineteenth century developers in Spain turned their gaze toward the coast, influenced by the international prestige in emerging European bathing towns, such as Bath, Cannes, Biarritz, Montecarlo, Nice, and San Remo.²³⁰ Little by little, coastal towns shifted to become accessible sites of networking and leisure for a new social class on the European Grand Tour: tourists.²³¹ With the rapid expansion of bourgeois society, seaside resorts provided an important site for investment and the circulation of surplus capital.²³²

The making of the Spanish coast was indebted to the mid-nineteenth century, when the state carried out an unprecedented project of infrastructure-building: new army facilities, prisons, schools, lighthouses, roads, railways, ports, sewage systems, and hospitals were built. The new railway network shortened the distance between perimeter and centre, and facilitated an increasing awareness of the existence of the shores of the country.

The littoral had so far been perceived as a faraway source of fear, frequently attacked by pirates and invaders; where mosquitos and malaria were a permanent threat; and where arid sirocco winds from the Sahara negatively affected human psychology. Institutions like the Corps of Spa Doctors (1816) appeared to legitimise and consolidate the 'discovery' of the coast.²³³ But after the 1866 Water Law, the Spanish littoral started to be developed through disease mitigation: the Law on Prevention of Typhus (1869), the Law on Public Infrastructure (1877), and the Royal Command to Correct the Propagation of Leprosy (1878) began to secure the coast.

On that basis, the later Cambó Law (1918), one of the main precedents for the modern 1988 Coastal Law, promoted the drainage and sanitation of coastal lagoons, marshes, and swamps infested with deadly mosquitos, bacteria, and viruses. The Cambó Law introduced two new policies encouraging land speculation: the introduction of tax exemptions allowed those who

²²⁹ Alain Corbin, *The lure of the Sea: The Discovery of the Seaside in the Western World, 1750-1840*, trans. Jocelyn Phelps (Berkeley and Los Angeles: University of California Press, 1994), 70.

²³⁰ Luis Sazatornil Ruiz, *Arquitectura y Desarrollo Urbano de Cantabria en el Siglo XIX*, (Santander: Universidad de Cantabria, 1996), 75.

²³¹ *Ibid*, 76.

²³² Anthony D. King, *The Bungalow: The Production of a Global Culture* (Oxford: Oxford University Press, 1995), 71; David Harvey, 'The Urban Process Under Capitalism: A Framework for Analysis,' *International Journal of Urban and Regional Research* 6 (1977), 24-33.

²³³ Spain, 'Real Decreto sobre Creación del Cuerpo de Médicos de Baños', Madrid, 29 June 1816; 'Real Decreto sobre Creación del Cuerpo de Médicos Directores de Aguas Minero Medicinales,' Madrid, 1890.

carried out drainage works to automatically acquire reclaimed land; and the chance to drain wetlands that were no longer regarded as 'unhealthy'.²³⁴ In the name of hygiene, the 'improvement' of coastal land made fortunes out of new ownership. Unproductive, idle landscapes like 'insalubrious' wetlands were turned into valuable agricultural or buildable land as part of a so-called 'Patriotic Award': swamps were gifted to veteran soldiers as a pension.²³⁵

Spanish monarchs promoted this shift of the coast from a site of fear and disease into a site of desire, cures, and treatment, as it added economic returns, health values, and social prestige to the coast. The fact that the royal family spent their summer holidays in San Sebastián or Santander in the Atlantic corniche led to a wave of real estate speculation in former fishermen's settlements. Queen Isabel II herself made an unprecedented land purchase in the coastal outskirts of the village of Santander, choosing El Sardinero beach as the site for her royal holidays.²³⁶

Though the sale to the Queen unravelled in 1857, the possibility nevertheless favoured a small group of local tradesmen, who were granted the royal privilege to set up a banking association in the booming coastal town.²³⁷ One hundred sixty years later, that financial conglomerate has grown to an unimaginable scale, but it still carries the name of the town that profited from the demarcation of the coast as a site of circulation of capital: Santander Bank. Not only did the Queen give them immediate financial advantages to found a new bank, but the frenzy for holiday homes near that of the royal family led to the appearance of a new social class of renters or *hacendados*: people who foresaw the demand for seasonal holidays alongside the aristocracy.

Coastal leisure is indeed a form of business mediating human relationships and the built environment. As part of that summer migration, an unprecedented real estate bubble emerged in Santander. It was boosted by capital lending institutions established with the urban transformation of Paris, like the Péreire brothers and the Saint-Simonians, as well as the newly founded French-Spanish credit society. By financing the construction of the railway network on the northern coast, they created a parallel to the train connection between Paris and Nice that had led to the invention of the Côte d'Azur.²³⁸

New or improved transport infrastructure facilitated the arrival of new property buyers and holiday tenants to the coast en masse.²³⁹ With them appeared a housing typology imported from Haussmann's Paris. It rationalised rents and maximised profit, without considering the vertical

²³⁴ Manuel Ceballos Moreno, 'La Problemática Jurídico-Administrativa de las Zonas Húmedas,' *Humedales Mediterráneos* 1 (2001), 155.

²³⁵ *Ibid.*, 156.

²³⁶ Sazatornil, op. cit., 50.

²³⁷ *Ibid.*, 62.

²³⁸ Bertram M. Gordon, 'El Turismo de Masas: Un Concepto Problemático en la Historia del Siglo XX,' *Historia Contemporánea* 25 (2002): 129.

²³⁹ Joaquín del Moral Ruiz, Juan Pro Ruiz and Fernando Suárez Bilbao, *Estado y Territorio en España, 1820-1930: La Formación del Paisaje Nacional* (Madrid: Catarata, 2007), 292.

stratification of social classes.²⁴⁰ Holiday-goers were socially homogenous, well-positioned families from privileged background, occasionally accompanied by servants who occupied windowless bedrooms deep inside fashionable seaside apartments. The domestic space was organised to maximally capitalise on the landscape: unusually deep buildings had a minimal view toward the sea. The new housing blocks decreased the width of each unit's oceanfront façade in order to maximise the returns in marketing the seaside apartment.²⁴¹ Those prototypical coastal flats thickened in depth as much as the shoreline itself would later.

Spending the summer (both time and money) led to the urbanisation of the littoral by equating time, leisure, and profit making. Not only did holiday homes emerge at a wide scale, but seaside promenades, spas, hotels, casinos, and other structures providing entertainment also blossomed along the ocean frontier: the summer had to be literally *spent*. By using the medicinal properties of steam, mud, algae, and water, the solid, liquid, and gas matter of the littoral started to shape both human bodies and architectural forms. It became a site for politics, where decision-makers would casually meet and interact.

If Santander and San Sebastián as nineteenth-century resorts for the privileged dominated the northern coast, the Mediterranean was rather urbanised for the working class.²⁴² The democratisation of beach tourism culminated in the implementation of CIAM's principles of modern architecture on the Catalan coast (Figs. 35, 36). The GATCPAC and GATEPAC modern architectural associations were involved in the first attempts to rationalise and extract value from the beach for the poor and the middle class, involving key figures of the late 1920s like Le Corbusier, Walter Gropius, and José Luis Sert.²⁴³ In particular, the *Ciutat de Repòs i de Vacances* (1930-32) was a paradigmatic plan for an entire holiday town that would avoid the 'exodus of the multitude towards better beaches' outside Catalonia.²⁴⁴

²⁴⁰ Sazatornil, op. cit., 167.

²⁴¹ For more details on the development of coastal bath tourism in Spain divided by regions, see Mercedes Tatjer, 'En los Orígenes del Turismo Litoral: Los Baños de Mar y los Balnearios Marítimos en Cataluña,' *Scripta Nova* 296 (2009), <http://www.ub.edu/geocrit/sn/sn-296/sn-296-5.htm>; 'Los Balnearios del Postiguet,' Asociación Cultural Alicante Vivo, <http://www.alicantevivo.org/2007/08/los-balnearios-del-postiguet.html>; Fernando Almeida García and Damián López Cano, 'La Costa del Sol Oriental: Un Conflicto Territorial entre el Turismo, la Agricultura y la Urbanización Metropolitana,' *Baética: Estudios de Arte, Geografía e Historia* 25 (2003): 67-80.

²⁴² By 1876, Santander had an average of 5,000 bathers and San Sebastián, 25,000. José María Beascochea Gangoiti, 'Veraneo y Urbanización en la Costa Cantábrica durante el Siglo XIX: Las Playas del Abra de Bilbao,' *Historia Contemporánea* 25 (2002): 186.

²⁴³ Fernando de Terán, *Planeamiento Urbano en la España Contemporánea 1900-1980* (Madrid: Alianza Editorial, 1982), 98.

²⁴⁴ Grupo de Arquitectos y Técnicos Españoles para el Progreso de la Arquitectura Contemporánea (GATEPAC). See Francesc Roca Rosell, 'A.C.: del GCATSPAC al SAC', A.C. (1975).

33: Advertising for the new Spa San Sebastián in Barcelona, ca. 1930s.



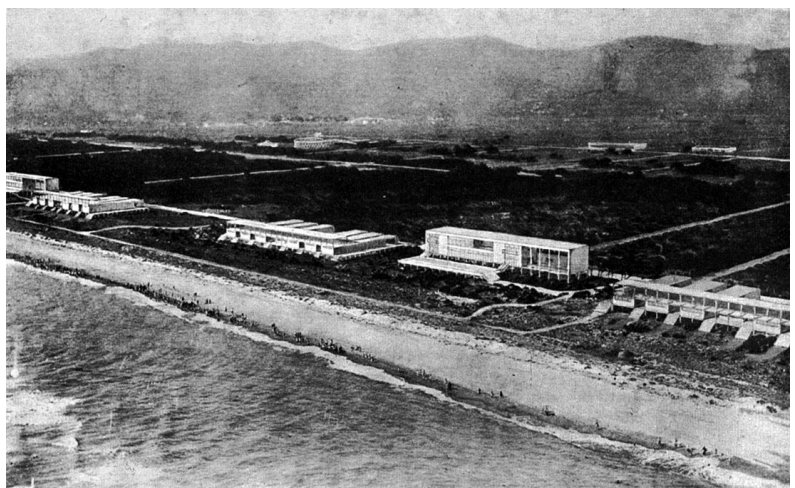
34: 19th century English bathing machine as a mobile space on the coast. Photographer unknown.



35: Coastal Baths El Postiguat, Spain. Built in 1864 and demolished in 1960.



36: Ciutat de Repós i de Vacances, GATEPAC (1930-32).



Coastal planners felt they had the responsibility to properly 'organise the coastal leisure of the masses,' as promoted on the cover of the seventh issue of A.C. Magazine (1932).²⁴⁵ Under that motto, a collage showed crowds marching over an urban masterplan that proposed a new coastal strip, disconnected both from old fishing towns and the aristocratic, nineteenth century seaside. The twentieth century urbanisation of the coast catered to a growing working class that started to question the aristocracy's exclusive use of the nation's beaches. Instead of the bourgeois seaside with a paved promenade, original coastal vegetation progressively blended the beach into the purpose-built resorts further inland in a *natural* way. At the same time, the coast offered a tabula rasa for modernist urbanism to implant new typologies and reject 'unhygienic' courtyards in favour of isolated high-rises and linear mega-blocks (without servant's rooms) facing the sea.

From that moment on the beach was an economic phenomenon that kept on growing, culminating in a boom of second-home ownership – an approach promoted by Franco's fascist dictatorship. As Franco's Minister for Housing José Luis Arrese put it in 1957: 'We want a country of proprietors, not proletarians'.²⁴⁶ The shift from tenancy to ownership not only led Spain to become one of the countries with the highest frequency of second homes per inhabitant, but it also turned the shore into an instrument for the disappearance of housing equality. The ownership of coastal homes generated such convenient revenue that it increasingly stigmatised the life of 'poor tenants' who rented. In sum, the coast had to be urbanised in order to modernise. Throughout the 1950s and 1960s the littoral was consolidated as *the* site for holidaymaking through marketing strategies emulating the fantasy of the Côte d'Azur. Segments of the Spanish coast started to acquire popular names that had never existed before, but that through the branding of light, colour, or properties of the landscape became sites of desire: Costa del Sol, Costa Blanca, or Costa Brava.

As described by a technical team hired by the government of Málaga in 1964, the urbanisation process was 'natural' to coastal villages and part of their imminent future; they had to be urbanised if they wanted to survive.²⁴⁷ The entirety of the coast was occupied, with only a few exceptions for points where urbanisation encountered 'natural obstacles'.²⁴⁸ It is remarkable how urbanisation was meant to be *natural* and how nature constituted *impediments* to progress in the Costa del Sol. What ruled was the construction of housing, while plants and animals were relegated to buffering wastelands. In this regard, Constantinos Doxiadis' architecture and planning office was commissioned in 1963 to envision how the Costa del Sol could change from a series of underdeveloped fishing villages into a site for international tourism and second homes (Fig. 37).

²⁴⁵ Ibid, cover image.

²⁴⁶ Isidro López and Emmanuel Rodríguez, 'The Spanish Model,' *New Left Review* 69 (2011): 6.

²⁴⁷ Juan Gavilanes Vélaz de Medrano, 'El Viaje a la Costa del Sol (1959-1969): Proyecto y Transformación en los Inicios del Turismo Moderno,' (PhD diss., Escuela Técnica Superior de Arquitectura de Madrid, 2012).

²⁴⁸ Ibid, 60.

Even if Doxiadis' proposal tried to integrate green space between pockets of real estate development, the approach nonetheless set the standard for future decades: designated areas where nature was supposed to end and building should begin. These invented landscapes appeared hand in hand with seasonal apartments built with mortgages and credit. This attracted a market of Spanish property owners as well as European investors and tourists, the latter of which increased in number exponentially after Spain joined the European Union in 1986.²⁴⁹

The massive drainage operations that started with the Patriotic Award continued with the unprecedented construction of dams during Franco's dictatorship.²⁵⁰ The alterations in the flow of sediment toward the coast needed to be counterbalanced with artificial nourishment for beaches, which could no longer support the idyllic image expected by tourists. In fact, the construction of dams to keep up with the water demand at new resorts is what eventually led to the destruction of the beaches that the same resorts depended upon.

New sands were brought in – not to nourish the coast, but to provide concrete for a new 'brick economy' based on real estate construction as the engine of growth for the national GDP. Sand began to operate as an economic indicator of speculation. The use of sand for construction mortar reveals the pace at which building activity operates, but it also testifies to the strength of the real estate sector. During the housing bubble, Spain was one of the leading European consumers and global exporters of mortar sands per capita; between 2007 and 2009, the use of construction sands dropped 30%, the highest fall in history.²⁵¹ In some regions, like Valencia, the collapse was astronomical: usage between 2006 and 2013 dropped almost 90%, three times the national average.²⁵² Not coincidentally, Valencia was also one of the regions with most urban-planning related crimes after the housing bubble. Sand usage indicates both environmental destruction and democratic erosion.

Both mortar sand and sea salt are intimately connected in the making of the literal littoral. The interconnected circulation of sediments exposes the shoreline as a set of spatial relationships that include the river source as well as the ocean and the export markets for capital circulation.²⁵³ In the 1980s and 1990s, while Northern Europe was speculating on finance, Spain was still speculating on building infrastructures in a much less sophisticated system.²⁵⁴ The coast was frantically turning wealth and global capital into second homes.²⁵⁵ As a result, the popular marketing of the coast shifted from *Costa del Sol* into dystopian terms reflecting the destruction of nature; *Costa del Golf* alluded to the unsustainable quantity of golf resorts in some of the most arid regions of the littoral; *Costa Nostra* was a word play with the Italian

²⁴⁹ 'Spain in Crisis: The Role of the EU,' Corporate Europe Observatory, accessed 17 March 2017, <https://corporateeurope.org/2012/03/spain-crisis-role-eu>

²⁵⁰ From 3.930 Hm³ national capacity when Franco took power, to 40.264 Hm³ when Franco died.

²⁵¹ Germany: 490 million Tons. Spain: 479. UK: 299. ANEFA, 'Informe Anual del Sector de los Áridos,' Madrid, 2008.

²⁵² Ibid, 2013.

²⁵³ Something that has been embedded for centuries in ancient holistic understandings of the coast, that do not stop the understanding of inhabitation space at the shoreline, like in more comprehensive Ahupua'a system in Hawaii.

²⁵⁴ Federico Aguilera Klink in discussion with the author, 2 April 2012.

²⁵⁵ Chris Paris, *Affluence, Mobility and Second Home Ownership* (Abingdon: Routledge, 2011), 9.

mafia's *Cosa Nostra*, given the ways in which capital and crime cooperated through the shady granting of planning permission.²⁵⁶

The volume of flows of capital around the shoreline is intimately connected to the class struggle of the soil itself. The ways in which rural or natural land could be reclassified into building land were – and still are – at the core of the ambiguous making of profit margins out of spatial margins (Fig. 38). Since the 1998 Land Law was passed in Spain by the conservative government to 'make available more affordable housing', corruption in classifying land use has reached unprecedented levels. As a reference, Spanish coastal landscapes have been losing the equivalent of eight football fields per day since then.²⁵⁷ The law has not facilitated access to housing, but rather enriched developers and politicians by initiating the housing bubble. The reclassification of land and the shifting boundaries between nature and city have changed at an unprecedented rate, especially when compared to neighbouring countries in Europe.

In 2004, Santander Bank – whose headquarters had been located on the most prestigious seaside boulevard in Santander since the Queen struck a deal with its founders – decided to move to Madrid.²⁵⁸ The global giant, today ranked the 33rd largest public company in the world, decided to build a Santander *banking city* in the capital, moving from the coastal periphery to the centre of the territory.²⁵⁹ From there, all main offices began to operate within 'one of the best corporate headquarters in the world'.²⁶⁰ Only three years after, on 13 June 2007 and in stark contrast to the obsession with homeownership now deeply ingrained in society, the bank decided to sell all its offices and not own any premises for itself, with the exception of the original site on Santander's seafront. The corporate giant tossed nearly the totality of their real estate assets at their peak value – a move comparable in scale to the Duke of Lerma moving the capital of Spain from Madrid to Valladolid in 1600.²⁶¹ From then on, the bank would only rent office space from other landlords at hundreds of branches across the country. Their total value of €4bn was divested from real estate in favour of other financial products. Just a few months later, the real estate bubble burst. This raises several crucial questions that remain open for further research: how could Santander Bank anticipate and sell the majority of its real estate assets at their peak, right before they dropped their value? And if so, what is their accountability in the housing crisis that they foresaw in time?

²⁵⁶ Antonio Romero and Miguel Díaz, *Costa Nostra: Las Mafias en la Costa del Sol* (Sevilla: Atrapasueños, 2009), 11-13.

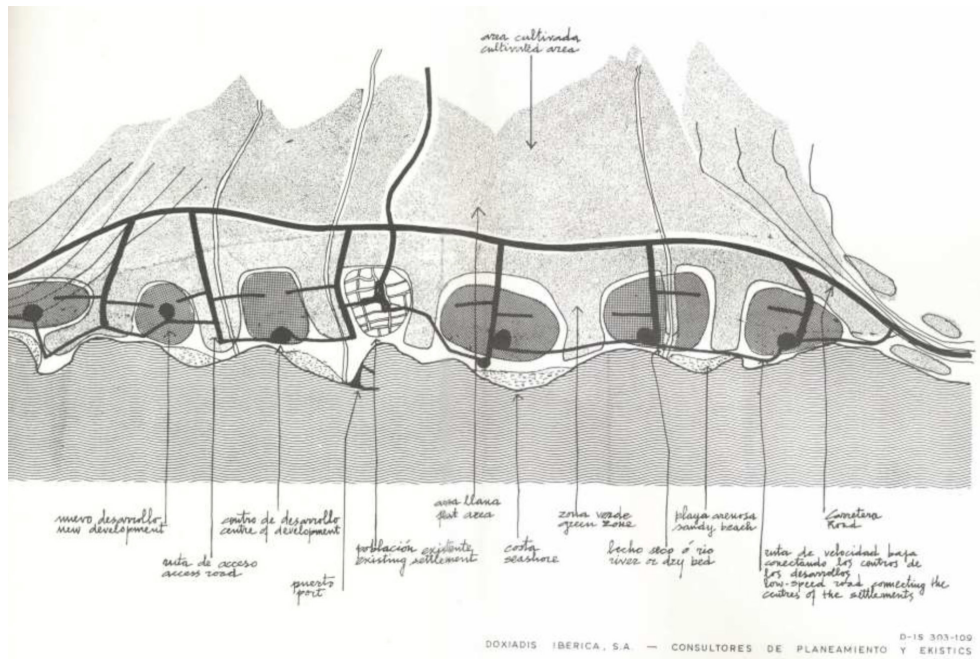
²⁵⁷ Íñigo Lazkano Brotóns and Agustín García Ureta, 'La Subordinación de la Conservación del Litoral a los Intereses Económicos en la Reforma de la Ley de Costas,' *IEZ* 12 (2014): 46; Greenpeace, 'Destrucción a Toda Costa 2013. Análisis del Litoral a Escala Municipal,' July 2013, 4; Miguel Ángel Losada, 'La Destrucción de las Playas Españolas,' *El País*, 20 August 2010.

²⁵⁸ Since 1909, Santander Bank has been chaired by members of the Botín family (Emilio Botín López, Marcelino Botín López, Emilio Botín-Sanz de Sautuola y López, Emilio Botín-Sanz de Sautuola y García de los Ríos, and currently Ana Patricia Botín-Sanz de Sautuola O'Shea). This has always sparked numerous sarcastic jokes in the media, as *botín* is synonym of loot and plunder in Spanish.

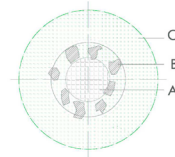
²⁵⁹ 'The World's Biggest Public Companies,' *Forbes Global 2000 Index*, accessed 8 July 2017, <https://www.forbes.com/global2000/#209a16ea335d>

²⁶⁰ 'Ciudad Grupo Santander,' Santander, accessed 3 May 2017.

²⁶¹ See Introduction of this dissertation.

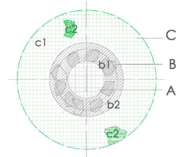


LS56
1956-1975



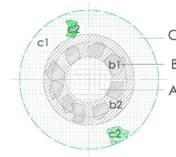
A. Suelo urbano	Soporte de la vida urbana (4)
B. Reserva urbana	Soporte de las actividades económicas (4)
C. Suelo rústico	Reserva (1) Bien excepcional (2) Suelo productor (3)

TRLS76
1975-1990



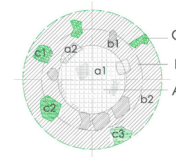
A. Suelo urbano	Soporte de la vida urbana (4) Bien financiero (2)
B. Suelo urbanizable Programado	Bien financiero (2) Soporte de actividades productivas (4) Bien financiero (2) No programado
C. Suelo no urbanizable	Reserva (1) Bien excepcional (2) Productor (3)

TRLS92
1990-1997



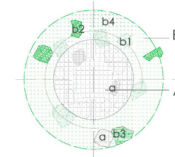
A. Suelo urbano	Soporte (4) Bien financiero (2)
B. Suelo urbanizable Programado	Bien financiero (2) Soporte (4) Bien financiero (2) Soporte (4) Reserva (1) Diseño (2) Bien excepcional (2)
C. Suelo no urbanizable	Diseño (2) Bien excepcional (2)

LS98
1998-2007



A. Suelo urbano	Bien financiero (2) Soporte de la vida urbana (4)
B. Urbanizable	Bien financiero (2) Soporte de la construcción (4)
C. No urbanizable	Bien excepcional (2) Soporte productivo (2) Reserva (1)

TRLS08
2007



A. Suelo urbano	Soporte de la vida urbana (4) Bien financiero (2)
B. Suelo rural	Soporte productivo (4) Bien excepcional (2) Soporte de la construcción (4) Reserva (1) Bien financiero (2)

37: 'Study for the Tourist Development of the coast between Málaga and Cabo de Gata.' Masterplan separating pockets of natural and built environments. Constantinos Doxiadis, 1963.

38: The class struggle of the soil: Diagrams explaining how to reclassify urban, buildable and rural land according to the Spanish Land Laws from 1956, 1975, 1990, 1998, and 2007. Class A refers mainly to 'urban land', B to 'buildable land', and C to 'rural land'. Source: Ángela Matesanz Parellada, 2009.

1.3 Environmental Crisis as the Erosion of Democracy

The environmental protection framework of the 1988 Coastal Law is both full of contradictions and incoherent.²⁶² Indeed, the law was an administrative process that kept things exactly as they were before the 1978 Constitution, but this time framed to appear environmentally and democratically valid.²⁶³ Regardless of the technical assessment of the natural or artificial condition of the coast, these facts can nonetheless be nullified in court, as by definition the demarcation of the shoreline is a *juridical* and not merely a *technical* or *administrative* process.²⁶⁴ This is a key distinction, as any tribunal can then negotiate land ownership between a private individual and the State. The court maintains the authority to ‘read technical evidence in a completely opposite way’.²⁶⁵ Despite all the effort to scientifically define the end of the sea and the beginning of buildable land, the court will always have the last word on the littoral. Hence, the courts became a powerful instrument for redistributing surplus value during the real estate boom according to the interpretations validating or nullifying city planning schemes and municipal master plans. Both the Land Law and the Coastal Law delimit (create, define, assign, or attribute) but do not limit (reduce, cut, or coerce) the legal and economic content of property.²⁶⁶ Rural land that urban development programs (*Programas de Actuación Urbanística*) deem to be unsuitable for building or not subject to urbanisation (woods or protected areas, regional or national parks) is not subject to claims for compensation and cannot be built on until the plan expressly sanctions it. These programs of plans, despite being under the umbrella of a national framework, are eventually under regional or municipal competence. It allows local authorities in power to classify land as fit to be developed according to their own criteria, making it gain an entirely different legal status with each reclassification.²⁶⁷ The clash between scientific argument and juridical interpretation puts nominally objective reports on a battlefield. Techno-scientific evidence has become closely connected to profit margins and the construction of second homes.

If the increase in housing construction had been mainly related to the construction of primary homes, there would not be a housing bubble but rather evolution to overcome a deficit.²⁶⁸ Isabel Concheiro argues that real estate bubble is the result of construction for speculation, which irreversibly transforms the landscape and creates housing stock that is unnecessary and thus difficult to reuse.²⁶⁹ While the housing bubble allegedly only became visible when it burst, it could previously be perceived through the exponential use of mortar sands and the increase in second-homeownership. Spain, with a total population of 46,5 million inhabitants in 2016, had a stock of one million empty houses after the crisis and hundreds of thousands of households unable to afford a primary dwelling. The contradiction in simultaneously having an overabundance of houses and a deficit of housing is the clearest result of speculation: land was

²⁶² García Pérez, op. cit., 420.

²⁶³ Ibid.

²⁶⁴ Ibid, 402

²⁶⁵ STS 20/12/2002 in Ibid.

²⁶⁶ Andrés Betancor and Javier García-Bellido, ‘Síntesis General de los Estudios Comparados de las Legislaciones Urbanísticas en algunos Países Occidentales’, *Ciudad y Territorio Estudios Territoriales*, 127 (2001): 99; Fernando Jiménez, ‘Building Boom and Political Corruption in Spain,’ *South European Society and Politics* 14 (2009): 258.

²⁶⁷ Ibid.

²⁶⁸ Concheiro, op. cit., 14.

²⁶⁹ Ibid.

turned into buildings for an artificial housing demand that failed to facilitate access to housing for those who truly needed it. The moment the bubble burst was also the moment when the processes that had led to the reclassification of space became apparent and were first challenged in court.

As presented in the introduction, the first municipal council dissolved in the democratic history of Spain was Marbella, on 4 April 2006. Its populist mayor and a former real estate developer Jesús Gil y Gil openly stated in an electoral meeting in May 1991 that he was indeed running for mayor in order to sell as many flats to Spaniards as to Northern Europeans.²⁷⁰ A decade and a half later, the Court of Justice unveiled a network of politicians who had been using their power to adapt the limit between building land and the coastal commons for their own interests. Behind the scenes, the town-planning advisor had signed over 900 urban-planning agreements and granted over 10,000 licenses in 15 years.²⁷¹ Even if such corrupt practices were far from an isolated case, it is not surprising that the revelation arose in one of the few wealthy regions where neither of the two major national parties had managed to maintain a clear advantage.

Environmental destruction through the commodification of nominally buildable land had become synonymous with the progressive deterioration of the democratic system.²⁷² As economist Federico Aguilera Klink has remarked, the main environmental concern even today is authoritarian decision-making: the existence of a solution before the problem.²⁷³ At the core of the housing bubble was the belief in urbanisation as a solution to a housing problem that politicians had no desire to address at its root. Instead, the easily malleable boundaries of master plans perfectly accommodated the generation of surplus value and profit margins under the guise of solving housing deficits (Figs. 39-41).

The construction of housing in the public interest was a fiction: new housing stocks were mostly market-rate, while the amount of social housing actually decreased.²⁷⁴ But the national urgency of housing 'scarcity' still mobilised any decision allegedly 'for the public interest'.²⁷⁵ In this sense, urban planning agreements between real estate developers, construction companies, and municipal councils led to dubious legal operations based on the ambiguity of the common good.²⁷⁶ Far from benefiting the general interest of the municipality, these agreements modified planning laws and master plans by introducing 'exceptions' that would allow land to be reclassified for the purpose of increasing the housing stock, despite serving real estate corporate interests.

²⁷⁰ Rafael Aníbal, 'Marbella - Gil Babá y los 40 Cabrones: Un Cuento de Malayos, Cupletistas y Axiomas,' in *Aquellos Maravillosos Años: Escándalos de Corrupción y Despilfarro en España Durante la Última Década*, ed. Rafael Aníbal (Madrid: Continta Me Tienes, 2012), 29.

²⁷¹ *Ibid.*, 29-30.

²⁷² Federico Aguilera Klink in discussion with the author, 2 April 2012.

²⁷³ Federico Aguilera Klink and Juan Sánchez García, 'El Deterioro Ambiental en Canarias como Resultado del Deterioro de la Calidad de la Democracia,' in *Calidad de la Democracia y Protección Ambiental en Canarias*, ed. Federico Aguilera Klink (Tegui: Fundación César Manrique, 2006), 150.

²⁷⁴ José Luis Díez Ripollés et al, *Prácticas Ilícitas en la Actividad Urbanística: Un Estudio de la Costa del Sol* (Valencia: Tirant Lo Blanch, 2004), 232.

²⁷⁵ Erik Swyngedouw, *Liquid Power: Contested Hydro-Modernities in Twentieth-Century Spain* (Cambridge and London: MIT Press, 2015), 133.

²⁷⁶ Díez Ripollés, op. cit., 229.



39-40: Interrupted developments in the periphery of Madrid: Seseña (top) and Rivas Vaciamadrid (bottom). Photos by the author, 2011.



41: Interrupted developments in the periphery of Madrid: Arroyo del Fresno, Cañaveral, Rivas Vaciamadrid, and Valdebebas. Google Earth, 3 January 2011.

This system of governance has been referred to as ‘urbanisation by dispossession’ or the ‘construction company dictatorship’: if the state used to control construction companies, it is developers who now are controlling the state.²⁷⁷ In most cases, contractors did not even conform to their planning license a priori, but instead a posteriori – when the illegality of the development had been administratively legitimised. In fact, this loophole means that most of these actions do not qualify as criminal activity per se.²⁷⁸ Such practices, which could be classified under the umbrella of political corruption, have also been described as *special opportunity crimes*.²⁷⁹ They are ‘special’ in the way that they avoid the norm through ambiguity: they operate outside the law, while belonging to the space of the law.

The dissolution of democratic politics in Marbella was the moment when the housing crisis began in Spain, which also exposed the financialisation of the littoral and the government through ambiguity. But the housing problem and the abusive real estate speculation can be tracked further back than the 1998 Land Law or the 1988 Coastal Law. As part of the so-called democratic *transaction* (not transition) of the country, the shift from Franco’s dictatorship to parliamentary democracy aimed to decentralise power from Madrid. Municipalities were given the autonomy to classify land without the central government. However, this well-intended redistribution of political agency lacked independent mechanisms of oversight and led to the aforementioned high rates of corruption. The environment became entangled in the degradation of democratic processes.

This in turn was aggravated by regulation on the financing of political parties – the mayor of a small coastal town can strike a deal with a local developer to build a public swimming pool in exchange for reclassifying rural land, reducing the municipality’s dependence on funds from Madrid.²⁸⁰ Furthermore, there is a profound mismatch in the territorial organisation of Spain, as it still maintains a system of 52 provinces inherited from the nineteenth century. The fact that they are fairly equal in geographical size is less politically relevant than their current imbalances in population density: coastal provinces are far more populated than inland regions.²⁸¹ Indeed, coastal municipalities are the most indebted in the country and, together with Madrid, they are home to the largest quantity of urban planning-related crimes. The bust exposed the need to rethink not only the role of boundaries in architecture, but also in the territorial organisation of the country.

‘Naturalising’ the environment was also the way municipalities were able to destroy it. They consistently deployed loopholes and exceptions as a planning tool. Urban planning authorities could relocate space outside the rule of urbanism (*fuera de ordenación*) to discount anthropogenic green areas, and then use the figure of express disaffection (*desafectación*

²⁷⁷ José Manuel Naredo and Federico Aguilera Klink, *Economía, Poder y Megaproyectos*, (Tegui: Fundación César Manrique, 2009) 15-47; Aguilera Klink, *Calidad de la Democracia y Protección Ambiental en Canarias* (Tegui: Fundación César Manrique, 2006), 75.

²⁷⁸ Díez Ripollés, op. cit., 229-30.

²⁷⁹ Ibid, 239.

²⁸⁰ Political scientist Fernando Jiménez Sánchez in discussion with the author, 23 July 2012.

²⁸¹ Ibid.

expresa) to explicitly remove land from the coast.²⁸² The environmental and democratic crisis is not due to a lack of laws, as there are already plenty; instead, it is a problem of how Spanish law is interpreted and executed by biased judges.²⁸³

In February 2009, the level of ambiguity in the logic of expropriation and demolition reached such a level of political abuse that European Commissioner Margrete Auken put a report forward in Brussels 'On the impact of extensive urbanisation in Spain, on individual rights of European citizens, on the environment, and on the application of EU law'.²⁸⁴ Here, Auken recognised the arbitrary application of the law:

The Committee understands and supports the Spanish authorities in their attempts to preserve and where possible restore the coastal environment. What it fails to understand is why the 1988 Coastal Law has been resurrected at this stage, in this time [2008-9], when it has been in practical abeyance for thirty years when so much devastation took place. Why is its application such a shambles and so arbitrary when traditional coastal housing is being demolished and newly developed modern apartments being tolerated?²⁸⁵

Auken's remarks can be understood by looking at how the urbanisation and protection of the coast formed a power game, whereby a privileged elite had the capacity of manipulation; in other words, there was an asymmetry of power.²⁸⁶ In the case of the demolition of the Corralejo Hotel on the coast of Fuerteventura, the owner maintained the building on the shore by means of exchanging a concession deed: he traded his right to stay for making the island of Lobos – off the coast of Fuerteventura, and land that he also owned – publicly accessible as a nature park.²⁸⁷ In other cases like in Torrevieja Salt Works, the high value of coastal land led to an abnormal increase in cost-intensive soil samples that refined the resolution of the extent of sea salt.²⁸⁸ However, fishermen or small property owners, who live 'too close' to the sea to be saved from eviction and who lack assets to negotiate with or to invest in contesting dubious reports, are at a clear disadvantage under the same conditions of the Coastal Law. One of the only tactics to resist demolitions, then, is to approve a supra-municipal plan to environmentally protect larger pieces of the landscape.²⁸⁹

Conducting external scientific reports to justify coastal demolitions is an intentional practice that is meant to offset political responsibility. It puts the entire architecture of the littoral in the hands of weak, 'neutral' bureaucrats.²⁹⁰ The bias of laboratories providing geological services in these assessment reports is so contested that a notary is now required during the extraction of a

²⁸² Law Professor Andrés González Sanfiel in discussion with the author, 04 April 2012.

²⁸³ Jurist Diego Vera Jurado in discussion with the author, 22 August 2012.

²⁸⁴ Margrete Auken, 'Report on the Impact of Extensive Urbanisation in Spain on Individual Rights of European Citizens, on the Environment and on the Application of EU Law, Based Upon Petitions Received (2008/2248(INI),' EU Parliament, 20 February 2009, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A6-2009-0082+0+DOC+PDF+V0//EN>

²⁸⁵ *Ibid.*, 17.

²⁸⁶ José Manuel de Cózar Escalante and Juan Sánchez García, 'Planeamiento urbanístico y procesos sociales deliberativos: La playa de Las Teresitas en Santa Cruz de Tenerife,' in *Toma de Decisiones Colectivas y Política del Suelo*, ed. Juan Sánchez García (Teguiise: Fundación César Manrique, 2004), 50.

²⁸⁷ Law Professor Andrés González Sanfiel in discussion with the author, 04 April 2012.

²⁸⁸ Fernández Escalante and García Rodríguez, *op. cit.*, 27.

²⁸⁹ Jurist Diego Vera Jurado in discussion with the author, 22 August 2012.

²⁹⁰ Law Prof Andrés González Sanfiel in discussion with the author, 04 April 2012.

geological sample from the beach.²⁹¹ The shoreline changes in such a short time that the draft outline of some studies is modified even before the completion of its analysis. This high-speed dynamic of the coast, even at the level of juridical contestation, is in stark contrast with the absolute and fixed tracing of the shoreline. The dependency of coastal management on capital investments or European subsidies has produced a machine of complicit data and para-empiricism leading to a class of neo-caciques governing the ecology of the country at the same time that 'democracy' is used to legitimise environmental crimes 'for the general interest' (Figs. 42-43).²⁹²

The Director of the Andalusian Institute for Earth System Research, Miguel Ángel Losada, envisions the coast as a much more complex mechanism than the single lines defended by scientific reports. Indeed, his team has been researching the possibility of applying financial risk to the demarcation of the littoral in the same way that insurance companies apply flood probability or fuzzy logic.²⁹³ Under this programme, the shoreline would be split into a series of isolines that determine 0 to 100% chance of that area belonging to a flood zone. As discussed in next chapter, this approach embeds a logic of financialisation of the environment for decision makers and risks quantifying nature for insurance purposes in lieu of ecological awareness.

After decades with an inoperative coastal law, the Spanish Government introduced several amendments in 2013. As stated in the preamble, the main reason for the failure of the 1988 law was the 'perpetual litigation' it led to.²⁹⁴ The failure was largely blamed on a lack of stewardship to help the environment contribute to the general economic interest. The law does not fail to regulate the coast, but it does fail to understand the ecological and spatial complexities of the littoral. The 2013 amendments assume that the environment needs a human custodian, and take for granted that any urban planning will start with ecological destruction. Further, they imply that the environment has to service the general economic development of the country – which is particularly problematic both in terms of the coast's ambiguous definition in general and the notion that the economy should dictate the shape of ecology. The 2013 amendments approved by the conservative Partido Popular openly prioritised property owners over the environment. Within the new framework, the shoreline is no longer demarcated by peer-reviewed *evidence*, but by the *necessary* technical criteria set out by expert consultants. For instance, coastal dunes moved to depend on multiple subjectivities around necessity: they are part of the beach until the *necessary* limit that guarantees the stabilization of the beach and the protection of the coast. These nuances expose how the factish, far from a literal interpretation of the law, is increasingly able to manufacture a financial littoral according to 'scientific knowledge' and a profit-driven logic. Furthermore, the 2013 amendments paved the way to contest previous demarcations and exposed the entire shoreline to be revised if needed.²⁹⁵

²⁹¹ Fernández Escalante and García Rodríguez, op. cit., 26.

²⁹² Federico Aguilera Klink, *La Nueva Economía del Agua* (Madrid: Catarata, 2008), 12.

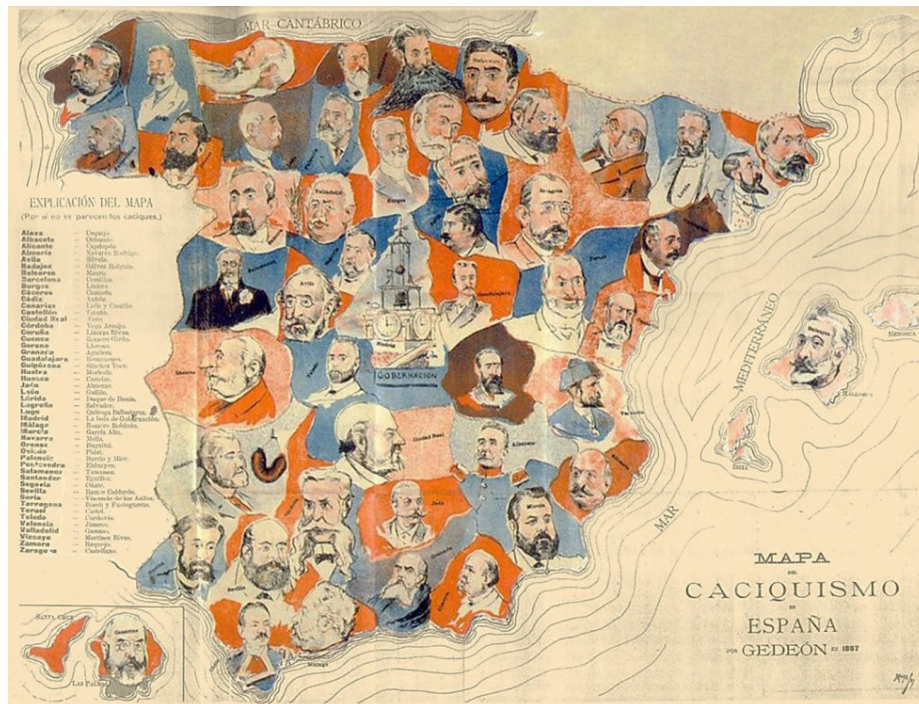
²⁹³ Miguel Ángel Losada in discussion with the author, 23 August 2012.

²⁹⁴ Spain, 'Ley Orgánica 2/2013, de 29 de Mayo, de Protección y Uso Sostenible del Litoral y de Modificación de la Ley 22/1988, de 28 de Julio, de Costas,' *Boletín Oficial del Estado*, 30 May 2013, núm. 129, 40691-40736. Preamble.

²⁹⁵ Íñigo Lazkano Brotóns and Agustín García Ureta, 'La Subordinación de la Conservación del Litoral a los Intereses Económicos en la Reforma de la Ley de Costas,' *IEZ* 12 (2014): 61.

42: Map of regional caciques in Spain, Joaquín Moya, Almanaque Gedeón, 1898.

43: 'Corruptódromo': urban planning related corruption cases in Spain, indicating parties and location of politicians with charges, 2012.



This reveals the double agenda of a neoliberal understanding of space: the littoral is put to work in a way to efficiently yield economic profit and sustainability is often nothing more than an attempt to greenwash (and thus justify) any development. Accordingly, the title of the amendments shifted from simply referring to the coasts as an entity (*Ley 22/1988, de 28 de Julio, de Costas*) to a title that focuses on the idea of protection of usership (*Ley 2/2013, de 29 de mayo, de protección y uso sostenible del litoral*). While the 1988 law expressed some will to understand the coast as a legal entity with rights and obligations, the 2013 version explicitly commodifies the littoral by subordinating ecology to the extraction of profit, while simultaneously being sustainable.

According to this vision, the coast cannot remain idle or unproductive for the sake of the environment; it has to be put to work in order to yield 'sustainable' profits. Creative tactics have followed, and the 2013 amendments, for example, opened the door to *artificially* flooding coastal land in order to exempt it from the *natural* coast.²⁹⁶ The need to protect the shores for the general public is an ambiguous instrument for complying with sustainability concerns from the perspective of 'corporate social responsibility'. This is even clearer in another change: a new category of 'unnecessary terrain'.²⁹⁷ According to this new policy, several coastal towns were explicitly excluded from the regulated littoral. They did not need to be protected or unprotected, as they were already beyond the possibility of environmental recovery. This condition of 'arriving too late' allows for sudden destruction if they are declared 'unnecessary'.²⁹⁸ In all these cases, the construction of ambiguous definitions is at the core of the class struggle of the soil.

1.4 The Failure of the Section: Salinity Reports as Factories of Truth

The seashore legally extends to the point reached by the highest tide in history.²⁹⁹ In order to prove the highest watermark, aerial photographs and satellite imagery have been used to draft the shoreline. However, the pressure of real estate development is such that consultants can be challenged to bias technical evidence. Photographs from above, whatever their resolution, can only capture a precise moment. They do not prove a timeline of traces of sea salt in surrounding areas. Therefore, litigation around the precise demarcation of the shore and the historical presence of the sea has led scientific researchers to work at the scale of salinity to arbitrate urban planning conflicts. Grains of sea salt have been brought to court to prove or dismantle the millenary geology of the beach and its material history. This section analyses the political appropriation of salinity to legitimise development in Las Teresitas Beach in Tenerife and Cabanes wetlands in Castellón, two cases on the Spanish coast.

²⁹⁶ See 'Amendments,' Congreso de los Diputados, 29 January 2013, http://www.congreso.es/public_oficiales/L10/CONG/BOCG/A/BOCG-10-A-29-2.PDF

²⁹⁷ Spain, 'Ley Orgánica 2/2013, de 29 de Mayo, de Protección y Uso Sostenible del Litoral y de Modificación de la Ley 22/1988, de 28 de Julio, de Costas,' *Boletín Oficial del Estado*, 30 May 2013, núm. 129, 40691-40736.

²⁹⁸ Like in the case of the 2010 construction process of a new concert hall in A Marisma, Redondela, where the site was reclassified as anthropised, hence they could be taken out of the protected coastal commons.

²⁹⁹ Spain, 'Ley Orgánica 22/1988, de 28 de julio, de Costas'. *Boletín Oficial del Estado*, 29 de julio 1988, núm. 181, 23386-23401.

In the case of Las Teresitas Beach, the soil samples included in the report – with their debatable sea salt and fossil sea creatures – aimed to discern the binary ecology-real estate: whether the sample site belonged to buildable land or the coastal commons. As part of the legal process to demarcate the Maritime-Terrestrial Public Domain in Las Teresitas, the DL-210-TF report was produced by the public company Tragsatec in 2008. Tragsatec has grown to become the primary producer in Spain of ‘independent’ reports on the geology of the beach for urbanization-related conflicts. Despite their popularity, Tragsatec’s work has been questioned in the Supreme Court; their geological justification regarding a section of beach in Valencia was annulled in 2010 for lack of scientific rigour and for having been fabricated ad hoc.³⁰⁰

Tragsatec’s production of ‘cli-fi’ evidence is intertwined in political and economic power and constitutes an assemblage of natural capital and neocolonial interests. The company is part of Tragsa, a global environmental and engineering consultancy that has absorbed smaller firms with revealing names – for example, Paraguay’s *Colonización y Transformación Agraria S.A.* (Colonisation and Agrarian Transformation Ltd). More recently, their production of questionable data became even more apparent in January 2017, when the former President of the Spanish Securities Market Commission (CNMV) and former conservative Minister of the Environment Elvira Rodríguez was appointed their new president.³⁰¹ She had also previously been Secretary of the State Budget 1996 onwards (during the real estate boom), working for the Minister of the Economy and former IMF Managing Director Rodrigo Rato, now sentenced to four years imprisonment for accounting irregularities.

Their corporate ambition is to ‘service to the public’ and ‘provide clients with solutions adapted to their needs’.³⁰² Nothing is further from reality: Tragsatec’s ‘objective’ technical studies precisely *adapt* to the needs of certain economic interests. In the case of Las Teresitas Beach, their 52-page report is an exemplary case of environmental construction in ambiguity (Figs. 44-47). The report currently sits in a governmental archive in Madrid not accessible to the public. However, a compulsory second copy in the regional Coastal Commission in Tenerife makes its analysis possible. The shore demarcation is defended through photography, topography, salinity analyses, and marine archaeology, as follows:

a. Aerial photography: A series of images from 1973, 1981, 1989, and 2002 are visually compared to analyse the forces modifying the beach over time. The four photographs conclude that nearby urbanisation indicates a clear anthropogenic influence, making the beach no longer ‘natural’.

b. Topography: Slope variations in the coastal contours were studied by cutting the cliff of the beach into four cross-sections to prove their angle at 60°. The threshold of 60° nonetheless has to be calculated as an average for a whole beach. The analysis in Las Teresitas concluded that the average slope was between 36,02 and 44,82°, the report therefore argued that the site was clearly not a coastal ‘cliff’ by definition, but a medium-slope on average.

³⁰⁰ Tribunal Supremo, Sala de lo Contencioso, ‘3817/2010 Appeal,’ Madrid, 9 October 2013.

³⁰¹ EFE Madrid, ‘Expresidenta de la CNMV, Elvira Rodríguez, Será Nueva Presidenta de Tragsa,’ *El Diario*, 27 January 2017, http://www.eldiario.es/economia/Expresidenta-CNMV-Elvira-Rodriguez-Tragsa_0_606139756.html

³⁰² Grupo Tragsa, accessed 7 June 2017, <http://www.tragsa.es/es/Paginas/default.aspx>

c. Salinity: Through the study of beach sediments, the report reminds its reader that the beach is manmade: it is in fact the first engineered beach in Europe, dating back from the Francoist late 1960s. Its golden sands were shipped from the Moroccan Sahara Desert, as the original black volcanic sands were unappealing to Northern European snowbirds seeking the ‘tropical’ Southern latitudes during cold winters. Yet the golden beach is now so ingrained in even the local imagination that residents have fought for the beach to keep its *natural* condition and not be built up.³⁰³ The samples consisted of three deep test pits (C1, C2, C3) and two samples from the surface (M1, M2). The analysis of the five sediment samples concluded that they were all ‘continental soil’. In order to determine the salinity of the samples, and whether they had ever been part of the sea (perhaps at the highest tide in history), the standard method consists of circulating electricity through the sand. Their electric conductivity is measured in Siemens per unit of length: the more saline, the more conductive. As stated in the report, despite the fact that there are various *arbitrary* salinity thresholds, Tragsatec chose to use the US salinity laboratory as a reference in this case.³⁰⁴ It determines 4 deciSiemens/metre as a threshold for salinity and electrical conductivity. Given that the samples from Tenerife were under 1 dS/m, it concluded that the site was not saline, but ‘normal’ soil.

d. Marine Archaeology: Despite the fact that the Saharan sand did not have any particles of sea salt, the analysis of sea fossil sediments revealed that there were nonetheless sea fossils present in soil samples supposedly belonging to ‘continental’, ‘normal’ soil. However, the sea fossils were not understood to be because of any seawater impact, but because of the wind. The report acknowledged that at some point in history the shells had been blown to the shore rather than washed away, splitting the essence of tidal movements between the agency of wind and water. It also clarified that other possibilities include sea level rise 11,000 years ago (during the interglacial period), when hotter temperatures increased the sea level 2 or 3 m over the current level. But at the same time, it discarded this option as ‘not very probable’. It even argued that because of the artificial breakwater that protects the beach from winter waves, the beach is ‘dead’ in ecological terms: no influence by tides, waves, or saltwater could be considered.

The report concludes that even if there was indeed material evidence of a Quaternary beach, the fossil sediments do not necessarily indicate the presence of the sea.³⁰⁵ As the beach is no longer affected by tidal influence, sea fossil sediments appeared on the surface because of human action and not littoral dynamics. Their presence is not *natural*, as they have not come to the surface due to tidal movements; the samples ended up in that spot due to digging for the construction of the adjacent road. The existence of sea salt was immediately discredited by the possibility of human-initiated movement of the terrain on an *artificial* beach. With this series of assumptions founded on almost satirical interpretations, Tragsatec’s scientific report constructed their version of the shoreline based on factishes – with the same evidence, they could have just as easily argued the exact opposite.

³⁰³ José Manuel de Cózar Escalante and Juan Sánchez García, ‘Planeamiento urbanístico y procesos sociales deliberativos: La playa de Las Teresitas en Santa Cruz de Tenerife,’ in *Toma de Decisiones Colectivas y Política del Suelo*, ed. Juan Sánchez García (Teguise: Fundación César Manrique, 2004), 33-45.

³⁰⁴ TRAGSATEC, ‘Estudio Técnico para la Justificación del DPM-T en la Playa de las Teresitas DL-210-TF,’ Santa Cruz de Tenerife, 2009, 48.

³⁰⁵ Ibid, conclusion.

The second case similarly looks at the financialisation of Cabanes wetlands in Spain, which intensified the debate on the demarcation of the shoreline. Wetlands, the ambiguous landscape par excellence, had to be demarcated to fit in either one category or the other. Were the wetlands part of land, urbanisation and extraction of minerals would be legitimate; if they are part of the common seas, they must remain untouched (Fig. 48). Now, coastal wetlands epitomise the condition whereby fresh water is constantly *maritimised*.³⁰⁶ In the legal battle in Cabanes, scientific reports presented by both sides argued opposite things. The Practical Salinity Scale Index (PSS-78) determines the percentage of salt that defines brine, saline, brackish, or fresh waters. As the salinity of the water was three parts per thousand (the international threshold between brackish and saline waters), one side argued that the vegetation and waters were characteristic of a fresh water landscape, and the other report argued exactly the opposite, both based on scientific evidence.³⁰⁷

Sitting at the threshold of 3 ppt of salt, Cabanes could either be considered part of the land or not. One report contended that the salinity levels were slightly above the threshold for saline water, and as a result, that the marshes should be considered part of the sea and hence environmentally protected. The further environmental debate on whether the fauna and flora corresponded to fresh or brackish water also complicated the process; despite the fact that there were indications of brackish fauna and flora, it was argued that landscapes can easily revert to fresh water ecologies, and should not be taken in any case as a proof of a sea-identity.³⁰⁸ Confronted with contradictory reports and a dysfunctional standard of measurement for a dynamic ecosystem, the judge had to choose according to his own views. He eventually decided to exclude most of the wetlands from the shore, as this would effectively allow for major economic benefits for the region, in terms of development and employment.

Similar to the conflict of the soil salinity in Tenerife, the case of the coastal wetlands in Cabanes is a clear example of how the interpretation of water salinity acts as a juridical threshold that makes the shoreline a dispositive of ambiguity.³⁰⁹ Urbanisation was pressing for an alteration in the condition of the landscape from other fronts as well: planning permission was granted to build within the wetlands in 2003 before the landscape was declared a nature reserve,³¹⁰ the number of 'accidental' summer fires increased, which eased the change from protected landscape into degraded land; and the wetland flow was altered to pump water for the nearby mega-project Marina D'Or, right outside Oropesa, the coastal town where Spanish conservative President José María Aznar used to spend his summer holidays.³¹¹

³⁰⁶ Ministerio de Medio Ambiente, 'Instrucciones Técnicas para la Realización de Deslinde del DPMT,' Madrid, 2006, 47.

³⁰⁷ Yeray Clares, 'Un Nuevo Informe Demuestra que las Aguas del Prat No Son Saladas,' *El Periódico Mediterráneo*, 28 April 2010, http://www.elperiodicomediterraneo.com/noticias/comarcas/nuevo-informe-demuestra-aguas-prat-no-son-saladas_555846.html

³⁰⁸ 'Asociación Europea de Perjudicados por la Ley de Costas,' accessed 24 May 2017, http://perjudicadosporlaleydecostas.blogspot.co.uk/2010_04_01_archive.html

³⁰⁹ Ministerio de Medio Ambiente, 'Instrucciones Técnicas para la Realización de Deslinde del DPMT,' Madrid, 2006, 48.

³¹⁰ Fundación Alternativas, 'Mapa de Presuntas Irregularidades y Actos de Corrupción Urbanística 2000-2007,' Madrid, 2008, accessed 2 July 2017, http://www.fundacionalternativas.org/public/storage/publicaciones_archivos/xmlimport-GUjYNg.pdf

³¹¹ 'Destrucción a Toda Costa: Situación del Litoral Español y sus Espacios Protegidos,' Greenpeace, July 2009, <http://www.greenpeace.org/espana/Global/espana/report/costas/informe-completo-destrucci-n.pdf>

These patterns confirm an attempt to urbanise the hybrid coastal landscape at any cost. Due to the reduction of water influx into the wetlands and the over-extraction from the underground aquifer, salinity levels of water have been changing. Effectively, these changes have led to subsidence of the wetlands and potentially sea level rise, as was detected in 2014 when the archaeological remains of a Neolithic freshwater well were spotted underwater off the coastal limit of the wetlands.³¹² This even further challenged the environmental logic of one-dimensional, static lines, as the legal approach failed to consider larger global phenomena that closely affect the littoral and tidal zones in four dimensions: length, width, depth and change over time. The judge's line cutting across the coastal wetlands in Cabanes failed to represent the threshold between land and sea. He flattened extremely complex forces into a single, horizontal, fixed dimension.

Differences in density between seawater and freshwater in estuaries provoke an additional vertical stratification that makes the latter float to the surface above saltier waters, which are heavier and fall to the bottom. Based on this variability, a sentence in Galicia 2004 refused the water salinity report presented as evidence, given that it neither considered vertical gradients nor tidal shifts throughout the day or the year.³¹³ These spatial frictions can be read through Eyal Weizman's notion of plastic boundaries and the politics of verticality. In his analysis of the Israeli-Palestinian territorial conflict, Weizman remarks on how an Israeli viaduct over Palestinian territory is a case of the multidimensional stratification of sovereignty. When the bridge's columns rest on Palestinian ground, the 'border' runs, presumably, through the thermodynamic joint between the column and the beams.³¹⁴ Analogously, salinity gradients overlap, fluctuate, and dissolve in four dimensions. The threshold separating seawater and freshwater, like the joint between two overlapping nations, is subject to cycles of expansion and compression.

This understanding of the variable depth of borders and shorelines is indebted to geological and tectonic representations of space. Alexander von Humboldt's *Cross-Section of the Earth's Crust* (1841), motivated by the 1755 Lisbon earthquake, includes a visualisation of a geological section of Europe that shows underground matter to be the source of the perils of volcanic eruptions. The original aim of the geological cross-section was to understand material discontinuities in the terrain in order to predict accidents and secure populations on the surface. Traditional cross-sections of the coast have surprisingly focused nonetheless on the bureaucratic forces that have invented shoreline offsets. It has legitimised a procedure whereby tidal dynamics can be flattened into lines on a floor plan, as if simply visible from above.

³¹² Pilar Carmona González, José Miguel Ruiz Pérez and Miriam Ibáñez Solaz, 'Erosión Costera y Cambio Ambiental en el Humedal de Cabanes-Torreblanca (Castelló). Datos Para una Gestión Sostenible,' *Boletín de la Asociación de Geógrafos Españoles* 66 (2014), 165.

³¹³ 'La diferencia de densidades entre el agua salada y dulce da lugar a una estratificación en la vertical siendo la superficie la más dulce y la profunda la más salada, no resultando por tanto aclaratorios ni concluyentes los análisis de muestras de agua realizadas en el estudio encargado por la Consellería de Agricultura por cuanto no se indica en su analítica la profundidad a la que se tomaron dichas muestras.' See Sentence A.N. 22-09-04, 1032/2000 (DL-121/1-Coruña).

³¹⁴ Eyal Weizman, *Hollow Land* (London: Verso, 2012), 180.

There is a conflict in the drawing of the littoral as a one-dimensional line ignoring dynamic processes and multi scalar gradients.³¹⁵ Furthermore, climate changes will increase and accelerate such transformations, especially in terms of thermodynamic and salinity variation, neither of which are considered in current graphic representations (Figs. 49-51). Current visualisations of the shoreline are therefore already obsolete. The diagrammatic sections of the littoral released by the Spanish Ministry of the Environment are not even true to the text in the Coastal Law in their depiction of the highest tide in history and the way salt levels fluctuate. Government-drawn sections of the littoral are rather an average abstraction of what a shoreline is supposed to look like administratively in order to be easily measured. They cut through stereotypical coastal landscapes that represent any condition and none at the same time. The *typical* or *average* sections never slice through underground streams, swamps, irrigated fields with leaking drainage pipes, or nomadic dunes. Otherwise they would need to consider more complicated forms of representation for these ambiguous landscapes, which despite being included as part of the coast according to law, would not be possible to visualise in the same way. Contrary to the graphic legend of their schemes, water is not blue and land is not green; the littoral is a financial zone that is murky, muddy, and rather brown.

³¹⁵ Carlos Augusto França Schettini et al, 'Observation of an Estuarine Turbidity in the Highly Impacted Capibaribe Estuary, Brazil,' *Brazilian Journal of Oceanography* 64 (2016), accessed 25 May 2017, DOI:10.1590/S1679-87592016115006402; 'Salinity,' Australian Online Coastal Information, accessed 28 May 2017, <http://www.ozcoasts.gov.au/indicators/salinity.jsp>



44: Las Teresitas Beach, Tenerife, Spain, with the original black volcanic sands before it became the first engineered beach in Europe with golden sands from the Sahara. Photo ca. 1925-1930.

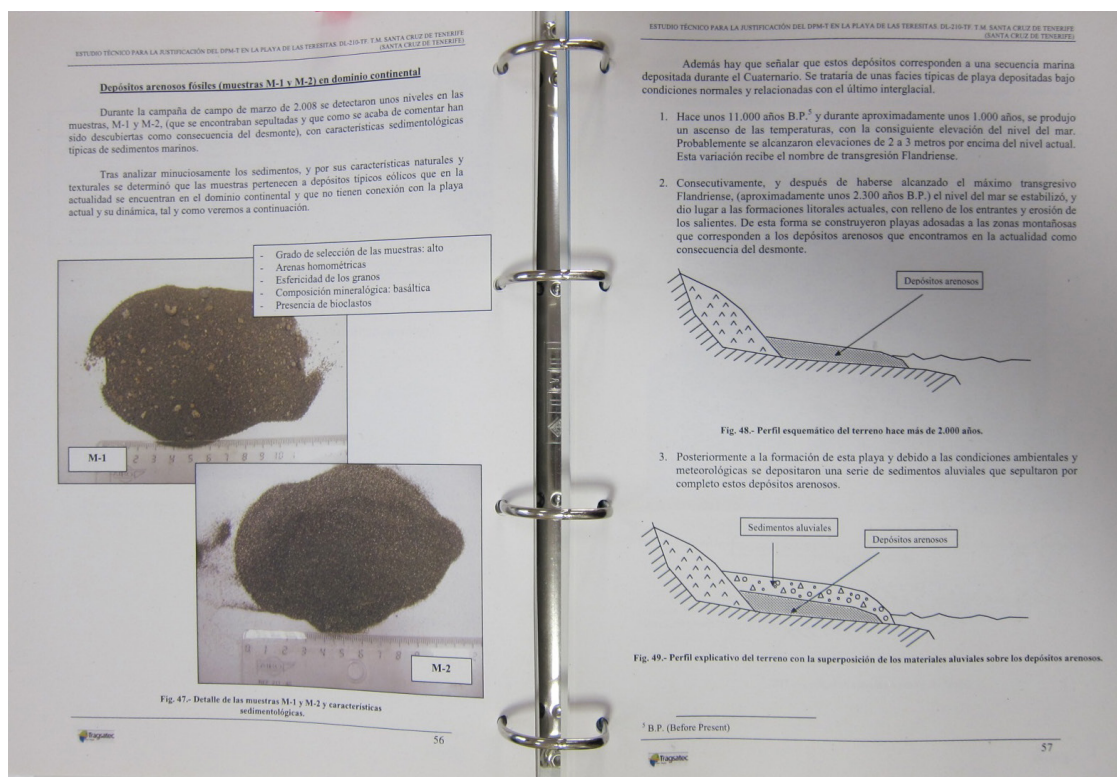
45: Las Teresitas Beach, Tenerife, Spain. Photo by the author, April 2012.



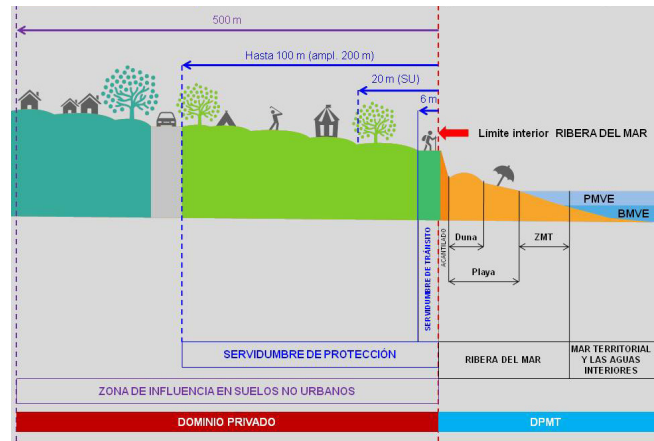
46: Salinity report DL-210-TF for the demarcation of the shoreline. Las Teresitas Beach, Tenerife, Spain, Tragsatec 2009.

47: Salinity report DL-210-TF for the demarcation of the shoreline. Las Teresitas Beach, Tenerife, Spain, Tragsatec 2009.

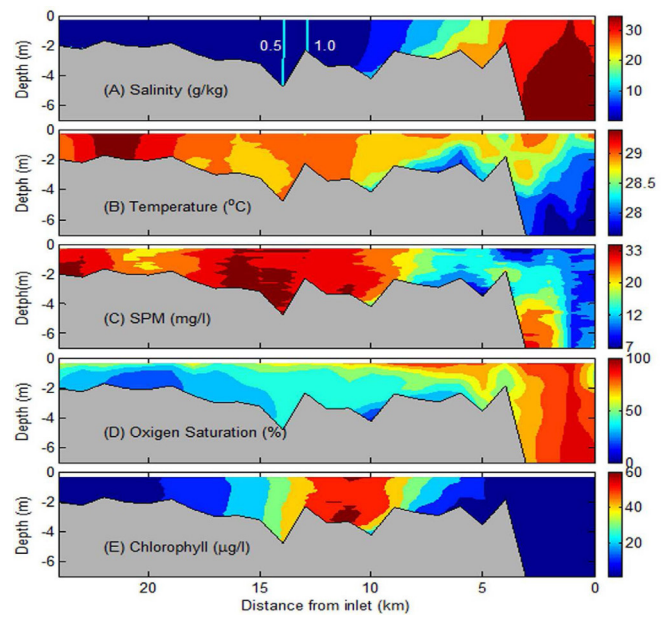
48: Cabanes wetlands, Castellón, Spain. June 2012.



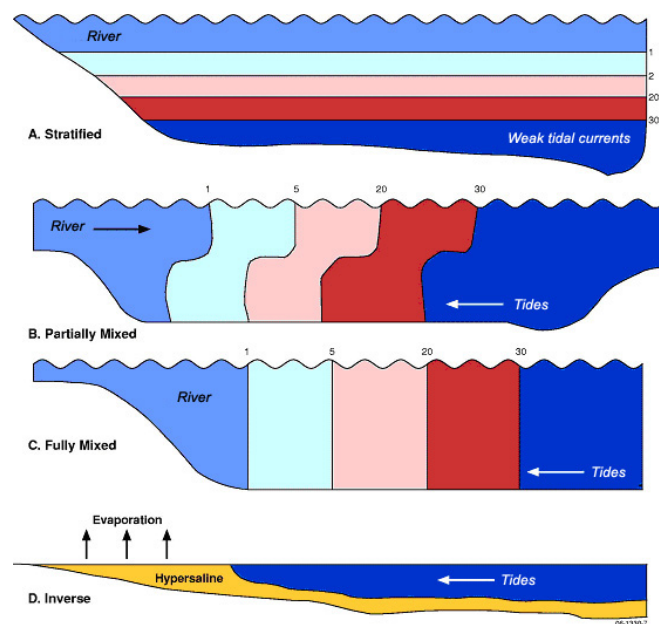
49: Typical section of the DPMT on the Spanish shores, differentiating the commons from private building land and the different easements of protection, Spanish 1988 Coastal Law. MAPAMA, 2017.



50: Field distributions of (a) salinity (g/kg), (b) temperature ($^{\circ}\text{C}$), (c) suspended particulate matter (SPM, mg/l), (d) dissolved oxygen saturation (%), and (e) chlorophyll ($\mu\text{g/l}$) along the Capibaribe Estuary on October 11th, 2013. Carlos Augusto França Schettini et al. (2016)



51: Salinity regimes: There are four main characteristic types of salinity distributions in coastal waterways: stratified; partially mixed; fully mixed and inverse. Ozcoasts, 2017.



PROJECT DOSSIER 1

This dossier compiles the practical component of Chapter 1 on the invention of the coast. As developed in previous pages, the emergence of the shore is entangled with the making of a space of circulation of capital, whereby the actual demarcation of the coastline as an inhabited strip has played a crucial role in the economy of the country. In order to understand how the demarcation of the shoreline is not just a simple line, the series of projects that follow made clear how the shoreline should rather be conceptualised as a four-dimensional set of power relations building up to the housing crisis. This required to use different methodologies to visualise those interconnected ecologies. It is worth remarking that it is hard to analytically separate in the methodology whether the practice-based research or the research-based practice started first. Both were developed in parallel and resulted from the impossibility of actually using maps to question wrong approaches to mapping (documents heavily influenced by a colonial tradition as explained in the Introduction of this thesis).

During the making of the applied aspects of the research, it became clear that the failure of maps in regulating democratic approaches towards housing needed a different approach beyond increasing accuracy and resolution of the map itself. Hence the five sections that configure this Project Dossier 1 start by unpacking how that failure of the plan materialised after the frustrated attempt of understanding the rationale behind the governmental demarcation processes of the coast. First the institutional practice that uses environmental protection to modify the buildable character of the coast is exposed (1A). Then the methodology moved on to devise systems to look at the construction of imaginaries through the role of static images and not just lines (1B). The third section expands the role of fiction and explores moving image to depict the construction of the shore (1C). The other two sections delve into more performative acts as alternative forms of mapping the littoral exercise of ambiguity. They look at the extraction of value from the soil in a conglomerate of image production regimes, urbanisation, agriculture and speculation forces making profit out of zoning ('edible geopolitical maps' in 1D & 1E). Looked at as a circle of causes that led to the housing crisis in the way territorial governance was exercised, they are all approximations to unveil the complex logic of speculation and question the role of maps and boundaries that are used to regulate housing conditions and circulation of capital along the coast.

A/ The Failure of the Plan: Exceptions and Mismatches in Governmental Lines

Following the logic of the shoreline as a four-dimensional gradient, other approaches are much more comprehensive and can shed light on how to rethink the shoreline from a more ecological perspective. In traditional understandings of the territory in Hawaii, the coast spans all the way from the source of the river to the coastal hills. Inhabitation on the inland slopes is perceived as inhabiting the shore, without any clear sense of property or environmental limits, but with a logic of responsible usership. In Scandinavia, new manmade structures built on the coast should not be visible from a sea vessel. The role of the human gaze must then be inverted: looking at the water from the land cannot protect the coast, but there is a need to displace our reasoning by looking at the shore from the water and incorporating ecological dynamics.

The practical component of this section analyses the boundary lines that demarcate the end of buildable land and the beginning of the coastal commons. Every twist of the shoreline explains not where tides or sea storms are active, or where recent alterations in seasons affect the line, but rather where municipal powers fail to make an ethically, socially and ecologically sound decision in the construction of the coast. These decisions are public and easily accessible online in the portal of the Spanish Ministry of Agriculture, Fisheries, Nutrition, and the Environment, the entity in charge of regulating the coast. The portal consists of a digital platform that combines satellite imagery that demarcates the shorelines that are officially or juridically agreed upon, and are updated. When this research began in October 2011, the government had only released the shoreline of four coastal provinces (Tarragona, Balearic Islands, Lugo, and Granada). As of May 2017, the 24 coastal provinces appear in the portal with their corresponding shorelines, and an additional category catalogues the sites where the shoreline is still under litigation or being processed. The green line signals the end of the sea; the pink line, the beginning of buildable land; and the yellow, a boundary still under legal contestation.

The interrupted sections of the Spanish shoreline reveal the logic of government through ambiguity and para-empiricism. More importantly, they reveal the contradictions in the demarcation process and the real-estate-oriented logic behind them. By consistently comparing a series of unusual line geometries along the coast, the glitch, mismatch, and exception identify the politics in place. The geometric inconsistencies, fragmented boundaries, sudden zigzags and other twists reveal a state of ambiguity. The mismatches expose the ecological misgovernance of the littoral space, as a space of both environmental and democratic crisis. They speak for themselves and reveal how environmental protection has been used for environmental destruction in service of the state and its associated real estate oligarchy. After the visual analysis of the line, the discontinuities can be summarised in the following taxonomies, which can be used as tools to detect unusual decisions and exceptional decision-making.

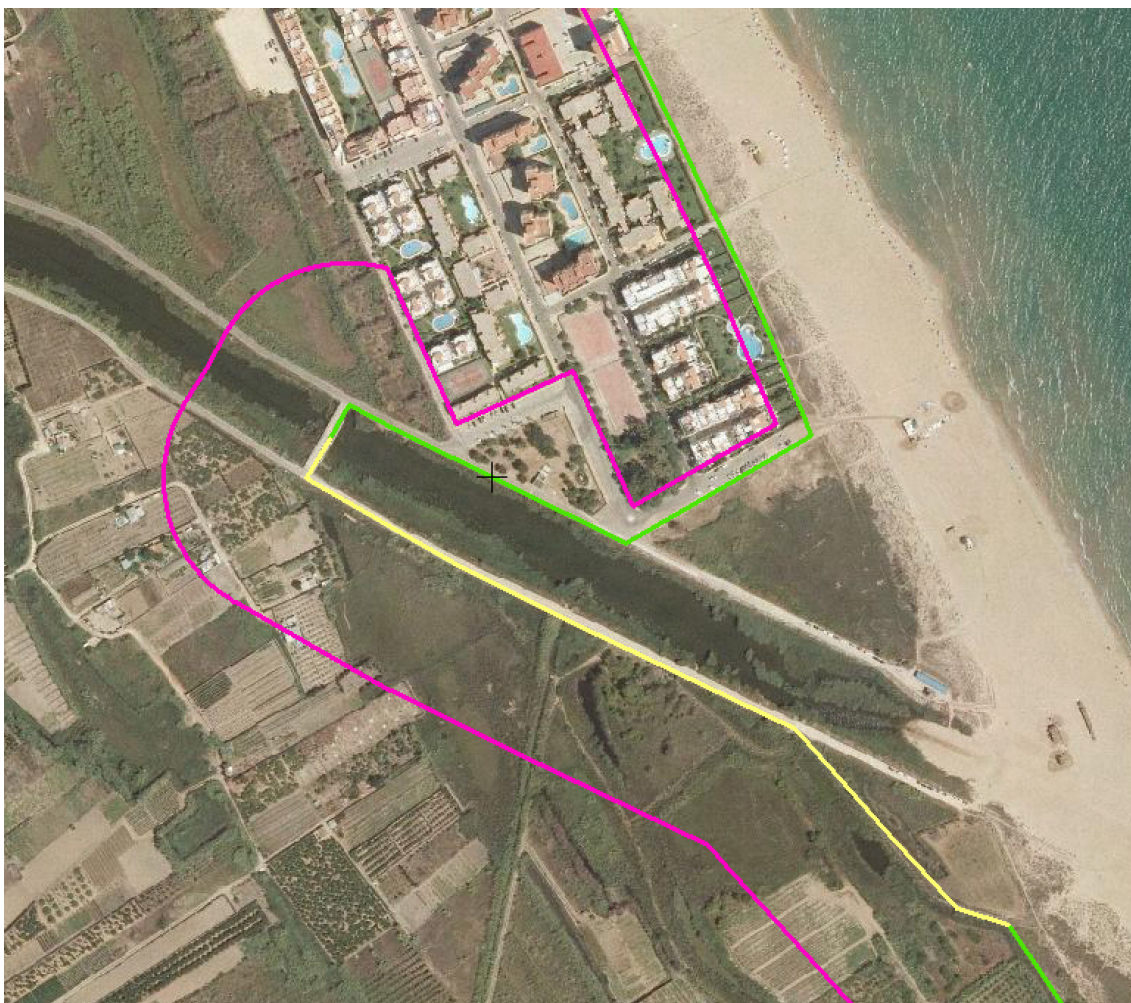
Source for the images in following pages: 'Visor del Dominio Público Marítimo Terrestre,' Gobierno de España, Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente, accessed 30 May 2017, <http://sig.mapama.es/dpmt/visor.html>



52: Cabanes wetlands, Castellón
 X: 260.834,11; Y: 4.451.620,62; Huso: 31

Landscape Divider:

In case of disagreement on whether to include the whole or none, a coastal wetland is arbitrarily cut in two by demarcating the end of the sea along a middle line. In this legal battle, contradictory scientific reports presented by both sides ended up in the judge eventually deciding to exclude most of the wetlands from the shore, as this would effectively allow for major economic benefits for the region. (See pages 74-75 of this thesis).

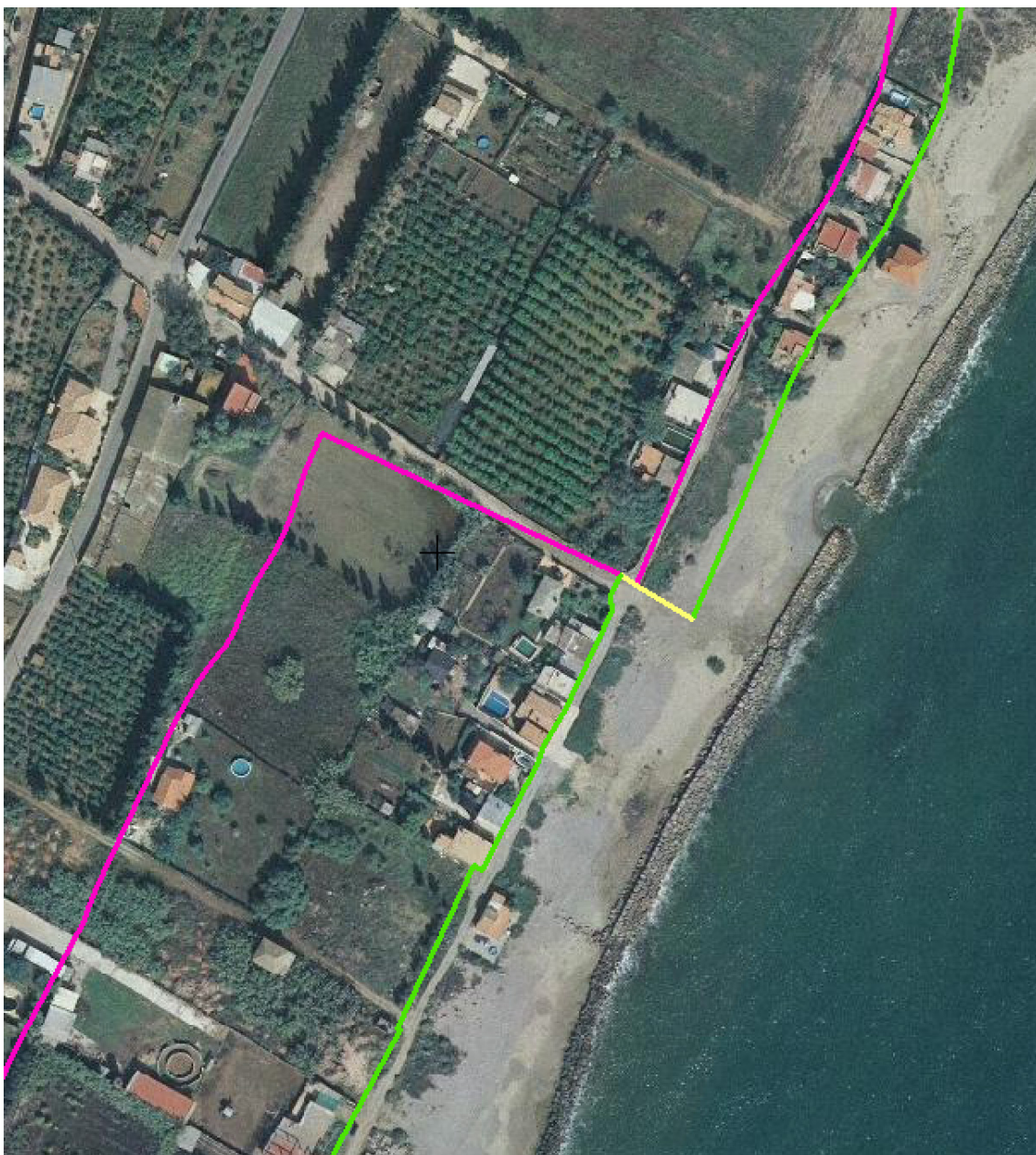


53: Río Vaca, Valencia.

X: 743.224,30; Y: 325.201,58; Huso: 30

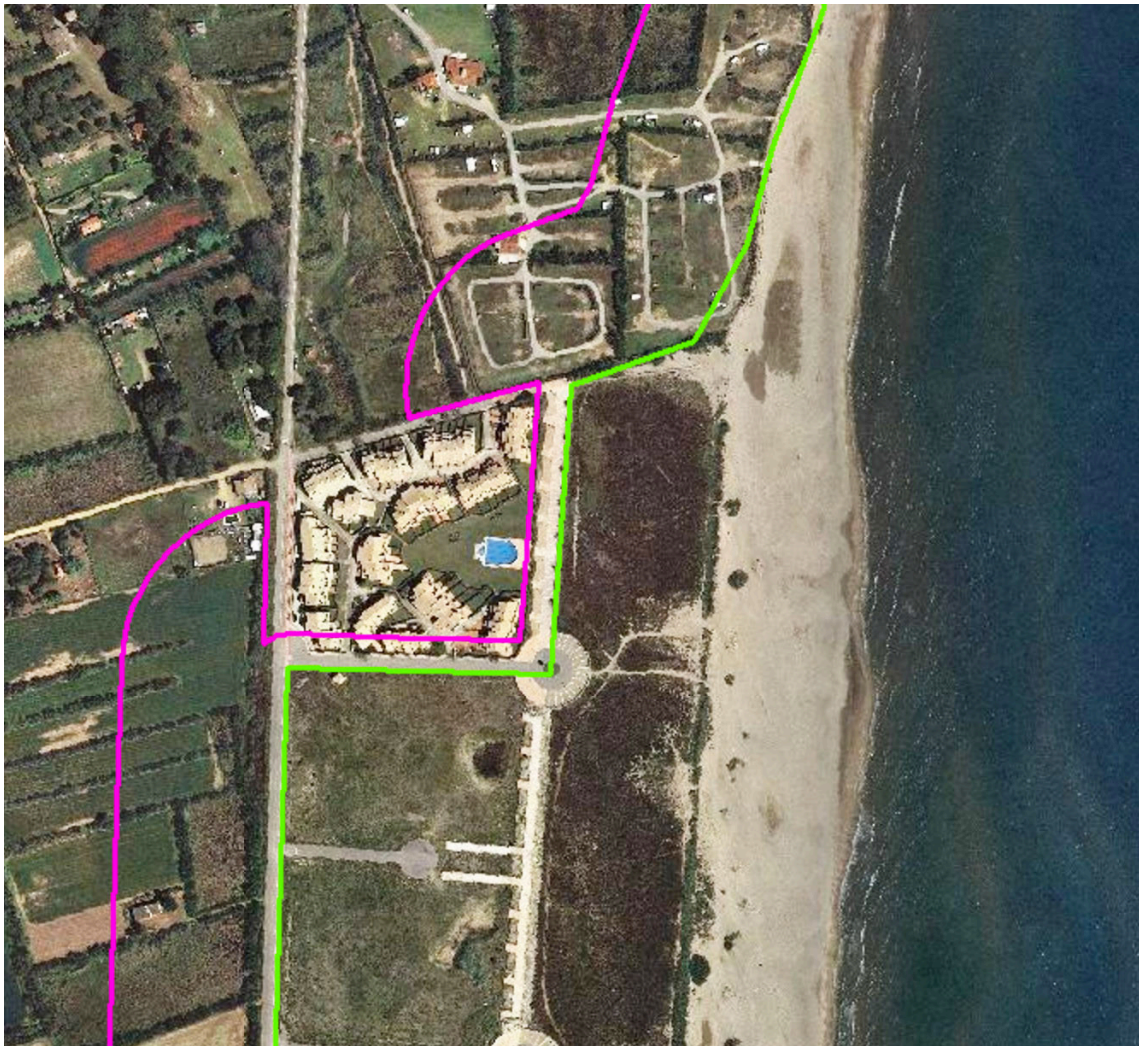
Ending the Seasonal River:

Like in wetlands, the mouth of a torrential seasonal stream (rambla) is demarcated according to the salinity degree of its waters and floodplains. However, the effects of brackish tidal waters appear and disappear almost every season depending on the strength of the storm. In this case still under litigation, the midline of the river is the boundary between two municipalities (Xeraco to the north and Gandía to the south), so the inclusion or exclusion of its banks in either the realm of the land or the sea has an impact on the territorial demarcation of the two municipalities. On the one hand, the north side claims that the Southern flood plain should be considered as part of the river, so that it could annex 600m of prime location beach from the southern side. On the other hand, the south side claims that the river should end in a straight line without considering the banks as part of the public domain, so that their beach does not shrink. The yellow line for the moment cuts across a compromised version.



54: Nules and Borriana, Castellón.
X: 748.245,51; Y: 4.414.444,37; Huso: 30

Inter-Municipal Disagreement:
Because of the different local authorities involved in the shoreline's demarcation, the exact same landscape can be framed under different offset widths in adjoining municipalities. However similar the landscape is on both sides, one may be more conservative than the other in terms of their environmental protection buffer zone. Together, they create a discontinuity in the understanding of the coastal environment. In this particular case, the municipality on the north side of the line mismatch reduced the public beach and the easement of protection to the minimum (characteristic of 'urban artificial areas'); whereas on the south side, the buffer zone is extended to the maximum (characteristic of 'rural natural areas').



55: Platja de la Pletera, Girona.
 X: 737.155,31; Y: 4.383.197,27; Huso: 30

Curved Fillet Offset:

This case indicates an interruption in the development. The *urbanización* in the middle of the photograph, almost completely enclosed by coastal demarcation, shows how only the first phase of the whole development managed to be built (second and third blocks south of it are identifiable by the road that should provide car access, but remain unfinished). The legal compromise was found in letting the first phase stay in place while interrupting the development of the rest. As a consequence, the offset of the shoreline negotiates the encounter between the urban and the buildable through an unconventional curved fillet. It is important to note that the corresponding section of that beach, trapped somewhere between a nature reserve and an urban area, recently became one of the few designated beaches in Catalunya where dogs are allowed. It is described as a 'slightly urbanised natural zone.'



56: Playa La Torre, Almassora, Castellón.
X: 756.053,78; Y: 4.424.337,44; Huso: 30

Rural Widening (Virgin vs. Anthropised):
The historic Mediterranean orchard landscape is not considered as a cultural and ecological entity, but functions many times as a convenient buffer zone. In this case it is apparent how the section of the beach in front of the orchards is not engineered to maintain a certain width, while the urban sections north and south from the orchards are two or threefold wider with the additional help of the coastal terminal groin. Also note the conflicting geometries and typologies between the deep narrow orchards (oriented perpendicularly to the shoreline to profit from the streams flowing towards the coast), as opposed to the long wide urban lots (oriented parallelly to the shoreline to profit from optimal sea views).



57: Xilxes, Castellón.

X: 743.549,35; Y: 4.405.935,66; Huso: 30

Narrow Heritage Strip:

Local residents tried to list these historic fishermen's houses on the waterfront (yellow stripes hatch) as culturally significant buildings (B.I.C.) in order to be allowed to stay in place and resist demolition. The narrow and long shape of the ensemble is characteristic of 19th century coastal villages composed of small houses lined up towards the sea. After a series of litigations, the 2013 Coastal Law conservative amendments declared them an urban exemption; together with other eleven zones and a total of 10,000 constructions scattered across the country, the coastal amnesty allowed them to stay in place for another 75 years.



58: Puçol, Valencia.

X: 735.052,12; Y: 4.388.486,78; Huso: 30

Minimum Offset:

When an area is considered to be anthropised or substantially transformed by humans, the corresponding authorities can determine that is already 'urban enough' to belong to 'nature.' Hence, the bare minimum offset from the coastal baseline can apply, and instead of having a buffer of 100m wide, only 20m is enough. Declaring scarcely inhabited areas as consolidated urbanisation is a recurrent instrument to allow buildings to stay in place or to expropriate as little as possible. In this case, the old small historic buildings are 'invading' the coast, but the large resorts right behind them (that are disturbing the streams and orchard landscape) are saved from demolition. When the new resorts follow the geometry of the orchard grid plots (narrow front and deep sides), the resulting building typically have balconies oriented in an angle to have sea views sideways.



59: Islantilla, Huelva (top)

X: 124.527,42; Y: 4.125.600; Huso: 30

60: Bega de Mar, Valencia (bottom)

X: 737.431,47; Y: 4.346.582,00; Huso: 30

Front Void:

In the quantification of coastal occupation, the volume of the structure plays a small role; it is mainly the footprint which counts to the advantage of large structures to be kept in place. Therefore, landowners of big plots can have a green void facing the beach (suitable for private swimming pool or lawn) and still be legal; whereas small property owners have not enough land to facilitate that buffer. Hotels with green space at the front can create the illusion of open public space. Factors like the disturbance of underground water flow are not considered when determining the quality of the ground surface urbanisation (covered in hard impermeable materials). The porosity of the flooring finish is crucial to the ecology of the underground but rarely considered in determining whether a structure 'invades' the DPMT or not. Indeed, dug out parkings and swimming pools constitute barriers to underground flows (as negative built volumes).



61: Urbanización Real de Zaragoza,
Marbella, Málaga.
X: 339.797,45; Y: 4.040.413,82; Huso: 30

Sudden Zigzag:

The coastal demarcation can bend to specific interests. In this case, the line breaks into a sudden zigzag to exclude one upscale property from the public domain, and allow it to stay within the private domain of the land. Paradoxically, large scale exclusive fincas located on the shore still keep parts of the original landscape of the coastal dunes, due to the sheer size of the property, as opposed to multiple apartment resorts that utilize the whole plot of land. However, there is no obligation or control to avoid gated lawns that affect free movement dunes.



62: Moncofa, Castellón.

X: 744.410,22; Y: 4.408.182,41; Huso: 30

Multi-Zigzag and Non-Parallel Lines:

Adaptation of the shoreline to the shape of the new development of an *urbanización*.

It is important to note in this case how the seasonal stream that runs through the middle of the unfinished development and the surrounding coastal dunes are demarcated with arbitrary offset lines to the end of the sea. The contested yellow line, which should theoretically indicate the end of the beach, does not even match the satellite image that shows part of the beach beyond the end of it (top). The municipality of Moncofa, with a population of 7,000, planned 31,500 new apartments to house an unprecedented migration of 120,000 dwellers that never arrived.



63: Apartamentos Aparwacks, Gola del Puchol, Albufera de Valencia Nature Park. X: 731.206,65; Y: 4.360.713,49; Huso: 30

Trapped Land Enclaves:

Buildable land is atomised in this case into disconnected enclaves of exception. Two twelve-floor buildings are exempted from belonging to the beach, despite being surrounded by land that belongs to the sea. Despite being located in one of the most unique wetland ecosystems in the country, the structures are entitled to be kept in place with the 'minimum possible' footprint. Note how this compromise between human inhabitation and preservation of the landscape includes the rectangular parking areas, built in the middle of the coastal dune system, to 'facilitate access' to the beach.



64: Marina Alcossebre, Castellón.
X: 269.469,67; Y: 4.459.280,96; Huso: 31

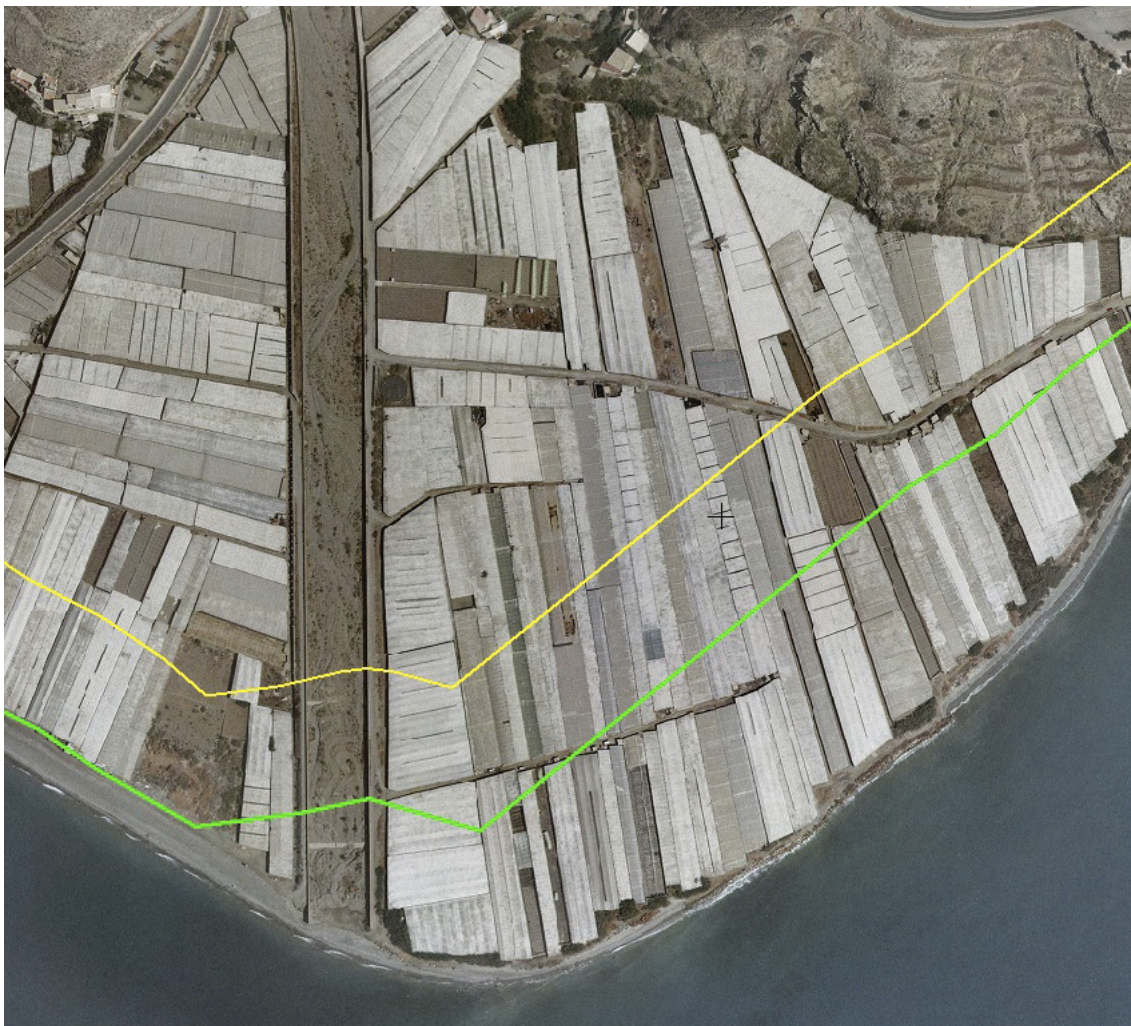
Trapped Sea Enclaves:

Analogous to the previous type, these three blocks are surrounded by water, but they have been legally exempted as building land. Despite being exclusive enclaves, they are allowed to be part of the coastal buffer. Marinas are particularly contested building typologies, as they exist in land that previously did not exist. Demolishing them to restore the 'site' would imply to also restore the dredged sea bed, which is an even more expensive operation. In the case of inland upscale marinas, like Catalan Ampuriabrava, it is not less complicated, as restoration would imply not only to demolish the structures to bring the coastal wetland back, but also to dismantle the banked canals.



65: El Saler, Albufera de Valencia.
X: 733.004,88; Y: 4.355.871,71; Huso: 30

Exclusive 'Green' Zone:
Golf courses are commonly used as ambiguous green zones: they can conveniently be both part of buildable land and part of the sea, depending on how they are classified. Despite being privately used and severely interfering in the water and wind systems of the dunes in the area, they can count as natural spaces respecting the coast. In the case of this golf resort developed during Franco times in the Albufera Nature Park, it is remarkable how despite belonging to the nearby state-run upscale hotel (*Parador*), it is considered to be in a location that 'respects the ecological values of the area'.



66: La Rábita-El Pozuelo, Granada.
X: 332.125,22; Y: 4.155.740; Huso: 30

Greenhouse Ambiguity:

Greenhouses, like golf courses, can be part of either buildable land or the coast. Despite totally disrupting the effects of winds in coastal dune systems and increasing water runoff with fertilisers and pesticides, they are allowed to stay close to the shore, because they are considered agricultural use that is to a certain extent 'natural' to the area. As Keller Easterling describes, they are part of 'plasticulture urbanism cheating the seasons'. They supply off-season produce all year round by taking advantage of the fertility of the soil and the weather conditions. This part of the coast, known as *Costa Tropical*, that stretches to the infamous El Ejido in nearby province of Almería, constitutes a greenhouse belt that is the most prominent agribusiness engine in the entire country. Their density is such, that they are also described as 'greenhouse forests'. After the crisis, many became abandoned though, which worsened the condition of the beach. Given that the beaches were no longer maintained with seawalls, the beach eroded and the plastic and metal structures began to collapse onto the water, magnifying the spread of the remaining chemical substances along the shores.

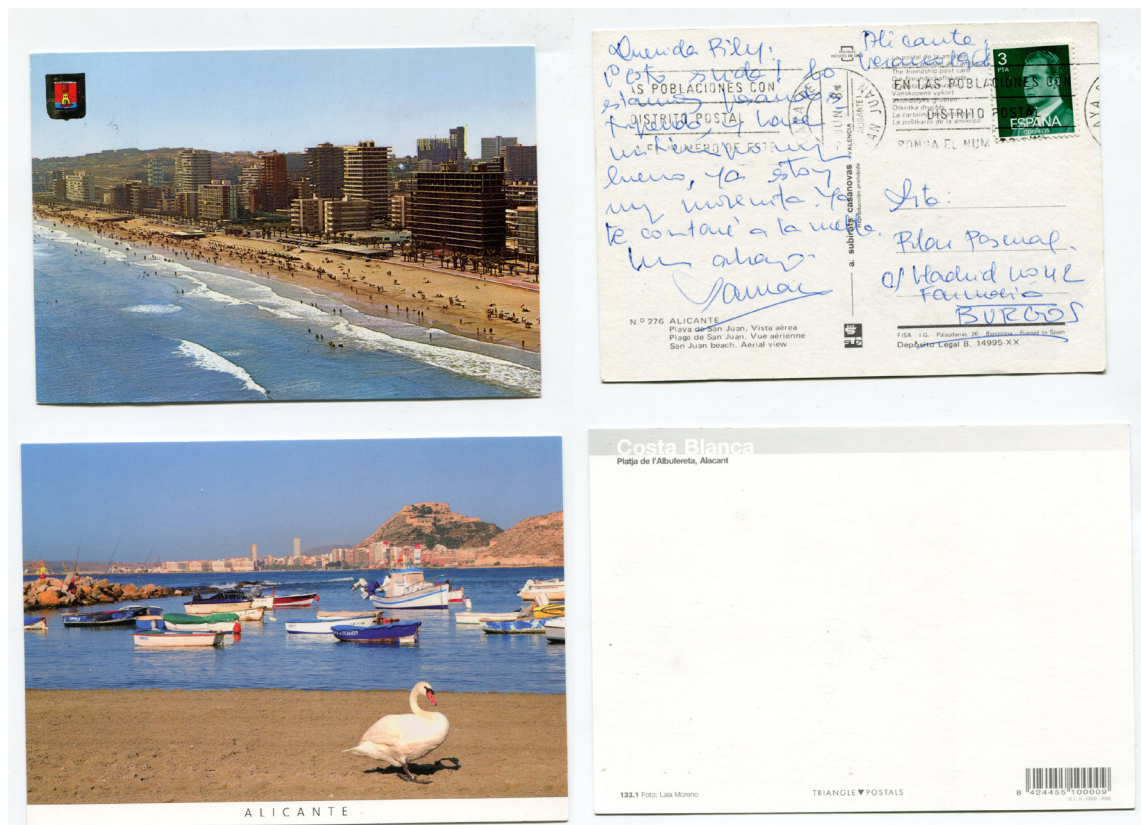
B/ The Failure of the Horizon: Shifted Gaze in the Tourist Image

Not only the views from above have constructed the legality of the shoreline. Even from the perspective of the human eye, the imaginary of the coast has exposed or masqueraded the effects of urbanisation. This section takes a souvenir postcard collection to illustrate the urban development of the Spanish coast during the country's transaction (not transition) to democracy. The 1960s and 1970s were the time of the first wave of speculation on second-home ownership and the consolidation of mass tourism in Spain. The postcards show beaches crowded with holidaymakers. The height of the mega-towers and the tonnes of mortar sands, asphalt, steel and glass were a visual indicator of the country's degree of development and civilisation, measured and exported as an image of modernity. The writing on the back of the postcards is banal, and could be summed up as: 'I'm on holiday, I'll tell you all about it when I get back'. The written content was less important than an imaginary of modernity produced through the architecture of a place.

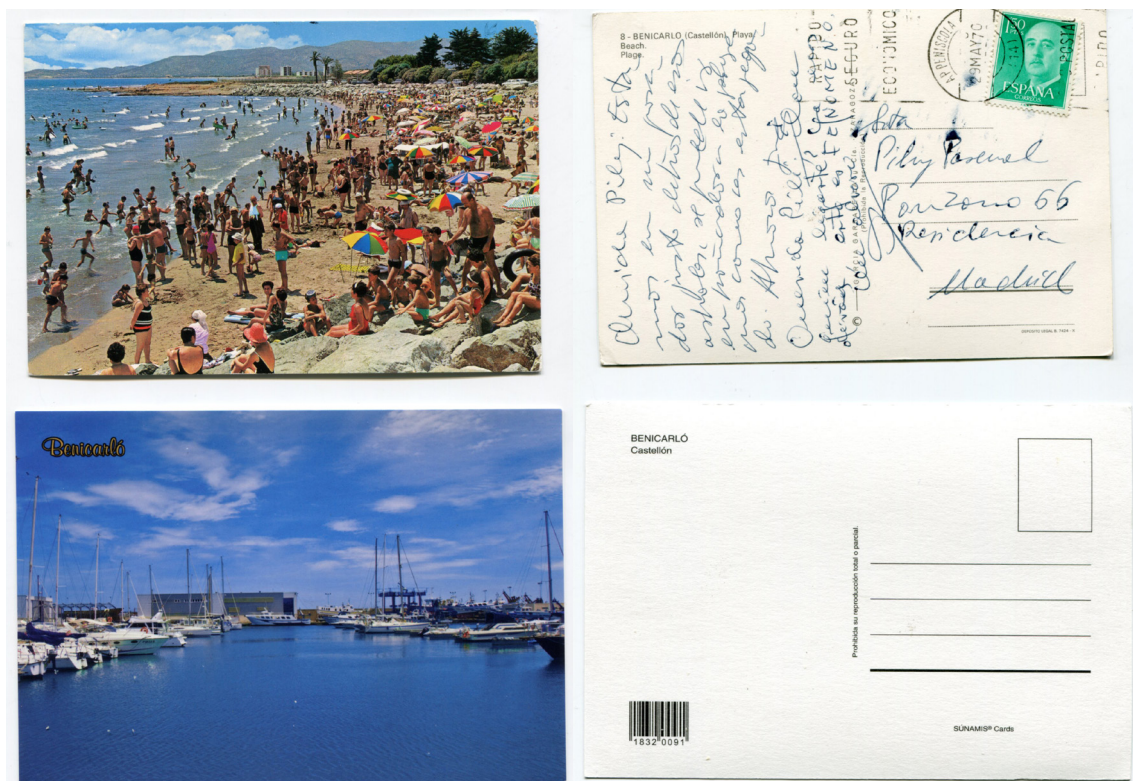
Trying to find the equivalent image of those same beaches, this research sought current visualisations of the places captured in the postcards, to understand the contemporary gaze through the postcards sold at those same sites today. Each postcard has a corresponding picture from the same place in 2012, in the period of crisis following the real estate boom and bust of the noughties (Figs. 67-73). Even if the same beach is more urbanised, degraded, or less natural than it was 30 years ago, the postcards today still sell us a model of paradise. They avoid image framed of the land from sea, possibly to hide the aberrant constructions of the past. The shots are instead directed towards the sea. They shy away from showing masses of people. Today, the foreground shows fishing boats, luxury cruisers, animals, or deserted locales. Bucolic palm trees and natural components of the landscape have replaced the buildings.

This shift from a concrete-oriented gaze toward a nature-oriented one can be situated as part of the aforementioned narrative of environmental stewardship. The shoreline is invented anew in order to keep the vacation bubble rolling. Marketing operations need new approaches to attract holiday-goers to the formerly glorious Costa del Sol, Costa Blanca, or Costa Brava. In order to do so, the images offering the 'natural experience' of the coast seem to be the only attempt to engage with the four-dimensional condition of the shoreline. The Coastal Law and its demarcation system certainly does not. The changing postcard relies then on the government of desire and the management of environmental responsibility at a visual and superficial level.

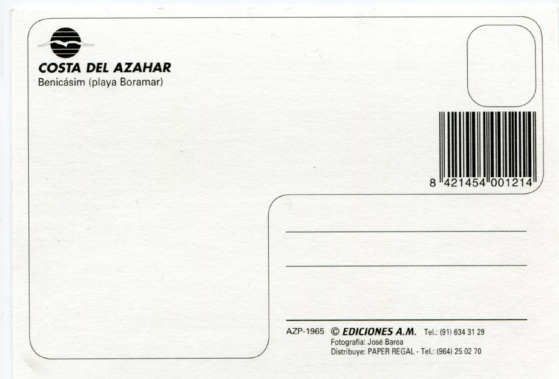
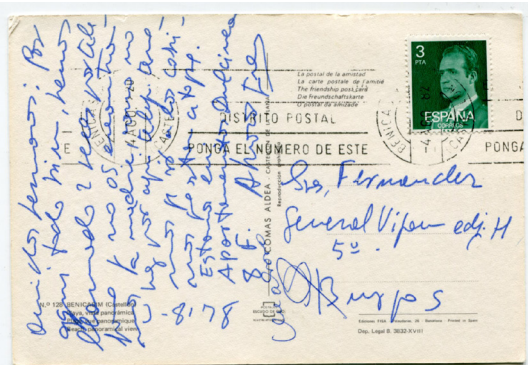
The collection and recollection of postcards is the result of many field trips along the Spanish shores to understand the fascination with inhabiting (seasonally) on that strip. The postcards are accompanied by a selection of photographs capturing some of the tensions in the built environment that render the littoral ambiguous (Figs. 74-93).



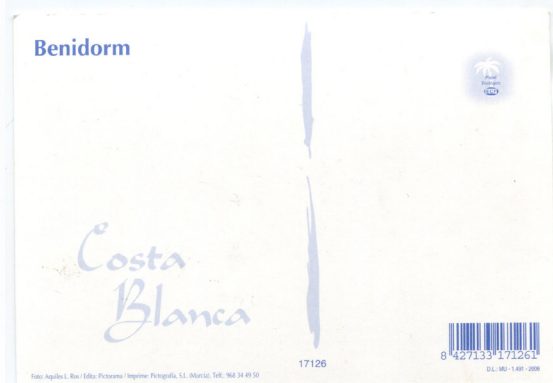
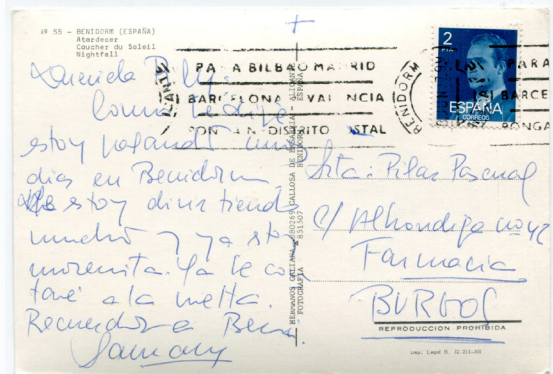
67: Alicante, June 1968 and 2012.



68: Benicarló, 29 May 1970 and 2012.



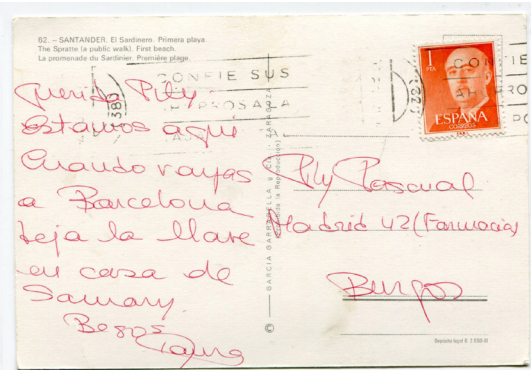
69: Benicassim, 3 August 1978 and 2012.



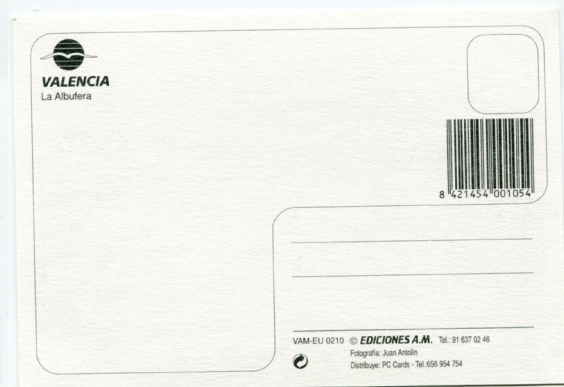
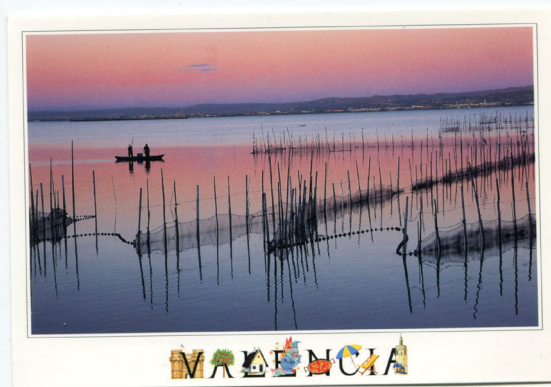
70: Benidorm, 8 June 1979 and 2012.



71: Fuengirola, 24 September 1976 and 2012.



72: Santander, ca. 1975 and 2012.



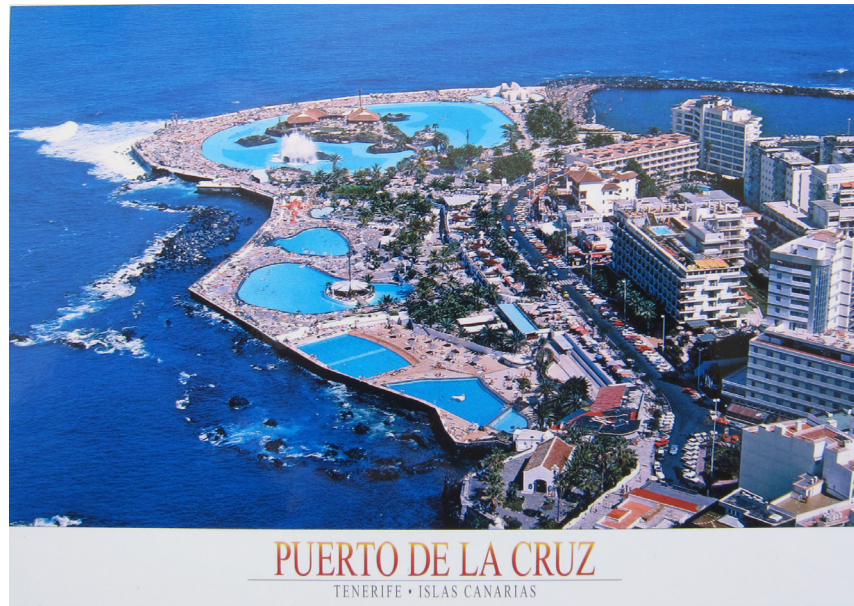
73: Valencia, 13 October 1968 and 2012.



74-75: Concrete boundary stones (*mojones*) to demarcate the Spanish Maritime-Terrestrial Public Domain (DPMT) according to 'the highest tide in history.' Mojón in Cape Cope and N. 275 (with concrete base). Note how coastal winds in a marine environment deteriorate the edges of the concrete pole. Calnegre, Murcia.



76: Boundary stone in a wetland failing to separate land (the top half of the image) and sea (the bottom half). It is meant to indicate the point reached by the 'highest tide in history.' Alicante, May 2014.



77: Postcard depicting Lago Martiánez, a coastal pool complex conceived by César Manrique in Puerto de la Cruz, Tenerife, 1971-77. This project is paradigmatic in the blurring of the shoreline, through a landfill/seafill project: walking surfaces are gained to the sea, whereas seawater is introduced into the pools. Rocks were placed outside the pools to slow down the strength of the ocean. The littoral is constructed around the slowing down of the speed of the waves.

78: Broken breakwaters in Puerto de la Cruz, right outside the Martiánez pool complex. The waves from a winter storm have managed to penetrate through the concrete seawall and broken it into pieces.



79-80: 'Stabilised' coastal sand dunes, Tarifa, Cádiz. Whenever Levante winds blow, the dunes cover the road in sand, and vehicles get stuck on their way to the beach. The road was built by Franco in 1940 to give military access to the coast in case of a British attack from Gibraltar. The road needs to be constantly cleared of sand by the Army and a pine tree forest was planted to help retain it. Since the 1988 Coastal Law, the dunes became protected landscape and were passed on to the Ministry of the Environment's jurisdiction. Lacking former military presence, they struggle to keep the dunes 'in place.'



81: Abandoned greenhouse in Cape Cope, Murcia. A mega-coastal development (Marina de Cope) was stopped with the crisis. Coastal agricultural land is still awaiting reclassification into buildable land. Poli-tunnels along the coast of Murcia and the plastic city of El Ejido in Almería, often dig out sand from the seabed as a base layer for the greenhouses. They not only disrupt coastal winds on their way to deposit sediments by the sea, but parts of the tidal zone are literally displaced to grow vegetables in them.

82: Coastal saltworks at San Pedro del Pinatar, Murcia. The different colour tones of the seawater indicate the concentration of salt: the pinker, the saltier; the bluer, the fresher.



83-84: Polaris World, Torre-Pacheco, Murcia. View from inside and outside the golf resort. There are currently nineteen golf courses in the region of Murcia, one of the most arid coastal areas in Spain. The intensive use of water for lawns and hotels has often been masqueraded under agricultural irrigation. This has considerably contributed to increasing the amount of water divested from other basins in the country. Consequently, sediment flows down the local rivers have been altered and no longer supply the coast and its beaches with aggregates. This has led to regenerations of the littoral with sediments from the seabed and other sources.



85-86: Holiday resorts along Las Américas Beach, southern coast of Tenerife. Themed after Ancient Rome, Greece, and other stereotypes of Mediterranean living, these housing typologies are transplanted onto the Canary Islands by world holiday operators and hotel chains. They bring the architectural imaginary of the Mediterranean onto the Atlantic shores off the coast of Morocco.



87-88: Ten-Bel complex, built in 1963 as a resort to enhance the Tenerife-Belgium holiday connections, Costa del Silencio, Tenerife. At its peak in the 1980s, it had 5,200 beds. The blocks on top of the cliffs are legal according to the Coastal Law, as topography over 60° slope is excluded from the public maritime domain and can be buildable. A public right of way at the edge of the cliff is the only concession at the moment (see bottom image, footpath on the right).



89-90: Widespread architectural typologies of the littoral built environment: modern blocks with balcony flats towards the ocean view. Prime location buildings have fully frontal balconies, whereas second-tier developments maximise the optimal view by designing balconies in an oblique angle. Top: Puerto de la Cruz, Tenerife. Bottom: La Manga del Mar Menor, Murcia.



91: 'Gerontification' of Benidorm. The conversion of most balconies into glazed conservatories indicates that the apartments are also inhabited in winter. Benidorm, has decayed in popularity for summer holidays for its architectural fabric to such an extent, that pensioners have taken advantage of the surplus of affordable flats on the coast. Benidorm exemplifies a shift from 'spending the summer' to a city dependent on permanent retirement plans subsidised by the state.



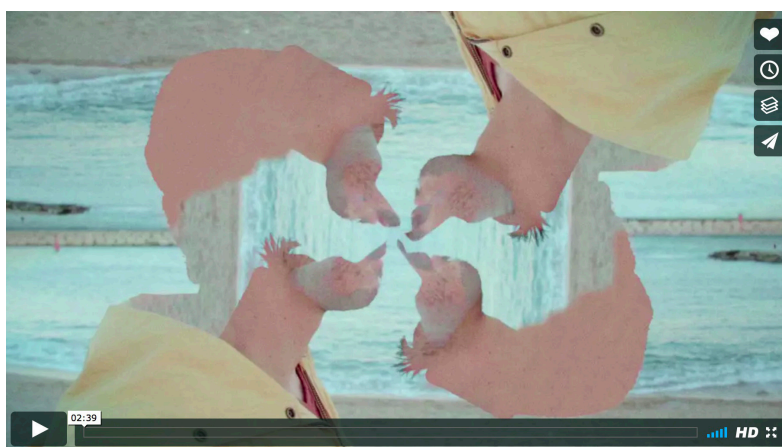
92-93: Arbitrary demolitions on the coast. Large resorts have not been demolished despite being too close to the water (top: Algarrobo, Almería); whereas fishermen houses and local structures are easier to knock down given that small stakeholders lack capacity of negotiation (bottom: El Sauzal, Tenerife). In the public taking of single story structures and 'undesirable' impoverished citizens, the government does not require big investments to revert the coast to its 'natural' condition; and it can promote it as exemplary acts of environmental conservation.

C/ Where The Sea Ends is Not Necessarily Where the Land Begins

Short film by the author, in collaboration with Borja V. Conde; voice over by Omer Eltigani (UK/ES, 2013, 2:39).

Following the logic of the 1988 Coastal Law, the film is treated as an eco-fiction narrative to perform the incongruences that the law dictates. It portrays a Spanish legislator, whose life mission is to physically demarcate the end of the coastal commons, a line that does not exist. Through a combination of voice over and archival material, the moving image brings in the neoliberal contradictions around the definition of the end of building land and the beginning of the sea. The protagonist in the film has a perpetual task that reminds the viewer of the Myth of Sisyphus and a certain philosophy of absurd reasoning. Influenced by the Greek king of the myth and his forced task of rolling a boulder up a steep hill for it to roll down and then be forced to roll it up again for eternity, the film also portrays unreasonableness through the analogy with the Coastal Law. It draws a direct parallel with the hard task of physically demarcating the shoreline as an impossible conquest. With sea waves splashing against his feet, the protagonist holds a can of green spray. He tries to catch the highest tide and mark the precise extent of the sea in real time. But the harsh wind is blowing, and the particles of green spray paint dissolve in water, merge with the moist sand or simply fly away. The painted line seems not to stay for long, as there is always a new wave that comes in and washes off the green mark. It is hard to determine whether the protagonist is punished to eternity to do his job or whether his very reason of being is to keep changing the line at every moment. Without it, the world would not need him.

Accessible at: <https://vimeo.com/61849455>



94: *Where The Sea Ends Is Not Necessarily Where The Land Begins*, film still.

D/ Boundary Gazpacho

Geopolitical Cooking Performance by the author, TEDx Talk Madrid, 2012 (17:23)

The controversial Spanish 1988 Coastal Law and the 1998 Land Law are explained through an edible map of contested ingredients related to the Spanish real estate bubble; speculative demarcation of land, and appreciation of the soil. The format consisted of a TEDx talk in Madrid in order to explain the housing crisis through both laws as a visual map explained in 20 minutes for 500 people. The Coastal Law defines the shoreline as the extent of the highest tide in history. But this definition brings up many arbitrary judgements as explained in Chapter 1. Given that it is sometimes necessary to track the prehistoric salinity of the soil in order to find any presence of the sea in it, salt itself can also go to court. This is what happened in the case of the Cabanes coastal wetlands, where it was necessary to use the international salinity threshold PSS-78, which determines that seawater is that one which contains over 3 parts per thousand of salt. The Boundary Gazpacho unpacked this and other legal conundrums around zoning for real estate profits by using that amount of salt, as well as a selection of ingredients connected to other soil struggles along the Spanish littoral for the recipe. Aiming to explore other forms of mapping, they featured urban planning related conflicts and marketisation of different Spanish territories in the form of geopolitical edible maps of the housing bubble.

Accessible at: <https://www.youtube.com/watch?v=elXJski4i78>

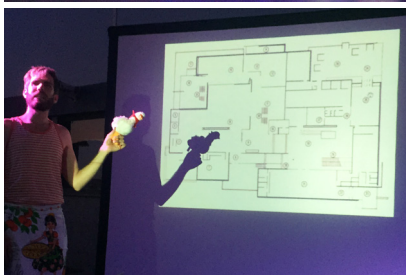
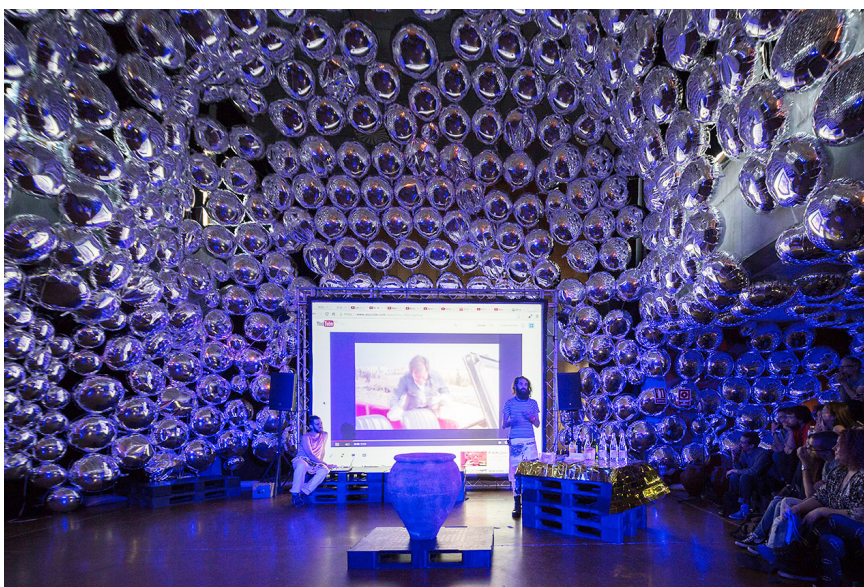


95: *Boundary Gazpacho*,
courtesy of TEDx Madrid.

E/ When Agua De Murcia Lost Its Virginity

Lecture-Performance by the author and Alon Schwabe, FAN Riots, SOS Murcia, 2014, curated by Iván López Munuera; re-enacted at CA2M, Madrid, 2015.

The marketing of the Spanish imaginary of the coast abroad experienced a big push during Franco's dictatorship with the architectural display of the Spanish pavilion at the 1969 World Exhibition in New York. The lecture-performance unpacks that first moment when nations branded their territory through themed foods and spatial inventions by deconstructing the way Spain was spatialised in the pavilion: a series of modern open-plan rooms reconstructed the recently invented Costa del Sol and other itineraries through the Iberian Peninsula for a foreign eye. The performance was structured around the laws regulating the definition of sangría (also a newly invented drink for tourists back then) as a territorialised subject within the Marshall Plan. By defining what is sangria according to European law and what is not, the making of the recipe explored other military agreements between Franco and the US that included the reorganisation of national infrastructure projects and urbanisation of the littoral to open it up to global hotel chains and circulation of tourists along the newly defined shores of the country. The urbanised/virgin/militarised coast was investigated through a collection of popular music videos shot on the Mediterranean waterfront from the 1960s onwards to understand how the littoral went through the making of its new image and how desire and economic interests alongside it were constructed. In short, how the littoral was defined through carefully planned diplomatic and real estate profit margins.



96-97: *When Agua de Murcia Lost Its Virginity*, images courtesy of SOS Murcia and CA2M.



98: After the urbanisation of the coastal dunes to their utter extinction and the banking of the Río Seco river, Alicante's beach had lost its main source of sands and sediments and had almost disappeared. In the 1990s, its extreme condition led to a large-scale 'restoration.' 2,176,000 m³ of sand were brought from the mountains. Alicante, July 1991.

2– OFFSET

Speculation on Disappearance:

From Real Estate Boundaries to Banking Nature

‘We were land users, not land owners. We were part of the environment, we didn't own the environment. And that's why our people thrived. The word subsistence is a bad word. That does not define our lifestyle at all. We did not subsist, our communities thrived up here.’

—Enoch Adams, Inupiaq resident of Kivalina, AK

‘You can't own a place like this. It belongs to the planet. I'm only the guardian.’

—Paul Fentener van Vlissingen, richest man and largest landowner in Scotland.³¹⁶

2.1 Conflict of Interest: The Insurance-Engineering of the Coast

In September 2006, only a year after the devastating Hurricane Katrina, State Farm Insurance, one of the largest homeowner insurers in the US, changed the definition of ‘coastal area’ from 1000 feet to one mile.³¹⁷ By extending the littoral zone over five times inland in the name of security, existing houses were moved closer to the water than they had ever been before. State Farm Insurance dropped coverage over coastal properties, which were then stranded in a freshly fabricated coastal strip. The decision reclassified space as if the houses on the waterfront had already been flooded. Furthermore, this action contested the *de jure* demarcation of the coast by implementing a different *de facto* line; a more convenient version, which pre-empts the insurance company from million-dollar compensations in the case of another Hurricane Katrina in the near future. Under the name of environmental protection and climate change mitigation, the shoreline was pushed landward to reduce the quantity of insured objects (Figs. 99-102).

While far from mitigating the damage to buildings on the shore, this redefinition of the end of the sea allegedly protected coastal properties through financial liability (creating new contractual obligations or potentially unfavourable exchange of assets). It constituted a form of insurance-engineering of the coast: it defined a zone where inhabitants were not only at risk, but legally detached from the disaster relief provided by home insurance.³¹⁸

³¹⁶ in 2005

³¹⁷ Sandra Fleishman, ‘Sea Change in Insurers’ Coastal Coverage,’ *Washington Post*, 30 December 2006, <http://www.washingtonpost.com/wp-dyn/content/article/2006/12/29/AR2006122900626.html>; Bonnie McCay, ‘The Littoral and the Liminal: or Why it is Hard and Critical to Answer the Question “Who Owns the Coast?”,’ *Marine Anthropological Studies* 17 (2009): 7.

³¹⁸ Robert L. Wiegel and Thorndike Saville, ‘History of Coastal Engineering in the USA,’ in *History and Heritage of Coastal Engineering*, ed. Nicholas C. Kraus (New York: ASCE, 1996): 514.

The decision to push the coastline further inland left thousands of policyholders in a new legal limbo of potential eviction and the eventual loss of their mortgaged home. In Alabama alone, State Farm Insurance refused to renew coverage for about 2,600 homes stranded in the newly securitised shore.³¹⁹

The value of those properties dropped just as much as their protection coverage. State Farm had no interest in securing houses that were *too far away* from the newly created safe ground. When insurers abandoned the coastal market, not only did they literally sink mortgages under water, but they also redefined nature through financially constructed environments. Home insurance policies began to separate hurricane damage into wind damage (covered) and flood damage (not covered). They disconnected the effects of wind from water as if they were two separate forces in order to isolate the dynamic components of the shoreline. In major hurricanes, determining whether a house is destroyed due to wind or water damage thus has serious legal and economic implications. Private insurance companies (like State Farm) cover structures that are blown away, whereas properties that are washed away are within the responsibility of the National Flood Insurance Program (NFIP), which is subsidised by US taxpayers.³²⁰ As a result, a pile of debris after a storm is a controversy rather than a tragedy – a matter of judgement to be assessed according to the perception of facts and the optimisation of profit margins.

With the legitimacy to both create the problem and provide the solution, State Farm was accused of a conflict of interest.³²¹ The corporation insisted on the power to determine whether hurricane damage was due to the movement of water, effectively defrauding the US government with intentionally wrong assessments of damage.³²² But after the 2016 Department of Labour 101 New Fiduciary Rule, State Farm Insurance was forced to reshape sales of its financial products and retirement plans. Their sales agents, paid per sale of financial products delivered, could not be both brokers and consultants.³²³ They could not *prudently* take care of money or assets for another person; consultants and brokers will never be able to act in the best interest of the client when they have a clear financial benefit from that client making certain decisions.³²⁴ Whether or not biased advice constitutes a conflict of interest or a value-added service remains at the core of the ethical interpretation of profit.³²⁵

³¹⁹ Garry Mitchell, 'State Farm Won't Renew 2,600 Policies in Alabama Beach Towns,' *Insurance Journal*, 5 February 2007, <http://www.insurancejournal.com/news/southeast/2007/02/05/76560.htm>

³²⁰ 'State Farm and Conflict of Interest,' accessed 17 June 2017, <http://state-farm-conflict-of-interest.blogspot.co.uk/>

³²¹ *State Farm Fire and Casualty Co. v. United States ex rel. Rigsby et al.*, 580 US (2016).

³²² 'State Farm and Conflict of Interest,' accessed 17 June 2017, <http://state-farm-conflict-of-interest.blogspot.co.uk/>

³²³ A 2015 report by the White House Council of Economic Advisers found that biased advice drained \$17 billion a year from retirement accounts. See 'DOL Fiduciary Rule Explained as of July 5th, 2017,' Investopedia, accessed 2 July 2017, <http://www.investopedia.com/updates/dol-fiduciary-rule/>

³²⁴ James G. March, 'Bounded Rationality, Ambiguity, and the Engineering of Choice,' *The Bell Journal of Economics* 9 (1978): 589-590.

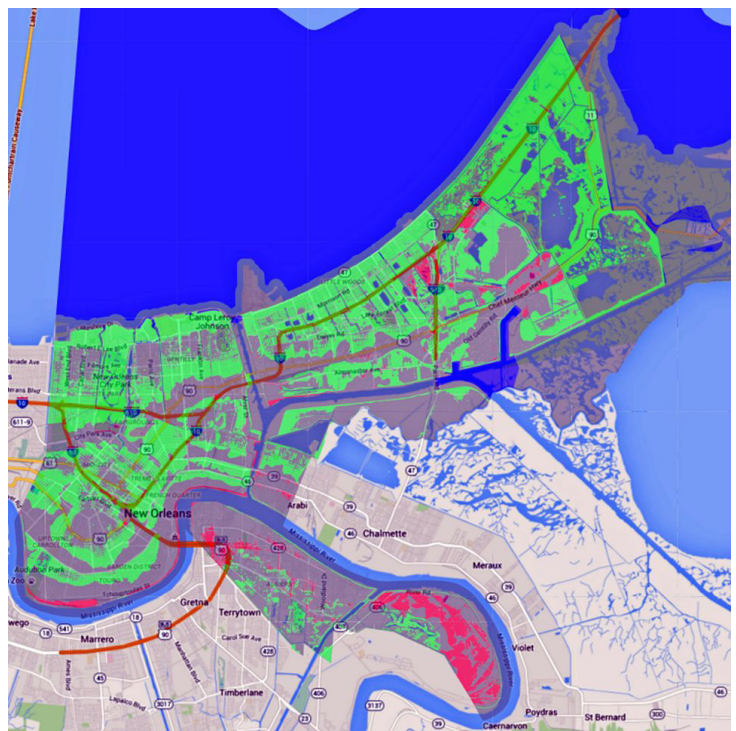
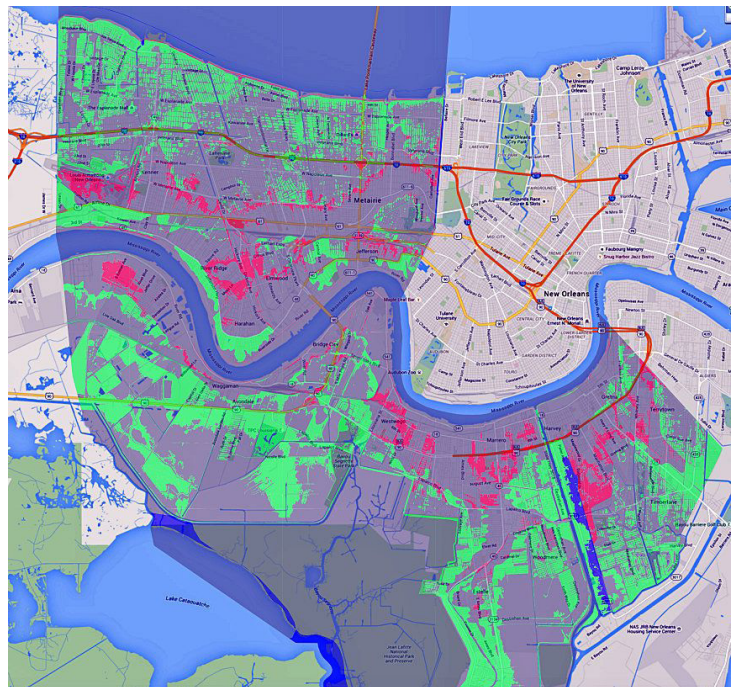
³²⁵ Jack P. Gibson, 'Agents and Brokers as Consultants: Conflict of Interest or Value-Added Service?', International Risk Management Institute, accessed 28 June 2017, <https://www.irmi.com/articles/expert-commentary/agents-and-brokers-as-consultants-conflict-of-interest-or-value-added-service>. Then-President Barack Obama's Fiduciary Rule, initially scheduled to be phased in during 2017 and against significant opposition from the financial sector, has nonetheless been referred to as the most significant industry development since tax reform to annuities in the 1980s. See also Kevin Mechtley, 'DOL 101: The Fiduciary Rule's Impact on Insurance Only Agents,' Investment Advisor, 31 May 2016, <http://www.lifehealthpro.com/2016/05/31/dol-101-the-fiduciary-rules-impact-on-insurance-on>



99: Flood damage after Hurricane Katrina (top left).

100: After the Mississippi River floodings in May 2011 and the inoperative response from the USACE, residents started to build their own DIY levees to protect their homes (top right).

101-102: New Flood Insurance Rate Map (FIRM) of New Orleans, released by the US Federal Emergency Management Agency. After reassessing the new topography of the city, drainage works and new levees, they show neighbourhoods that do not require expensive flood insurance any longer (in green) and those that needed anew (in red). Source: FEMA, March 2016.



Disagreement between US insurers and coastal dwellers on the precise definition of the coast after Hurricane Katrina depends on the liminal condition of being simultaneously on land and at sea. This ambiguity constituted a powerful tool for State Farm Insurance in their attempt to avoid coverage for damaged properties. The redefinition of the coast depended on the profit margins of the company and *vice versa*. Ambiguity in damage accountability along the shifting shoreline exposes how tightly a spatial offset (or a buffer zone) is connected to the offset of responsibility. The manufacturing of coastal boundaries and the different forms of displacement embedded in them are both a result of the different meanings of 'offset': a consideration that diminishes or balances the effect of its opposite, the amount or distance by which something is out of line, and a short distance measured perpendicularly from the main line of measurement.³²⁶

The shoreline is not a clear separation between where the sea ends and the land begins.³²⁷ As tornados and tsunamis threaten property-owners and insurers, the coast should at least be defined as the space where land, water and air meet (the gas exchange between air and water is also fundamental to biological and sedimentation processes).³²⁸ The definition of the shoreline must respond to physical, ecological or cultural criteria simultaneously, but they rarely coincide.³²⁹ The littoral is in fact a liminal space that remains transitory, and is permanently situated at a threshold.³³⁰ This thesis argues that the shoreline cannot exist as a line, but is instead a four-dimensional construct, changing over time and transcending microscopic and macroeconomic scales. From the particle of sea salt that proves the extent of the sea to the liabilities that State Farm Insurance trades in the stock market, profit margins tighten or loosen the demarcation of the coast. They make the shoreline into a carefully manipulated financial littoral.

A large portion of the destruction wrought by Hurricane Katrina was caused by engineering and engineering-related policy failures.³³¹ As part of an economy of prudence and the ambiguity of offsetting interests, the US Army Corps of Engineers also played a key role in the looting mongering of the shore. Created by US Congress in 1802, the Corps quickly shifted its battleground from the military to infrastructure.³³² For the sake of national security against the environment, it became increasingly involved in civilian activities as an agency with authority and liability over the entire US river system, flood control, canals, boundaries, and water transportation.³³³ During the 1930s, large-scale flood control projects were embraced as a way

³²⁶ 'Offset,' Oxford Online Dictionary, accessed 18 June 2017. <https://en.oxforddictionaries.com/definition/offset>

³²⁷ Carl Schmitt, *Land and Sea*, trans. Simona Draghici (Washington DC: Plutarch Press, 1997), 1-2.

³²⁸ Richard W. G. Carter, *Coastal Environments: An Introduction to the Physical, Ecological and Cultural Systems of Coastlines* (London and San Diego, CA: Academic Press, 1991), 14.

³²⁹ Ibid, 1-2.

³³⁰ Bonnie McCay, 'The Littoral and the Liminal: or Why it is Hard and Critical to Answer the Question "Who Owns the Coast?"', *Marine Anthropological Studies* 17 (2009): 7-8.

³³¹ American Society of Civil Engineers, 'The New Orleans Hurricane Protection System: What Went Wrong and Why,' ASCE, 2007, v-viii, accessed 14 May 2017, <http://biotech.law.lsu.edu/katrina/reports/erpreport.pdf>

³³² The idea of a Corps of Engineers dates back to Louis XIV, when an elite and scientific force of government planners modernised France through highways, waterways, and aqueducts. See Todd Shallat, *Structures in the Stream: Water, Science, and the Rise of the US Army Corps of Engineers*, (Austin: University of Texas Press, 2013), Prologue.

³³³ Roger D. Congleton, 'The Story of Katrina: New Orleans and the Political Economy of Catastrophe,' *Public Choice* 127 (2006): 9-10; Garrett Power, 'The Fox in the Chicken Coop: The Regulatory Program of the US Army Corps of Engineers,' *Virginia Law Review* 63 (1977): 505.

to create jobs, and the Corps – along with other federal agencies – spearheaded efforts to drain wetlands nationwide.³³⁴ Water infrastructures were instrumentalised for geopolitical interests, as in the case of the canalisation of the Rio Grande River around El Paso/Juarez, which limited the movement of the boundary with Mexico in the name of flood control.³³⁵ Even the USACE logo, consisting of a medieval gate of the French walled city of Verdun, identifies their role as guardians of the threshold and reiterates their power to decide what is allowed on each side of the boundary. The Corps acts as a bipolar Jekyll and Hyde: the catalyst of capitalism and a threat to the capitalist system, a bold innovator and a brake on the wheels of change.³³⁶

USACE has been called America's preeminent engineering organization, a nation builder, and a bureaucratic superstar, but also a public enemy, a diligent destroyer of wetlands, a military aristocracy, and a 'lobby that cannot be licked'.³³⁷ Its nation building schizophrenia has muddled operated between wetland protection and swamp reclamation, between environmental advocacy and biased ecology to benefit real estate interests.³³⁸ Their notion of the public good is both ambiguous and influenced by the views of the political party in power or the corresponding chain of command.³³⁹ In their promotional material, the USACE defines itself through the Mandarin term for political rule (治), as the combination of the characters for river and dyke, and conclude that 'water management (and water reform) is ALWAYS political (治)'.³⁴⁰ Furthermore, their scientific analyses have been fraught with errors, mistakes and miscalculations, based on invalid assumptions and outdated data.³⁴¹

In 2000 the Corps helped launch an \$8 billion effort to restore the Florida Everglades, a project necessary in part because of damage by the Corps' own previous infrastructure projects.³⁴² Their publicly subsidised beach nourishment programme has proved inefficient, as pumping sand along the nation's shoreline does not provide communities with protection from hurricanes and erosion, but rather benefits landowners with beachfront properties.³⁴³ It is the urgency of climate change that mobilises action and funds; after Hurricane Sandy in 2012, the USACE

³³⁴ Chris Edwards, 'Cutting the Army Corps of Engineers,' *Downsizing the Federal Government*, 1 March 2012, https://www.downsizinggovernment.org/usace#_edn14

³³⁵ Samuel Whittemore Boggs, *International Boundaries: A Study of Boundary Functions and Problems* (New York: Columbia University Press, 1940); John W. Donaldson, 'Paradox of the Moving Boundary: Legal Heredity of River Accretion and Avulsion,' *Water Alternatives* 4 (2011): 156.

³³⁶ Todd Shallat, *Structures in the Stream: Water, Science, and the Rise of the US Army Corps of Engineers*, (Austin: University of Texas Press, 2013), 202.

³³⁷ *Ibid*, Prologue.

³³⁸ Arthur Morgan, *Dams and other Disasters: A Century of the Army Corps of Engineers in Civil Works* (Porter Sargent Publisher, 1971); Chris Edwards, 'Cutting the Army Corps of Engineers,' *Downsizing the Federal Government*, 1 March 2012, https://www.downsizinggovernment.org/usace#_edn14.

³³⁹ In fact technical analysis can make the decision-maker better informed, but the public interest can be calculated only by a politically responsive and representative political body which the Corps is not. [...] In the words of Senator Edmund Muskie: "[We] have put the fox in the chicken coop [and it has] become a chicken." See Garrett Power, 'The Fox in the Chicken Coop: The Regulatory Program of the US Army Corps of Engineers,' *Virginia Law Review* 63 (1977): 559.

³⁴⁰ Original emphasis. See 'US Army Corps of Engineers,' September 2014, http://www.usace.army.mil/Portals/2/docs/USACE_101_Sep_2014.pdf

³⁴¹ 'Corps of Engineers: Observations on Planning and Project Management Processes for the Civil Works Program,' Government Accountability Office, 15 March 15 2006, <http://www.gao.gov/products/GAO-06-529T>

³⁴² Edwards, op. cit.

³⁴³ Ryan Alexander, 'The Army Corps of Engineers Excels at Wasting Money,' *US News*, 27 March 2013, <http://www.usnews.com/opinion/blogs/economic-intelligence/2013/03/27/the-army-corps-of-engineers-excels-at-wasting-money>

received significant budget increases.³⁴⁴ The question remains to what extent the infrastructural solutions they provide as a public body might incur in a conflict of interest equivalent or different to State Farm, a private company operating between assessing damage and providing coverage.

2.2 Creating Coastal Threat to Provide Mitigation

In March 2009 the US Army Corps of Engineers released the 'Alaska Baseline Erosion Assessment Report', tracking the 10,000 named and thousands more unnamed rivers, creeks, and streams of Alaska, as well as its 44,000 miles of tidal zones and more than 3 million lakes.³⁴⁵ As a result, the 178 communities in Alaska that had reported erosion problems were put at the fore. After the investigation, 26 were designated 'Priority Action Communities' in need for immediate solutions to manage coastal erosion.³⁴⁶ One of these was Kivalina, an Inupiaq group of 400 people that had been forcibly relocated in 1905 to a barrier island on the northwestern coast of Alaska (Figs. 103, 104). Their seasonal campsite for summer fishing was turned into a permanent village, exposed to the winter storms coming off the open Chukchi Sea. After building a school on the coastal site, the Bureau of Indian Affairs threatened the nomadic residents with imprisonment should they fail to send their children to class every day. By converting the nomadic Inupiaq into *literate* subjects, they also became discipline-able and governable by the state.

Within this complex condition and the increase in land loss, a series of local and governmental mitigating actions have been taking place over the last decades. The first storm attributed to the acceleration of climate change hit the island in 2004.³⁴⁷ The storm eroded large parts of the land, with waves reaching up to the doorsteps of residential homes. The residents of Kivalina, fighting against the volatile sea, tried to protect their village by building provisory barriers and filling in soil and gravel where land had eroded away. In response to this event and to a storm in the fall of 2005, the North West Arctic Borough initiated a series of costal management actions to fortify Kivalina's shoreline. The first attempt was a gabion basket retention wall, filled with sandbags. On the day of its inauguration, in October 2006, the newly built sea wall failed and intensified the erosion because of the dredged shoreline. The USACE began to build a rock revetment in 2008, a structure projected to last 10-15 years, but due to lack of funds, only half of it was executed.³⁴⁸

The 2009 coastal erosion report took the violent colonial project one step further. The USACE made the community officially vulnerable to weather as a result of living so close to the sea in winter, a location that the people of Kivalina had never chosen as a permanent site.

³⁴⁴ Including nearly \$3.5 billion in the emergency spending bill passed right afterwards.

³⁴⁵ It is not entirely clear in the report to what extent the binary named-unnamed included Inupiaq place naming.

³⁴⁶ Additionally, there were 69 'Monitor Conditions Communities' with erosion problems but not significant enough to require immediate action; and 83 'Minimal Erosion Communities' with minimal erosion-related damages reported.

³⁴⁷ Orville T. Magoon et al., *Coastal Engineering Practice 2011* (ASCE Publications, 2011), 73.

³⁴⁸ Christine Shearer, *Kivalina: A Climate Change Story*. Haymarket Books, 2011.

Kivalina's coastal erosion is aggravated by coastal ice forming later in recent years than it had in the past — historically, coastal ice has acted as natural erosion protection, and the community is now more susceptible to erosion from storms for a longer period. [...] Extreme damage is expected within 10 years.³⁴⁹

Ice protected the coast 'historically'. But this ambiguous time span can only refer to data from the last decades. In fact, the oldest shoreline in the visual timeline presented in the report dates back to 1975 (Fig. 105). The USACE claim is partially misleading as the history of the people of Kivalina did not even start in 1905, but several thousand years back in time.³⁵⁰ In that sense, and contrary to the report's statement, it can be argued that there is indeed no 'historical' data that can scientifically prove to what extent ice formation on the coast has been changing over centuries or millennia, but only contradictory oral accounts.³⁵¹ In short, the government that settled the people of Kivalina on the coast came to the conclusion a century later that their chosen site was not adequate for permanent inhabitation. In a pre-1905 setting, the people's nomadic 'resilience' would have responded to the 'problem' by migrating to a more winter-favourable site (Figs. 106-110). However, many of the skills that the Inupiaq used to have to move and migrate have been lost. Forced settlement replaced hunting, fishing, and foraging knowhow with dependence on federal poverty subsidies. Throughout the last century, the residents of Kivalina have tried to relocate their village numerous times to a more favourable site, but each attempt has resulted in conflicting interests and federal cost-benefit analyses all weighing against the inhabitants' efforts.

In 2008 Kivalina became an international reference for a climate refugee community – a problematic term that, despite highlighting their power to resist, nonetheless victimised them even further.³⁵² They successfully pressed charges against the 24 largest oil and gas companies in the world, holding them accountable for the global carbon emissions eroding their barrier island (Fig. 111-113). Despite increasing the visibility of their cause, the case was later dismissed in the Ninth Circuit, on the basis that the extent of global pollution affecting climate-related erosion at a local scale was rather a matter of political debate in Congress, and not in court.³⁵³ Environmental responsibility was offset in the same way that the Kivalina shoreline and safety buffer zone had been. The Corps' 2009 report not only put the community of Kivalina at risk, but it also appropriated ambiguity to turn the whole shoreline into an object under threat, able to mobilise million-dollar mitigation and relocation efforts. To a certain degree, people became figures that mattered less than boundaries: residents turned into instruments for authorising mega-scale engineering efforts to keep the line in (a certain) place. Future projections of how the shoreline was expected to move in the immediate future were crucial in the imagination of various catastrophic scenarios.

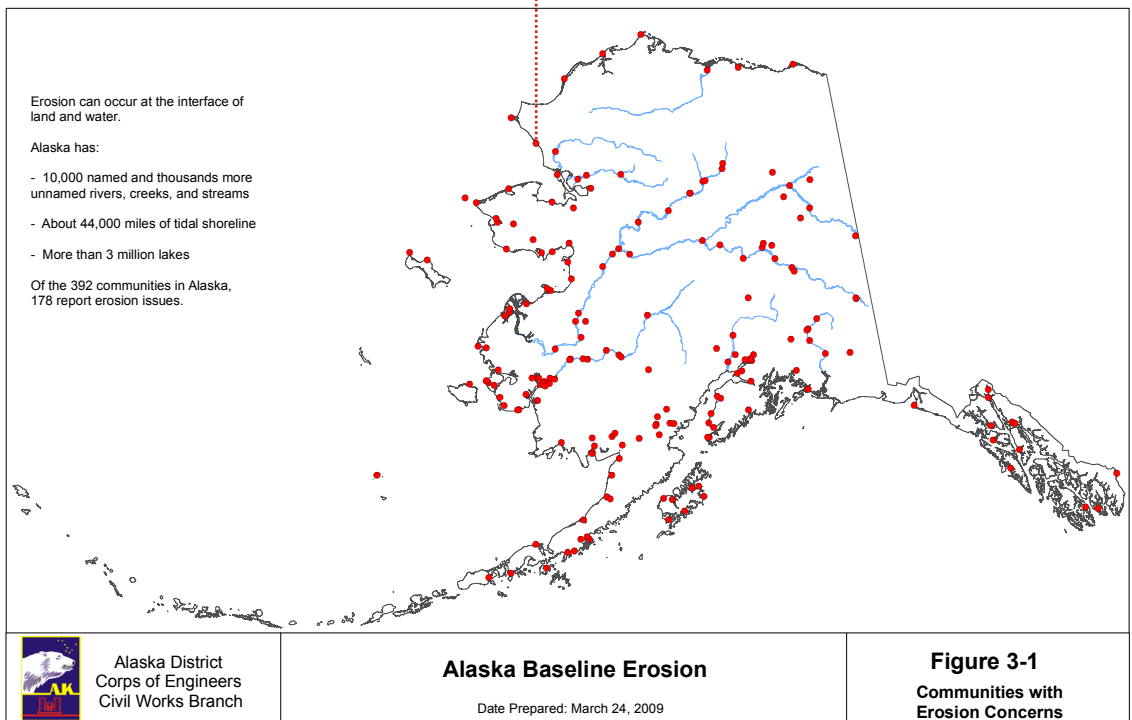
³⁴⁹ 'Alaska Baseline Erosion Assessment: Study Findings and Technical Report,' USACE, Alaska, March 2009: 44.

³⁵⁰ Earliest archaeological records consist of Inupiaq coastal burials dating back to BC500.

³⁵¹ Residents of Kivalina in discussion with the Modelling Kivalina working group, July 2013.

³⁵² Robin Bronen, *Climate Induced Displacement of Alaska Native Communities* (Anchorage, Alaska: Alaskan Immigration Justice Project) January 30, 2013. Kivalina has continued to appear not only in the media, but also in the visual arts field, through Gina Abatemarco's film *Kivalina* (2016).

³⁵³ *Native Village of Kivalina v. Exxon Mobil*, Court of Appeals for the Ninth Circuit, San Francisco, 28 November 2011, <http://www.ca9.uscourts.gov/media>.



103: Aerial view of the island of Kivalina, AK. Landing in July 2013.

104: Communities with Erosion Concerns map by the US Army Corps of Engineers, as included in the 2009 Alaska Baseline Erosion Report.



105: Predicted and Historical Receding Shorelines: 1975, 1990, 1997, 2000, 2010, 2020, and 2030. Source: USACE, 2009 Alaska Baseline Erosion Report.



As part of the practice-based research process, in 2012 the working group 'Modelling Kivalina' was set up to investigate the challenges of relocation.³⁵⁴ Our five-member team travelled to Kivalina in the summer of 2013, devising a method of three-way modelling for the process:³⁵⁵

- a. First, an actual model of the island was built using detachable items (individual houses, property lots, geological layers, pieces of infrastructure, and shoreline projections). This served as a conversational device in interviews to make people position themselves on the terrain.
- b. Second, the model itself was used in real time to understand the distortions of the territory and each interviewee's involvement in Kivalina. Every interviewee would break the model apart and sometimes expand it with additional elements made ad hoc.
- c. And third, to diminish any perceptions of patronising foreigners coming with solutions, the project instrumentalised that privilege to access the offices of governmental bodies and map bureaucratic views on the conflict. The project proposed Kivalina as a model for other coastal communities dealing with climate change and the mitigation of coastal erosion.

With this three-tiered approach the project aimed to understand the complexity of architectural, political, and environmental forces shaping the potential disappearance of the barrier island of Kivalina. It investigated the agents involved in speculation on the littoral and the incarnation of the shoreline as an assemblage of power. The fieldwork consisted of 35 interviews with institutions such as the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the Department of Environmental Conservation (DEC), the Red Dog Mine corporation operating in the area, the Northwest Iñupiat Housing Authority (NIHA), the Northwest Arctic Borough (NWAB), the Alaska Federation of Natives, as well as residents of Kivalina, local leaders, elders, educators, and children. The modelling process was designed to incorporate past, current, and future visions of the changing landscape (Figs. 114, 115).

Modelling conversations elicited two primary reactions, one from external bureaucrats in the city and the other from residents of Kivalina. From the perspective of bureaucrats in the city, arriving at a federal office with a 100cmx70cm box was both perplexing and exciting. Once the model was laid out on their meeting tables, the room acquired a new atmosphere, beyond the conventions of everyday meetings. The conversations always began by asking interviewees to situate themselves in the model, putting them on uncomfortable ground. Without accusing or questioning their role or degree of involvement in Kivalina, it became clear where and at which level they operated, their relationship to the field, and their physical engagement or distance to the context. As interviewers, we let them speak and interact with the fragmenting pieces. Bureaucrats working on mitigation assessments could barely situate houses, individuals, shorelines, or buildings. The space of Kivalina in the model was too detailed for their understanding of the territory, which is instead based on numbers and figures that add up to financial subjects at risk. Barely any civil servant in Anchorage touched on the geological layers of the underground (the shoreline, sediments, sand, clay, permafrost), despite those layers

³⁵⁴ Invited by Re-Locate, an independent initiative by Alaskan architect Michael Gerace and lawyer Jennifer Marlow, The Modelling Kivalina working group consisted of Andrea Bagnato, Daniel Fernández Pascual, Helene Kazan, Hannah Meszaros-Martin and Alon Schwabe.

³⁵⁵ See Project Dossier 2.

being at the core of the disappearance of the island and the ‘necessity of its movement’.³⁵⁶ On the other hand, with the residents of Kivalina, the model was not detailed enough. Almost every interviewee needed to increase the detail of the object in order to conduct a conversation about the financialisation of the littoral. The conflict around the future projection of the shoreline and the erosion of their barrier island went far beyond the shoreline itself. The model was simply too small to accommodate the Inupiaq understanding of the territory and the different scales that manage the boundary between land and water. As part of the modelling process, different elements had to be added: nearby rivers, water sources, polluted areas, relocation sites, old nomadic camps, etc. In several interviews, the model spread over the entire floor of the community centre of Kivalina, where the interviews were conducted (and which is approximately 5mx5m in area). Distant, contested sites and many other features of the landscape needed to be part of the conversation around the ambiguity of the shoreline. Furthermore, it soon became apparent that another device to model time was needed, as conversations with Kivalina residents repeatedly referred to how activities used to organise the daily and yearly cycle of the coastal community, and how those were changing with the new freezing point of the coast. Time was key to understand the construction of the spatial boundary. The facts that whales arrived earlier in the year or that special berries ripened later were crucial clues to the changing landscape. Climate alterations were not recorded by technological devices but by alterations in human and nonhuman activities, wrongly called ‘subsistence’ practices.³⁵⁷ A very simple roulette with hunting, fishing, and foraging seasons was produced on the spot to map the shifts in those seasons over the past decades.

According to anthropologist Ernest Burch Jr., in his in-depth analysis of Alaskan Inupiaq communities, seasons were not divided into four rigid, three-month units but into flexible sets in which units were denoted by descriptive terms.³⁵⁸ The seasons of the *Kivalliñigmiut* could be grouped into 21 periods measured by the liquid/solid condition of the shore and the ways they affect human and nonhuman mobility (hunting, fishing, and foraging): when snow starts to melt (*upingagruaq*); when snow gets soft and it is hard to travel on it (*auksalakkaa*); when sea ice breaks up (*siquitkaa*); when sea ice is broken up but floating around (*tuvaiyagvik*); when sea ice is all gone (*sikuigvik*); when ice starts to form (*qinugaa*); or the time just after freshwater freeze (*ukiugaa*). Seasons are not periods between specific dates, but fluid spans that overlap with each other—the season when caribou start growing fur on their horns can start before, during, or after the moment when ice starts to form. The perception of everyday time correlates to the events changing the surrounding space. The littoral in Kivalina is not based on a financial risk or mitigation line, but an incredibly large buffer zone, whose extent and variability determine human and nonhuman mobility, and the acquisition of food.

³⁵⁶ The model had an additional layer of snow that could cover the entire island and surrounding waters as a solid continuum. For the people of Kivalina, winter is actually a period of increased mobility, as the surrounding lagoon, lakes, and marshlands freeze and the littoral becomes a solid, vast zone expanding seaward well into the ocean and landward into the tundra. However, none of the bureaucrats interviewed engaged with the liquid, muddy, or solid character of the ground; it felt ungraspable.

³⁵⁷ Enoch Adams in discussion with Modelling Kivalina working group, 17 July 2013.

³⁵⁸ Ernest S. Burch Jr., *Social Life in Northwest Alaska: The Structure of Inupiaq Eskimo Nations* (Fairbanks: University of Alaska Press, 2006), 32.

Apart from the solid or liquid state of the shore, a second outcome of the interviews was an understanding of the shifting timeframes in relation to changing colours. White is not as white as it used to be. Seal skins, no matter how hard they are scrubbed; now stay yellow, always a shade of off-white.³⁵⁹ This could be explained by toxins travelling through the ocean and accumulating in the seal fat via the food chain, or by new substances in the air creating an optical distortion between the human eye and the seal skin. As Susan Schuppli remarks, 'the reflectance properties of snow are governed by individual grain size, impurities, liquid water content, surface roughness, and by the depth and density of the pack'.³⁶⁰ The white of the snow has indeed changed; in some Alaskan villages snow is acquiring a reddish tone, mainly caused by a new microscopic algae bloom that appears due to an accelerated snow melt. The resulting rust colour may be invisible to some, but a trained eye distinguishing shades of white on the frozen water surface can perceive it.

In an interview with environmental engineer and public health researcher Michael Brubaker from the Alaska Native Tribal Health Consortium, he remarked how these perceptions are extremely accurate but hard to detect by conventional scientific devices, as the phenomena require inexistent technologies and metrics to compare datasets.³⁶¹ Popular practices like observation of the blossoming time of wild fireweed can be crucial in the optical investigation of climate change, as its bright pink flowers function like a calendar. The petals fall off in a gradual sequence from the bottom to the tip and when all the flowers are gone, it is common knowledge across Alaska that there are only six weeks left until the first snowfall. Given that these 'natural' countdown systems are extremely useful in the local appreciation of climate variations, Brubaker launched a grassroots mapping initiative in Alaska, the Local Environment Observer Network (LEO), for people to systematically upload these observations from remote areas.³⁶² Active observers detect 'unusual' events such as early blooming plants, late-arriving migratory birds, or the appearance of algae blooms on the coast, all of which can contest governmental and scientific systems of measuring. Such an initiative can expose the failures of Western scientific objectivity by introducing relational approaches from Inupiaq knowledge.

The interviews were synthesised in a comparative analysis by tracking the most used terms, mainly: self-determination, risk assessment, mitigation, disaster, catastrophe, and subsistence. The outcome exposed the ambiguity of the jargon: the same terms had multiple different meanings according to the interpretation or political agency of the interviewee. Both city bureaucrats and residents of Kivalina had to learn each other's language to debate on 'equal' terms; the PR agent from the Red Dog Mine learned how to speak and vocalise perfect Inupiaq guttural language to prove his willingness to engage with locals, while the residents of Kivalina had to learn the language of financialised environments to read and understand the risk and mitigation decisions by the USACE. As Eduardo Viveiros de Castro remarks with his notion of

³⁵⁹ Modelling Kivalina, 'The Coming Storm,' in *Forensis: The Architecture of Public Truth*, ed. Forensic Architecture (Berlin, Sternberg Press, 2014): 707-708.

³⁶⁰ Susan Schuppli, 'Can the Sun Lie?', in *Forensis*, op. cit., 60-61.

³⁶¹ Michael Brubaker in discussion with Modelling Kivalina working group, 29 July 2013.

³⁶² 'LEO Network,' accessed 1 July 2017, <https://www.leonetnetwork.org/en/map>

controlled equivocation, the question is how we can restore the analogies traced by indigenous peoples within the terms of our own analogies; or rather, what happens to our comparisons when we compare them with indigenous comparisons.³⁶³ Far from translation mistakes, the different understandings of the same term result from two opposing cosmologies, which fail to negotiate two different perspectives as if they were one. In sum, the multi-scalar coastal erosion and flooding was not a matter of rising sea levels, but about the construction of the shoreline as a set of equivocal understandings of self-determination, civil justice, mental health, food security, inhabitation, and 'subsistence' in the Arctic—that more than redefined, are yet to be decolonised.

The critical outcome of the fieldwork for this thesis is revealed in one of the interviews with coastal engineers Harvey Smith and Ruth Carter from the Department of Transportation in Anchorage. Interestingly, they remarked how Spain is one of the most advanced countries in the world for coastal management and public access to the coastline.³⁶⁴ And yet, it could be argued that both Spanish and the US shores share many similarities in the mismanagement and conflicting interests around the need for infrastructure. Scientific objectivity in environmental impact assessment reports is mobilised in both contexts through neoliberal governance, and have resulted in cases where decisions are being indirectly driven by profit margins. A lawsuit from 2007 proved that the USACE had miscalculated a \$112 million flood control scheme in Missouri, and required the USACE to demolish the new levee-and-pump infrastructure as the original economic rationale depended on a mathematical error, and the 'newly protected' town would flood just as often.³⁶⁵

As part of the executive summary of the 2009 Alaska Baseline Erosion report, the Corps complained that due to their recent loss of power and autonomy, the possibility for mitigation in Kivalina was uncertain. In other words, the USACE stated that their loss of autonomy in managing funds was putting Kivalina even more at risk, as they could not ensure a successful delivery of mitigation programmes.³⁶⁶ That tension between the need for infrastructure and the power to manage budgets was pivotal to the demarcation of the shoreline in Kivalina. The interview with Smith and Carter unveiled a complex network of economic interests embedded in the 2009 report that had led to multi-million-dollar investments in risk mitigation, technical studies, geological analysis testing the adequacy of relocation sites, and engineering proposals for evacuation roads. The relocation cost of the village was estimated at the time in approximate \$400 million. If divided by the number of residents in Kivalina, this implied \$1 million in spending per relocated individual. Given that no Federal or State agency was granted to appropriate the funds for relocation, these conditions have been pushing the village into an ontological crisis.³⁶⁷

³⁶³ Eduardo Viveiros de Castro, 'Perspectival Anthropology and the Method of Controlled Equivocation,' *Tipiti: Journal of the Society for the Anthropology of Lowland South America* 2, 1 (2004): 2.

³⁶⁴ Harvey Smith in discussion with Modelling Kivalina working group, 30 July 2013.

³⁶⁵ Michael Grunwald, 'Reining in the Corps of Engineers', *Time*, 20 September 2007, <http://content.time.com/time/nation/article/0,8599,1663903,00.html>

³⁶⁶ 'Alaska Baseline Erosion Assessment: Study Findings and Technical Report,' USACE, Alaska, March 2009: 12.

³⁶⁷ Joshua Griffin, *Becoming Rigid: Resilience, (In)flexibility, and the Colonial Transformation of Environmental Risk in Kivalina, Alaska*. University of Washington, 2013.

Before the relocation estimates started to exponentially rise and the shoreline became increasingly risky, it was the budget for the USACE that was under threat.³⁶⁸ After federal funding cuts, it was apparent that accelerating the impact of climate change could increase the need for 'urgent' funding allocation. The future projections of the shoreline and the assessment of coastal erosion, Smith and Carter remarked, had been exaggerated through a series of intentional miscalculations that excluded neutralising processes of accretion:

To do the baseline erosion analysis [the USACE] had unskilled, not well-specialised, uneducated people, and they went out to the villages and asked: 'Are you experiencing erosion?' And everyone said, 'Yes, of course'. And they don't go out and ask, 'Are you experiencing accretion?' In fact any time they found accretion they didn't know what to do with it, so they threw it out as bad data. Even villages, which had greater accretion than erosion, showed up as being eroded.³⁶⁹

Despite misinformation and miscalculation, a planning study used those precise data sets for engineering decisions. The economy around climate change was channelled through scaremongering and the imminent threat of the eroding coastline. Apart from discarding 'bad data', the Corps distorted the littoral, exaggerating the risk coefficient in equations to calculate the future shoreline.³⁷⁰ Despite acknowledging the error in internal communications with Smith and Carter, it was never corrected in the public report. Smith and Carter unveiled the false attribution of damage as only a product of water, as State Farm Insurance had done by agreeing to insure only wind damage. As Smith stated, the Corps had not studied how the sand moves; they assumed it was all moving south, regardless of the fact that sand moves south in spring and summer, but north in the fall.³⁷¹

The Corps secured work for themselves in the future, as their declaration of 'priority action' in villages at 'imminent risk' would require them to test relocation strategies: seawalls, revetments, sand placements, erosion control assistance, and reports like the aforementioned 2009 Kivalina baseline erosion document. The economy of assessment and consensus building requires the menace to be kept alive. It is interesting to note that the US, despite being the archetype country for privatisation of services, has a public institution conducting environmental reports; whereas, Spain, often acclaimed for its public services, is subcontracting environmental impact assessment reports out to private companies. Indeed, the USACE needs constant threats, risk, and erosion processes to perpetuate imminent disaster to assert the necessity of that public institution. The USACE's systematic use of catastrophic language, as opposed to the use of

³⁶⁸ 'There was a lot of money dumped into this whole thing [the Alaska Baseline Assessment and Coastal Control Action] and there is no money in a simple solution. The USACE is this huge hungry beast that is not being fed very well right now, with all the cuts in Congress and such.' Harvey Smith and Ruth Carter in discussion with Modelling Kivalina working group, 30 July 2013.

³⁶⁹ Ibid.

³⁷⁰ Transcript – Harvey Smith: [T]here were some errors with the storm surge of 16 feet for Kivalina for the 100-year event. The Corps said a 100-year event was 16 on a computer model. [...] So we challenged the Corps, and they said: 'Oh, we had a coefficient of 2 where we should have just had 1. So they cut theirs in half. Ruth Carter: In the meantime, 16 was published.

HS: The report was published, saying that you're gonna be totally wiped off from the face of the earth, in a 50-year event. The truth is, with a 100-year event they are still not gonna be flooded [...] And they more or less agreed, but said 'We are not gonna change it'...

RC:...unless you give us money.

³⁷¹ 'When I studied the direction of sand, the Corps, all of their studies, nobody ever really did a study of the sand, surprisingly. But they assumed that the sand was all moving south. But I found no, [...] it moves south in spring and summer; fall, it moves north. [...] But the assumption was that that movement was south.' Harvey Smith in discussion with Modelling Kivalina working group, 30 July 2013.

'potential', 'possible', or 'probable' to refer to the likelihood of those same events intensifies the need for rapid response. According to Smith and Carter, out of the 26 Priority Action Communities, only one was consistently eroding; the other 25 were subject to erosion-accretion cycles that did not necessarily prove negative growth in absolute terms, as coasts naturally recede and expand (Figs. 116, 117). In fact, in areas like Juneau and Anchorage, the rate of sea level rise is decreasing.³⁷² Hence, it is not always appropriate to use catastrophic terms to refer to the coast of Alaska as a whole.

It is important to note that Smith and Carter are not climate change sceptics or deniers, but have a critical approach to the instrumentalisation of climate change data to generate profit out of coastal catastrophes. The ways in which financial capital constructs space rely on the creation of fear, risk, and disaster. That violence not only infringes on the landscape, but also has serious and detrimental effects on coastal dwellers, as the exponential increase in mental health-related illnesses has shown.³⁷³ Therefore, the case of Kivalina epitomises the ways in which the shoreline is engineered and demarcated to accommodate the increasingly profitable global economy of risk mitigation. The USACE programme managed a peak budget of almost \$50 billion in 2008 (cut to \$20 billion in 2016), has territorial divisions in every ocean, and is present in 43 countries through a variety of 'globally responsive infrastructural missions' that 'deliver vital solutions to energise the US economy'.³⁷⁴

Kivalina offers a unique case study to understand the financialisation of the coastal environment as a new political frontier for climate speculation. The liminal condition of the littoral serves to reveal a power structure that offsets both space and environmental damage and that values economic advantage over quality of life. Despite their radically different contexts, climate speculation in Kivalina and real estate speculation in Spain share many characteristics. In the context of both the post-Hurricane Katrina and the flood risk plan in Kivalina, the shoreline was pushed further inland based on a matter of urgency, interest, and security. In the context of the Spanish coast, the shoreline is constantly fluctuating in its demarcation in court, based on a matter of environmental preservation and a climate-sensitive response. This all lies at the core of water-critical landscapes or what Eyal Weizman frames as a 'conflict shoreline'.³⁷⁵ Tidal zones have become the contested frontier in the architecture of climate mitigation and new power structures that collide with pastoralist and nomadic constructions of space. On top of human displacement, disappearance of biodiversity has become another tool to push coastal boundaries back and forth to keep capital circulating. Financially built environments rely more and more on scientific calculus and a need for lines that do not exist, and yet, are meticulously constructed.

³⁷² Ruth Carter in discussion with Modelling Kivalina working group, 30 July 2013.

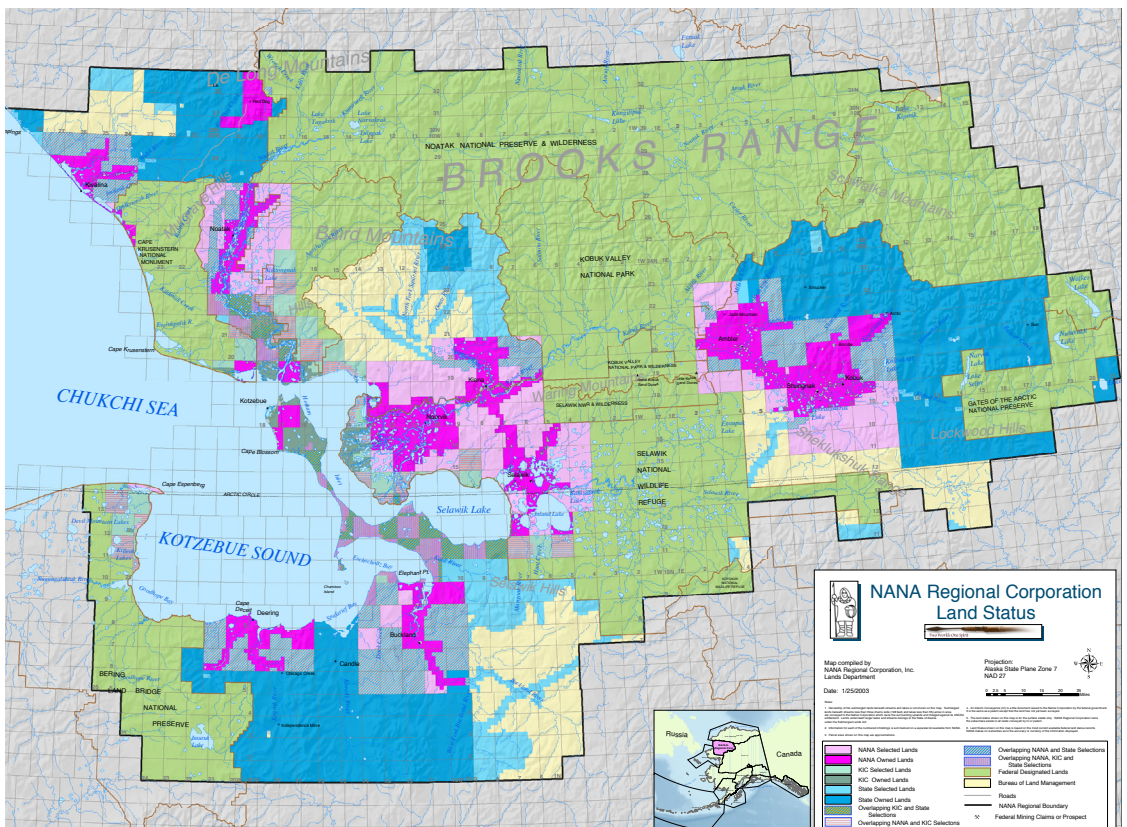
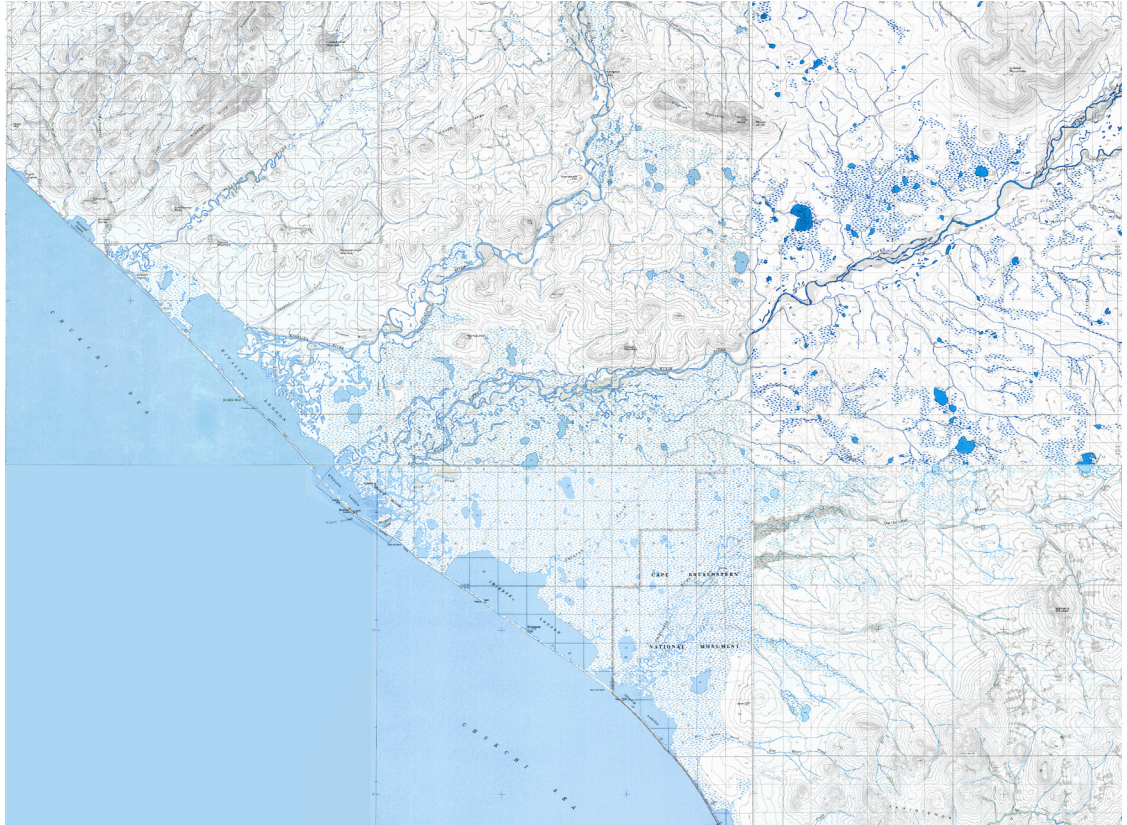
³⁷³ Michael Brubaker et al., 'Climate Change in Kivalina, Alaska: Strategies for Community Health,' *ANTHC Center for Climate and Health, Alaska*, 2011, 24-28.

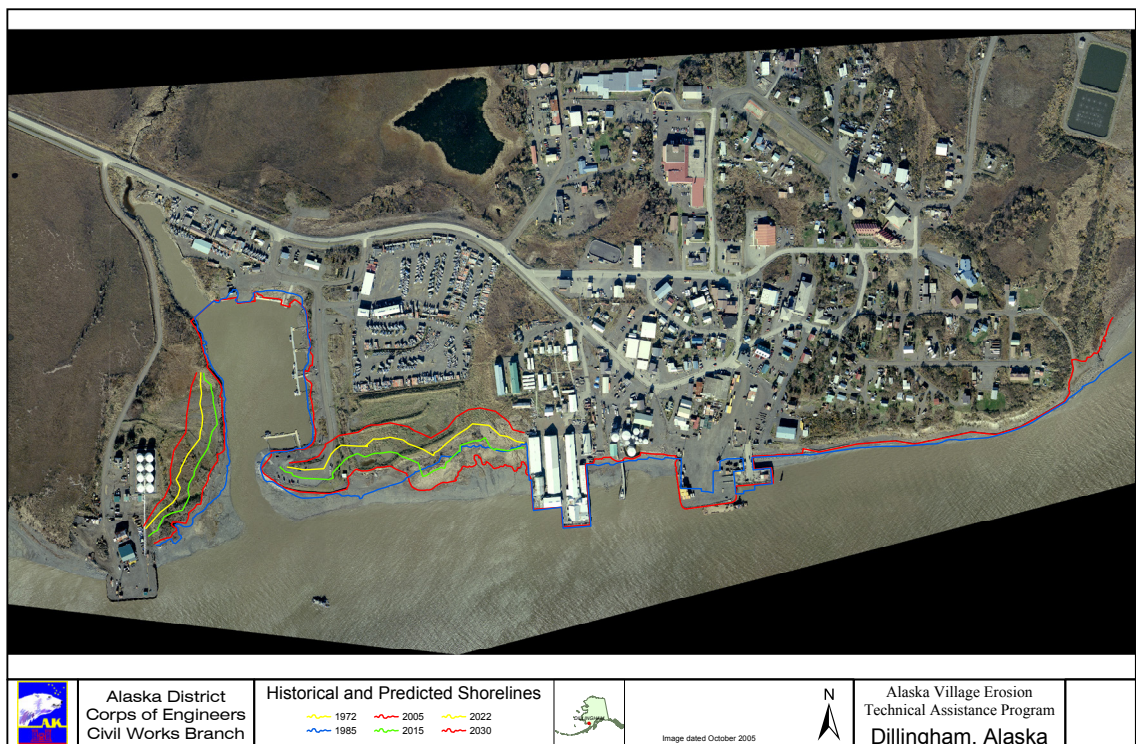
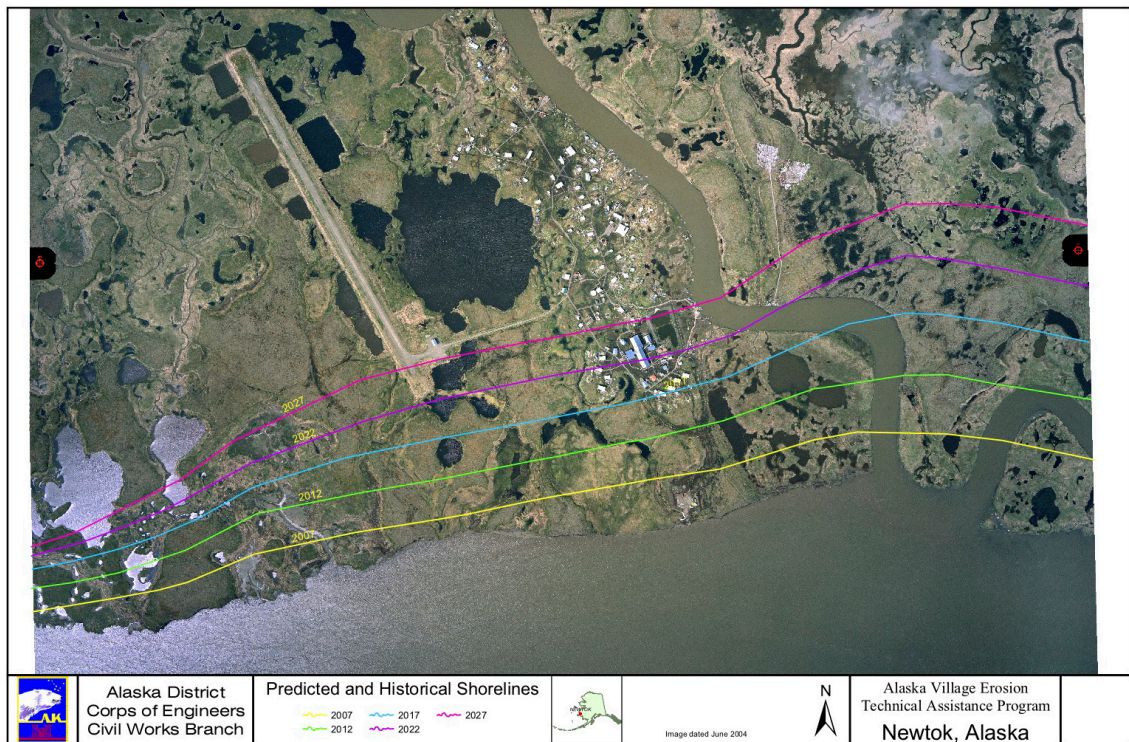
³⁷⁴ 'US Army Corps of Engineers,' September 2014, http://www.usace.army.mil/Portals/2/docs/USACE_101_Sep_2014.pdf

³⁷⁵ Eyal Weizman, *Erasure: The Conflict Shoreline* (Göttingen: Steidl, 2014), 8-10.

114: USGS, Kivalina and surroundings. 2013 (top)

115: Demarcation of land rights in Kivalina and surroundings, NANA Regional Corporation Land Status, 25 January 2003. NANA is one of thirteen Alaska Native Regional Corporations created under the Alaska Native Claims Settlement Act of 1971 (ANCSA) in settlement of Alaska Native land claims. (bottom)





116-117: Predicted and Historical Receding Shorelines in Newtok and Dillingham, AK.
Source: USACE, 2009 Alaska Baseline Erosion Report.

2.3 Quantifying Space: Offsetting and No Net Loss

Contrasting government speculation on the future of climate to private speculation on the financial value of nature, a more important question is raised: how can the coast, a quintessentially nebulous landscape, be at the core of hyper-accurate financial quantifications of space. Appointed 'Nature's banker' by *The Economist* in May 2008, Mark Tercek, after 24 years at Goldman Sachs, became the CEO of The Nature Conservancy, the biggest environmental nongovernmental organization in the world.³⁷⁶ He shifted from being one of the primary sources for underwater mortgages in the housing crisis to investing in the preservation of the environment. In short, he went from speculating on housing to speculating on nature.

But why is an investment banker trying to save nature? Tercek brings conservation and natural capital together in his bible for venture ecologists *Nature's Fortune: How Business and Society Thrive by Investing in Nature*.³⁷⁷ Following the logic of real estate speculation, natural capital does not exist on its own, but it has to be built.³⁷⁸ Tercek's views are crucial for understanding the invention of natural capital as a form of spatial offsetting and the manipulation of boundaries: 'We need to get business, government, and individuals to understand that nature is not only wonderful, it is also economically valuable [...] Once everything has a price, the price creates an incentive to conserve'.³⁷⁹

Tercek was not alone in redirecting himself toward extracting value through compensatory mitigation practices. Pavan Sukhdev left his position as Head of Global Markets for Deutsche Bank in India to become UN Ambassador for the Environment. John Fullerton, former managing director at JPMorgan, founded the Capital Institute in 2010 'to explore and affect the economic transition to a more just, regenerative, and thus sustainable way of living on this earth through the transformation of finance'.³⁸⁰ Fuller also became the Co-Founder and Director of Grasslands LLC, a holistic ranch management company, as well as the Director of New Day Farms Inc. Hank Paulson, former CEO of Goldman Sachs and former US treasury secretary under George W. Bush, facilitated a donation of 680,000 acres of (unsellable) wilderness in southern Chile from Goldman Sachs to the Wildlife Conservation Society to enhance its green credentials among shareholders.³⁸¹ Its long-term security and the way it affects local democracies remain both uncertain, as there are no such precedents of private protection of the public interest.³⁸²

Natural capital not only creates new financial products associated with the environment, but it is also key in the construction and destruction of wetlands. As part of the neoliberal project of

³⁷⁶ 'Nature's Banker,' *The Economist*, 13 July 2013, <http://www.economist.com/news/business-books-quarterly/21581710-lessons-nature-conservancy-natures-banker>; 'Green is Good,' *The New Yorker*, 12 May 2014, <http://www.newyorker.com/magazine/2014/05/12/green-is-good>

³⁷⁷ Mark R. Tercek and Jonathan S. Adams, *Nature's Fortune* (New York: Basic Books, 2013), Introduction.

³⁷⁸ Ibid.

³⁷⁹ Ibid.

³⁸⁰ 'Capital Institute,' accessed 28 May 2017, <http://capitalinstitute.org/director/john-fullerton/>

³⁸¹ 'US Bank Donates 680,000 Acres in Tierra del Fuego,' *MercoPress*, September 12, 2004, <http://en.mercoPress.com/2004/09/12/us-bank-donates-680-000-acres-in-tierra-del-fuego>

³⁸² Emily Wakild, 'Purchasing Patagonia: The Contradictions of Conservation in Free Market Chile,' in ed. William L. Alexander, *Lost in the Long Transition: Struggles for Social Justice in Neoliberal Chile* (Lanham: Lexington Books, 2009): 112-125.

financialising space, wetland policy in the US has been guided by George H.W. Bush's notion of 'no net loss' since the late 1980s. The policy was developed to protect the net quantity of wetland in the US, which has made them crucial to the urbanisation of both inland and coastal landscapes. The development of any housing complex, railway infrastructure, flood defence, military complex, urban settlement, or tourist resort that destroys natural habitats has to be balanced by the restoration of an 'equivalent' landscape elsewhere. For each acre of lost wetland, there should be at least one acre created or restored. Hence, the net amount of biodiversity is meant to remain 'the same' in terms of surface area, quality, or quantity: a new suburb built on a drained millenary wetland in California can be environmentally neutralised by restoring a comparable wetland elsewhere in the state.

By definition, offsetting credits are the unit of environmental commodity to be traded. The unit can be a spatial dimension, like the area occupied by a certain landscape, or a functional measure, such as cubic meters of dry-season flow augmentation.³⁸³ In this ecological paradigm, where destruction is qualified as unavoidable, loss is accepted as an irremediable collateral damage to urbanisation and progress, but rendered 'least of all possible evils' by changing the perception of 'yes loss' into 'no net loss'.³⁸⁴ Therefore, the No Net Loss policy poses a twofold problematic: it is legitimate to accept a loss, and that loss can be *nettified*. In sum, the logic of compensation legitimises damage. In such a scenario, architecture acquires the agency to destroy, displace, and replicate natural landscapes miles away from their current location. The offsetting of both space and responsibility jumps to the forefront of a mode of governance, where ambiguity encourages further circulation of profit and margins.

In the same decade that No Net Loss policy emerged as a form of extracting value speculating from the environment – based on entirely unscientific calculations of return – the concept of 'biodiversity' and 'sustainable development' also appeared in financial ecology. In the 1980s biologists shifted from providing facts about the natural world (already social constructions themselves) to start speaking of nature's 'values'.³⁸⁵ There are many ways of valuing, but unlike the concept of wilderness, the moment 'natural variety' appeared it easily became a commodity that could be exchanged, lost, gained, depleted, restored, quantified, and scientised.³⁸⁶ Metaphors such as 'balance of nature' and 'diversity yields stability' disguise poor understandings of ecology.³⁸⁷ The biodiversity crisis relies on the human appreciation of value, as no conservation group has mourned, for instance, the extinction of the wild smallpox virus.³⁸⁸

Wetland offsetting and the financialisation of biodiversity became even more profitable with the 1997 Kyoto Protocol, when the first carbon offsetting schemes were formalised (Fig. 153). Air pollution in the Global North was accepted as a lesser evil of modernisation if compensated with

³⁸³ Genevieve Bennett, 'Alliances for Green Infrastructure: State of Watershed Investment 2016', *Ecosystem Marketplace*, 15 December 2016, <http://forest-trends.org/releases/p/sowi2016>

³⁸⁴ Eyal Weizman, *The Least of All Possible Evils* (London and New York: Verso, 2011).

³⁸⁵ David Takacs, *The Idea of Biodiversity: Philosophies of Paradise* (Baltimore: Johns Hopkins University, 1996), 5.

³⁸⁶ *Ibid.*, 27.

³⁸⁷ *Ibid.*, 107.

³⁸⁸ *Ibid.*, 38 and 63.

'sustainable' afforestation programs in the Global South to 'enhance global biodiversity'. Offsetting projects planting forests turned environmental guilt into a tradable commodity. Some of the ethical contradictions were obvious, as in one of the first post-Kyoto offsetting projects, where the US-based Applied Energy Services promised to plant millions of trees in Guatemala in exchange for permission to construct a large, coal-burning power station.³⁸⁹ This project, they calculated, would absorb as much carbon dioxide from the environment as would be produced by the power station over its lifetime.

Carbon offsetting is not only about CO₂ mitigation. Assigning figures and drawing boundaries can automatically displace pollution to a different part of the planet. Citizens and corporations are increasingly *consuming* social responsibility; they are attempting to ensure their consumption – of goods and values – becomes a means of meeting their 'social responsibilities'.³⁹⁰ Indeed, the ways in which any carbon footprint is neutralised through corporate social responsibility only exacerbates the still-colonial relationships between the rich and the poor, between high carbon-emitting nations right to pollute and low carbon-emitting nations obligation to cleanse. As in the case of Kivalina's shoreline, the spaces involved in environmental reparations often have a colonial past that affects the balance of power.³⁹¹

In the name of the planet's safety, environmental threats are producing a new form of neoliberal space. As part of the global risk landscape, fear is also calculated according to the severity of its economic damage. In the 2010 World Economic Forum, coastal flooding was evaluated in the range of \$1 trillion damage potential, while biodiversity loss was in the range of \$10-50 billion, similar to international terrorism.³⁹² Only five years later in the 2015 forum, environmental threats had clearly become a much larger concern, whereas the subprime mortgage crisis had almost disappeared from the list.³⁹³ The failure of urban planning was demoted to the lowest ranking (the least risky and least likely), whereas the failure of climate change adaptation was at the top, together with weapons of mass destruction, biodiversity loss, and ecosystem collapse. This indicates how finance is to a certain extent less interested in the making of cities than in trading ecosystem services. It exposes the decreasing agency of urban planning in designing 'resilient' spaces, which in turn should urge the architectural discipline to rethink urban planning at large and question why the making of buildings has become less relevant to global finance than disappearing species.

In the contest between the construction of infrastructure and the preservation of ecology, environmental reports could be the basis for a new speculation bubble. Similar to the way in which State Farm works simultaneously as broker and consultant, top world banks, like

³⁸⁹ 'History of Carbon Offsetting and Carbon Trading,' EBSCOHost, accessed 18 June 2017,

<http://connection.ebscohost.com/science/carbon-offsetting/history-carbon-offsetting-and-carbon-trading>

³⁹⁰ Ezra Rosser, 'Offsetting and the Consumption of Social Responsibility,' *Washington University Law Review* 89, 2011: 28-29..

³⁹¹ Melissa Leach and Ian Scoones, *Carbon Conflicts and Forest Landscapes in Africa* (New York: Routledge, 2015), Introduction.

³⁹² World Economic Forum 2010, in Jessica Dempsey, *Enterprising Nature: Economics, Markets, and Finance in Global Biodiversity Politics* (Oxford and Malden: John Wiley & Sons Ltd, 2016), 127.

³⁹³ *Ibid*, 156.

Rabobank, loan money to agribusinesses deforesting the Amazon while selling them mitigation credits in afforestation projects.³⁹⁴ That double agency, far from being perceived as a conflict of interest, puts profit-making institutions in the position to teach sustainable ecological practices to profit-seeking corporations. In *Enterprising Nature*, Jessica Dempsey developed a taxonomy of actors operating in the market of biodiversity offsets to understand the role of ‘enlightened investor’ seeking win-win-win situations (biodiversity, development, and profit). She subdivided investors as ‘natural species’ according to their ecology-building capacity. In her ethnography of biodiversity market conferences, participants – who happen to be mostly white and Western, and whose natural habitats are conference rooms, cities, and airports – played different roles in redefining nature following sets of environmental services.³⁹⁵

From the origin of No Net Loss to profiting from bioassets and local livelihood, what is emerging appears to be a new green space race. Eco-utilities and forest bonds are some of the instruments that are boosting the neoliberal quantification of space and determining how to classify and demarcate it. However, the main challenge for this form of speculation is how and whether to make offsetting calculations standard and universal. In order to securitise ecology, the ambiguity of demarcation would have to rely on standard measurements. Pierre Bourdieu stated that there are three forms of capital: economic, social, and cultural; they can be translated from one category to the other by means of economic conversions.³⁹⁶ He did not mention a form of investment coined after the 1973 oil crisis, when the accessibility of fossil fuels was under threat for Western powers. It was then that Ernst Friedrich Schumacher enunciated the idea of *natural capital*, which was picked up again by Paul Hawken, Amory Lovins and Hunter Lovins at the end of the twentieth century and expanded into the notion of *natural capitalism*.³⁹⁷ They framed it within the notion of eco-efficiency – how to make sense of nature by making money – and by arguing that environmental sensitivity is so necessary to shareholders that for the sake of business, corporations should be careful not to miss out.³⁹⁸

Natural capitalism did not refer to capitalism as being a *natural* phenomenon to humanity, as it was misunderstood at the time, but as something embedded in the trading of nature. This vision implies that nature has its own assets waiting for human stewards to make the most of them. In the aftermath of the 2007 financial crisis, after Tercek and others started to translate the idea into what could become a new bubble, 39 global financial institutions signed the Natural Capital Declaration (NCD), establishing natural capital as an overarching financial framework in 2012. This coalition of interests made the connection between the construction of nature and the creation of value more explicit when they changed name to the ‘Natural Capital Finance Alliance’ (NFCA) to better represent ‘how they engage and collaborate with financial institutions

³⁹⁴ Ibid, 171.

³⁹⁵ Ibid, 167-178.

³⁹⁶ Pierre Bourdieu, ‘The Forms of Capital’, in *Handbook of Theory and Research for the Sociology of Education*, ed. John G. Richardson (New York: Greenwood, 1986), 241-242.

³⁹⁷ Ernst Friedrich Schumacher, *Small is Beautiful: A Study of Economics As If People Mattered* (London: Vintage Books, 1993), Introduction; Paul Hawken, Amory Lovins and Hunter Lovins, *Natural Capitalism: Creating the Next Industrial Revolution* (Boston, London and New York: Little, Brown & Co, 1999), Preface.

³⁹⁸ Ibid.

and better understand natural capital risks, pursue opportunities and establish the foundation for resilient long-term economic growth that protects nature and societies'.³⁹⁹

Extracting capital from nature requires a slightly different language from the negative scaremongering of disaster mitigation or raising awareness about endangered species. Instead, natural capital and biodiversity markets offer a more positive battle that sees restoration as a moral imperative. It highlights potential benefits rather than mourning effective losses. In order to attract shareholders and investors, key species or landscapes come to the fore, but it is not the most iconic and charismatic species that mobilise mitigation actions (such as the more public campaigns to protect endangered elephants, pandas, or blue whales on the verge of extinction). It is mostly 'ugly' and 'unpopular' creatures, many amphibious, who are the new protagonists of speculation on natural capital investments. Species, but also spaces, that are hard to define, unappealing, and 'non-exotic' to the populist Western eye like rats, worms, frogs, fungi, insects, and bacteria, and impenetrable, uninhabitable, degraded spaces like swamps, vernal pools, wetlands, marshes, and mangroves.

Despite not being popular in Western 'zoo culture', these 'useless' species and 'unproductive' spaces are the most efficient and diverse actors in providing environmental services to speculate on. Their environmental restoration capacity is such that their multi-scalar effect on the biodiversity chain can provide even further economic exchange. Furthermore, the reason why such liminal creatures and spaces provide the largest profit margin can be attributed to the ambiguity of their circumstances: they can accommodate multiple properties and characteristics at the same time, precisely because of the impossibility to measure their extent or clearly classify their actions: they inhabit both land and water, brackish and fresh, above ground and underground, dark and light, aerobic and anaerobic realms. They exist at boundaries and are adapted to either side of a limit.

Quantifying the contribution of wetlands to the environment is highly contestable, as no scientific metric system has been formulated yet. The accumulation of value around landscape units, especially in the American context, is still at odds with the ways in which environmental services are taking advantage of it. Paradoxically, even if restoration programs and protection areas have rapidly expanded, the net loss of wetland acreage has considerably increased and wetlands are more endangered today than they have been for decades.⁴⁰⁰ As an example of such regulatory failures, a project appraisal undertaken in Oregon found that for 58 permits issued between 1977 and 1988, which degraded 74 ha of wetland, only 42 ha of wetland were actually created.⁴⁰¹ Likewise, in Florida, the Department of Environmental Regulation (DER)

³⁹⁹ 'Natural Capital Finance Alliance,' 26 October 2016, <http://www.naturalcapitalfinancealliance.org/2016/10/natural-capital-declaration-changes-name-to-become-natural-capital-finance-alliance/>

⁴⁰⁰ Julie M. Sibbing, 'Nowhere Near No-Net-Loss,' National Wildlife Federation, accessed 18 March 2017, https://www.nwf.org/pdf/Wildlife/Nowhere_Near_No-Net-Loss.pdf; Amos Esty, 'Banking on Mitigation,' *American Scientist* 122 (2007): 122-123.

⁴⁰¹ Mary E. Kentula et al., 'An Approach to Improving Decision Making in Wetland Restoration and Creation,' in U.S. Environmental Protection Agency, *Environmental Research Laboratory*, ed. A. J. Hairston (Corvallis: Oregon, 1992); Stephen Crooks and Laure Ledoux, 'Mitigation Banking As a Tool for Strategic Coastal Zone Management: A UK Perspective', CSERGE Working Paper GEC 99-02, 3.

found out that of 199 wetland creation projects launched under 63 permits between 1985 and 1990, the success rate for tidal and freshwater wetlands was 44% and 12%, respectively.⁴⁰²

It is not entirely clear what the actual acreage of existing wetlands is in the US. Theoretically the Army Corps of Engineers regulatory program quantifies the extent of wetlands permitted to be destroyed and the amount of mitigation required to replace them. However, Julie Sibbing remarks that the problem with the Corps' data is that it accounts for all forms of 'mitigation'. They put together the creation and restoration of former wetlands and the preservation and enhancement of existing wetlands or even upland buffers, which do not always result in actual gains of wetland acreage; for example, if a permit is granted to develop a 10 acre wetland in exchange for 20 acres of existing wetlands that are donated to a park district, the database would show this as a 10 acre gain, when in actuality the result is a net loss of 10 acres.⁴⁰³

Protecting wetlands has in fact accelerated their disappearance, even as the forces of financialisation are masquerading the total as a net positive.⁴⁰⁴ Although the Clean Water Act and the Swampbuster disincentive provision of the Farm Bill protect wetlands in the US, every year thousands of acres of swamps and marshes are legally destroyed and converted into golf courses, shopping malls, and other forms of dry, lucrative ground.⁴⁰⁵ No Net Loss policies are based on a series of misleading concepts that have contributed to this situation: that all the functions and values of natural wetlands can be replaced and that the success of restoration can be evaluated in the short term. But despite the exponential loss of wetlands, there has been a growth of mitigation banks: in 1992 there were only 46 banks in the US compared to 219 in 2001, 450 in 2005, and over 1,800 banks in 2013.⁴⁰⁶

The so-called 'restoration economy' is estimated at \$25 billion and relies on the USACE for the calculation of environmental value and the demarcation of spatial margins.⁴⁰⁷ The case of the Fort Worth District of the Corps in Texas is remarkable for the way in which they implemented the arithmetic of environmental credits. Given that wetlands are more expensive to restore than streams, credit buyers were using wetlands to offset streams and make higher profit margins than using streams to offset streams. The USACE realised that changing the policy to require developers to purchase stream restoration-based mitigation to ensure compliance would result in wetland bankers losing revenues. Therefore, they introduced a new 50-50 rule, whereby half of offsetting credits must come from a stream-based bank, while the other half can come from

⁴⁰² Virginia C. Veltman, 'Banking on the Future of Wetlands Using Federal Law,' *Northwestern University Law Review* 89 (1995): 654-689; Stephen Crooks and Laure Ledoux, 'Mitigation Banking As a Tool for Strategic Coastal Zone Management: A UK Perspective', CSERGE Working Paper GEC 99-02, 3.

⁴⁰³ Julie M. Sibbing, 'Nowhere Near No-Net-Loss,' National Wildlife Federation, accessed 18 March 2017, https://www.nwf.org/pdf/Wildlife/Nowhere_Near_No-Net-Loss.pdf

⁴⁰⁴ Morgan M. Robertson, 'The Neoliberalisation of Ecosystem Services: Wetland Mitigation Banking and the Problem of Measurement,' in *Neoliberal Environments: False Promises and Unnatural Consequences*, ed. Nik Heynen et al. (London and New York: Routledge, 2007), 118.

⁴⁰⁵ Amos Esty, 'Banking on Mitigation,' *American Scientist* 122 (2007): 122-123.

⁴⁰⁶ 'Mitigation Banking Factsheet,' US Environmental Protection Agency, accessed 2 July 2017, <https://www.epa.gov/cwa-404/mitigation-banking-factsheet>

⁴⁰⁷ 'Ecosystem Marketplace,' 8 July 2015, <http://www.ecosystemmarketplace.com/articles/ecological-restoration-25-billion-industry-generates-220000-jobs/>

any other aquatic-based restoration.⁴⁰⁸ The vision of ecology that the USACE put forward consisted in a compromise between the built and the natural environment by drawing a middle line to satisfy both environmentalists and developers.

Another controversial case took place in 2011, when Pioneer Reserve LLC, a wetlands mitigation bank in Alaska, challenged the scientific objectivity of the US Army Corps of Engineers in court.⁴⁰⁹ Its founder, Scott W. Walther, had previously agreed with the USACE that 165.8 acres of the Little Susitna River bank, located in the Matanuska-Susitna Borough outside Anchorage, could be turned into a wetlands ecosystem equivalent to 151.81 mitigation credits. In this case, the Alaska Railroad was looking to purchase credits that would compensate for the damage done by their new lines across the state, legally offsetting their action by conserving the Little Susitna River bank. But the USACE unexpectedly recalculated the numbers a year after the agreement and downgraded the initial 151.81 compensation credits to only 16.92.⁴¹⁰ Given that each credit was initially worth \$79,000, Pioneer Reserve LLC immediately lost \$10.6 million. The Army Corps argued that they had misidentified the type of landscape and, since it was not a binding agreement, they were entitled to reassess the material character of the wetlands. According to their new research, the wetlands were palustrine (meaning that they lacked flowing water), contained ocean-derived salts in concentrations of less than 0.5 parts per thousand, and were actually non-tidal.⁴¹¹

Objectivity in the measurement of the multi-functionality of a wetland and its inhabitants is obviously challenging. However, the problem is not the accuracy of the quantification, but rather the need for another approach that challenges the financialisation of the environment. As Morgan Robertson states, the problem of measurement presumes that there is a priori no room for science as a shifting and constructed set of knowledges, and yet, the degree to which scientists can define nature as a stable external presence is the degree to which it can be rendered as a commodity and sold in markets.⁴¹² Furthermore, not only have banking institutions not settled upon a system of measurement, but they have not even agreed upon what the commodity *is* that they wish to measure.⁴¹³ Standardised functional measurements, known as Rapid Assessment Methods (RAMs), have proliferated since the early 1980s. RAMs are sets of algorithms created by wetland scientists that use easily-measured characteristics (plant diversity or water levels) to make inferences about harder-to-measure 'wetland functions' (habitat provision, peak flow attenuation).⁴¹⁴ These algorithms translate an empirical observation

⁴⁰⁸ 'Ecosystem Marketplace,' 27 March 2017,

http://www.ecosystemmarketplace.com/articles/riverbank/?gclid=CP6v_uWUvdMCFcJAGwodSa4Ofw

⁴⁰⁹ Ellen Lockyer, 'Landbank Lawsuit Aimed at USACE Regs', in *Alaska Public Media*, 15 January 2015,

<http://www.alaskapublic.org/2015/01/15/landbank-lawsuit-aimed-at-usace-regs/>

⁴¹⁰ *Scott W. Walther & Pioneer Reserve, LLC v. United States*, 28 US (2015).

⁴¹¹ Mitchell Williams Selig Gates & Woodyard PLLC, 'Wetland Mitigation Banks: US Court of Federal Claims Addresses Breach of Contract Claim,' *Lexology*, 23 June 2016, <http://www.lexology.com/library/detail.aspx?g=93dbae49-3920-4151-bef7-9af00691e48d>

⁴¹² Morgan M. Robertson, 'The Neoliberalisation of Ecosystem Services: Wetland Mitigation Banking and the Problem of Measurement,' in *Neoliberal Environments: False Promises and Unnatural Consequences*, ed. Nik Heynen et al. (London and New York: Routledge, 2007), 118.

⁴¹³ *Ibid.*

⁴¹⁴ *Ibid.*, 119.

(25% canopy cover) into a score (0.5).⁴¹⁵ In November 1995, the USACE, the Environmental Protection Agency, and three other federal agencies jointly issued a report titled *Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks (Guidance)*.⁴¹⁶ However, the regulation is insufficient for evaluating the multiple and complex relational conditions across nonhumans in a wetland. USACE has chosen to use area, and not function, to quantify impact on a site: functions are measured in the imprecise but easy-to-use proxy unit of the acre.⁴¹⁷

It has become more and more apparent that surface area is inadequate to measure an offsetting operation. Compensatory restoration programmes measured in acres try to replicate the system of equivalent metrics of a tonne of CO₂ pollution in the trading of carbon emissions. However, even carbon offsetting, which is also meant to be an objective calculus, has variable interpretations that depend on the resolution of the ruler. For instance, the amount of carbon that offshore wind farms can offset depends on the accuracy in the calculation of the electricity that is lost in the production or distribution of renewable energy. As electricity losses have different degrees of strength on their route from the production site to the domestic sphere, it is questionable to what extent the kilowatt-hours of energy produced in an offshore wind farm can be objectively converted into exact tonnes of CO₂. It can significantly vary depending on the definition of the efficiency scale, and whether the single windmill or the entire power supply are considered. In an interview with climate bond analyst Claudius Kirchhoff, he acknowledged how global markets generally quantify only primary or secondary losses that take place in turbines; and leave out tertiary losses happening in the distribution networks, which would simply complicate the calculation.⁴¹⁸

There have been many attempts to quantify the units of offsets. The UN Framework Convention on Climate Change (UNFCCC) set standards for carbon trading as a way to solve climate change by offsetting damage. The Convention on Biological Diversity (CBD) tried to do the same. But contrary to the apparent simplicity of carbon schemes, the value of wetlands, biodiversity, and landscape loss is even more intricate to analyse than a tonne of CO₂. Aiming to achieve an accurate system of measurement does nothing but complicate and perpetuate the ethical challenges of valuing nature. Initiatives like the *New York City Street Tree Map*, which map and assess the value of the ecosystem services provided by each of the 683,241 trees in New York City at \$111,083,333.31, not only legitimise the destruction of the environment, but also masquerade it under a community-oriented grassroots initiative.⁴¹⁹ The false idea that they constitute an 'urban forest' is helping developers to greenwash their activity and generates even more profit out of the environment.

⁴¹⁵ Ibid, 119.

⁴¹⁶ Lawrence R. Liebesman and David M. Plott, 'The Emergence of Private Wetlands Mitigation Banking,' *Natural Resources & Environment* 13 (1998): 341-344, 370-371.

⁴¹⁷ Morgan M. Robertson, 'The Neoliberalisation of Ecosystem Services: Wetland Mitigation Banking and the Problem of Measurement,' in *Neoliberal Environments: False Promises and Unnatural Consequences*, ed. Nik Heynen et al. (London and New York: Routledge, 2007), 119.

⁴¹⁸ Claudius Kirchhoff in discussion with the author, 8 June 2016.

⁴¹⁹ 'New York City Street Tree Map,' accessed 27 June 2017, <https://tree-map.nycgovparks.org/>

2.4 Ambiguities of Demarcation at the European Investment Bank

Trading in natural capital and mitigation banking in the US is being adopted by European institutions but adjusted to a more 'sustainable' approach in different pilot projects. The term has moved away from *mitigation* into better-sounding *habitat* banking. The US idea of No Net Loss was translated to become Net Gain for its European counterpart. The site of enquiry chosen for the practice-based research of this section was the European Investment Bank (EIB) in Luxembourg, the issuer of the most green bonds in the world (valued at €60 billion), which is currently in charge of discussing the international standard metrics for offsetting credits.⁴²⁰

Fieldwork and production took place while in residence at their headquarters (see Project Dossier 2). The project was presented and installed in the atrium, and the residency period also facilitated access to some of the 2,000 EIB employees (investors, bond issuers, analysts, policy-makers). In an interview with Senior Environment and Biodiversity Specialist Eva Mayerhofer, she stated how offsetting mechanisms are the way to balance the social value of development with the environmental value of the landscape.⁴²¹ Her vision is that without a price tag on nature – i.e. a valuation of a forest at €1 million or 10,000 credits in certain scale – local developers and decision-makers will not consider its preservation. For her, figures and metrics are required to understand the impact of certain actions, as the moment land is not protected is when it can be degraded. Mayerhofer also made it clear that contrary to common criticism, No Net Loss does not necessarily equal free license to offset.

After different interviews and conversations with EIB analysts, the idea of the lesser evil for the compensation of unprotected landscapes can be summarised in three controversies around ambiguity:

a. **Metrics:** After a series of difficult meetings and workshops aiming to achieve the EU Biodiversity Strategy 2020 with participants such as European policymakers, investors, developers, the European Landowners Associations, cement producers association, ports, NGOs, and environmental activists, the EU has still not agreed on common standards for quantifying the value and cost of biodiversity.⁴²² Despite the EU's commitment to reach an agreement by 2015, controversies around how and whether to assign value to landscapes – namely, which units measure ecology – have delayed the entire process. So far, the German restoration system that incorporates the idea of *Ausgleichsregelung* is the best reputed in terms of existing frameworks. It works in surface terms: 1 hectare of destroyed wetland is to be mitigated by 1 hectare of restored landscape. The case of the Bremerhaven wetlands restoration (2006) was offered as a pioneering reference of successful habitat banking. Nonetheless, there are not yet any cases of fully restored landscapes, as it takes 20-25 years for that to happen. In other words, habitat banking has no complete evidence of its effectiveness.

⁴²⁰ After an international open call, Cooking Sections (the practice the author co-founded with Alon Schwabe) was chosen to spend 1 month in June 2016 at the institution.

⁴²¹ Eva Mayerhofer in discussion with the author, 7 June 2016.

⁴²² Ibid.

b. **Control codes:** Mayerhofer stated that 'it is easier to do mitigation banking in developing countries, because there is no regulation'.⁴²³ While she laughed when saying it, the implication is that habitat banking, in its ambition to do good, to a certain extent takes advantage of still-colonial relationships in the financial sphere. The ideal model is considered to be the offsetting project run by Rio Tinto Mining Corporation in Madagascar, which has been offered as a poster child to show how the destruction of coastal mangroves can be compensated and restored through the creation of an ecological corridor elsewhere in the area. Furthermore, to control the perverse ethics of mitigation banking, an external third party is required to audit the process, like the EU Emissions Trading Scheme or the UN Environment Programme's World Conservation Monitoring Centre. Similarly, quality certifications like the Forest Stewardship Council (FSCTM), one of the world's leading standards for responsible forest management, has been criticised for conflicts of interest, as their certifying agents are paid by the companies applying for certification. In order to be hired for future projects, it is in the assessors' interest to not be too difficult. FSC positively certifies industrial monoculture tree plantations that have logged primary forests as 'well managed' despite the negative impact of clearance on the environment and local residents.⁴²⁴

c. **Responsibility:** The main enemy of wetlands is not agriculture itself, but agricultural policies and subsidies from the EU, which are the main contributors to wetland drainage for land 'improvement'. The balance of authority in the European Parliament exposes the friction between preservation and destruction: the Commission for Agriculture and Rural Development has more power and budget than the Commission for the Environment. Hence, the outcome of the policies of the one and the other are biased to one side.⁴²⁵ In sum, uncoordinated efforts between departments are increasing the need for offsetting as part of the so-called 'biodiversity strategy'.

These three types of ambiguity reduce biodiversity to the leftovers of a clash between land speculation and financialised ecology. This especially applies to the Spanish littoral and the way the management of the coast depends on the value of the landscape. The processes of land and ocean grabbing are explicit in the way biodiversity is traded, as was clear in the frictions between the beetle and the seagrass described in the prologue.

The clash of powers between the simultaneously destructive and restorative agency of the USACE and the EU has their equivalent in the naming of Spanish Ministries. The word 'environment' as an institutional term first appeared in Spain in 1972, in the form of a commission within the Ministries of Public Infrastructures and Civil Works. In 1996, the conservative party created the Ministry for the Environment, as part of one of the most aggressive and pro-speculation land laws in the history of the country, which reclassified wildland into building land and used protection to disguise destruction. In 2007 the EU Environmental Liability Directive arrived in Spain bringing habitat banking, together with the first

⁴²³ Ibid.

⁴²⁴ 'FSC Watch,' 1 June 2014, <https://fsc-watch.com/2014/06/01/the-10-worst-things-about-the-forest-stewardship-council/>

⁴²⁵ Eva Mayerhofer in discussion with the author, 7 June 2016.

plan to organise natural resources.⁴²⁶ In 2008 the socialist party combined the Ministry of Agriculture, Fisheries, and Food and the Ministry for the Environment into a single entity: the Ministry for the Environment, and Rural and Marine Life. Even if this Ministry is separated into a Secretary for Climate Change and a Secretary for Rural and Water Affairs, the attempt to distance itself from explicit agribusiness interests brought criticism for putting both sectors together behind a green curtain.⁴²⁷ In 2011 the Ministry was renamed again, this time as the 'Ministry of Agriculture, Food, and Environment', openly returning to the economic interests in agribusiness over environmental concerns. The same conservative party in the following administration incorporated fisheries into the Ministry, renaming the institution for the third time in less than a decade, this time as the 'Ministry of Agriculture and Fisheries, Food, and Environment'. The natural capital of the oceans thus entered the frontier of value extraction.

In order to investigate the link between real estate and habitat restoration, the practical project at the EIB reconsidered the notion of speculation by exposing some of the most-banked species to the analysts who were devising plans to financially regulate their endangerment. The main finding was that mitigation banking depends not only on the perpetuation of the possibility of extinction, but it also needs to keep that risk circulating in a profitable economic loop. Whereas the USACE and US mitigation banks depend on each other, in the case of the EU, it is the EIB that plays both roles in one. Mitigation or biodiversity banks in the US follow federal policy but have a clear orientation towards their private clients; whereas, the European Investment Bank is a semi-public entity whose ultimate client are the different EU states, concentrating both policy- and profit-making under the same roof. Given that habitat banking is less developed in Europe and that the EIB is something of a public bank supported by European nation-states, it is in a unique position to rethink the environmental terms of such transactions from a less commercially-driven approach and has the potential to project a radically different agenda. Its challenge remains how to critically use the consolidation of power at the EIB to benefit ecology.

The final installation at the EIB in effect brought the most-banked species into the financial institution that regulates their value. The project involved first identifying the animals in order to reproduce their coos, growls, hee-haws, chirps, and twitters in the atrium of the headquarters of the EIB. According to the Ecosystem Marketplace Network – one of the reference indexes for mitigation banks, devised by Forest Trends, alongside its sister online site SpeciesBanking.com – the top seven most-banked species in the world in June 2016 were: vernal pool fairy shrimp (*Branchinecta lynchi*), California tiger salamander (*Ambystoma californiense*), vernal pool tadpole shrimp (*Lepidurus packardii*), Swainson's hawk (*Buteo swainsoni*), coastal California gnatcatcher (*Poliophtila californica californica*), San Joaquin kit fox (*Vulpes macrotis mutica*), and the western burrowing owl (*Athene cunicularia hypugaea*). This list, in which six of the seven

⁴²⁶ 'Ecosystem Marketplace,' 18 June 2013, <http://www.ecosystemmarketplace.com/articles/habitat-banking-in-spain-br-moving-towards-the-future>

Ley 42/2007, de 13 de diciembre, del Patrimonio Natural y de la Biodiversidad

⁴²⁷ Greenpeace paradoxically praised the fact that the conservative party had even done it better in the previous legislature. See 'Greenpeace,' 12 April 2008, <http://www.greenpeace.org/espana/es/news/2010/November/greenpeace-denuncia-el-desguac/>

are state- and federally-listed endangered and threatened animals of California, indicates that these species inhabit three kinds of liminal spaces:

- a) Vernal pools, or small, shallow seasonal wetlands that appear and disappear according to rainfall and that, since the 1990s, have been well publicised as the sole home for certain amphibians suffering a worldwide decline;⁴²⁸
- b) Coastal sage scrub, which is found on sites valuable for real estate development and therefore vulnerable to common fires, many times intentional, that can wipe it out entirely and make space for new developments; and
- c) Grasslands, which have been turned into farming areas, and fragment their habitats.

These endangered species inhabit spaces that have been labelled as 'unproductive' in order to legitimise their destruction. However, after the real estate bubble collapsed, the same forces that had previously pushed out their animal and plant inhabitants have shifted their understanding of the space and begun to build value out of their disappearance—not by means of buildings, but through financial transactions. Hence, the construction of disappearance itself has become crucial to this new form of speculation. More importantly, the extreme variability of the spatial margins of these unstable habitats has been turned into an environmental asset. Their constant fluctuation indeed provides for more profitable ecosystem services to trade with. Hence, according to that market logic, investors need species and spaces to be perpetually disappearing in order to continue being profitable: the more complex and difficult to define the endangered habitat is, the more assets and revenue can be produced in their changing definition. Contrary to a Darwinian evolution of species, in order to survive, banked species have to remain under threat of extinction.

Under the title *Speculations on Disappearance*, the sound installation was constructed at the EIB in summer 2016. The top banked species unexpectedly emitted their sounds in the six-floor atrium. As part of capturing a representative sound for each species, the project was challenged to choose a single, specific sound to each of them. As in the case of the very vocal California Gnatcatcher, its pitch and song vary depending on gender and the point of time in mating season, and other sounds indicate nesting, call for food, feeding time, alarm, territorial disputes with adversary males, distress calls, mobs, sunrise or midday, etc. The specificities of the warbling, rasping, clucking, screaming, or rattling served as a tool to make more explicit the contradictions around the calculation of the average value of a habitat for banking purposes. The choosing of sounds sought to increase the complexity of quantifying environmental value and raised the question of whether the spatial margins of a dwelling space corresponded with or fluctuated in proportion to the reach of a bird's voice throughout the day, year, or life cycle.

Apart from raising ethical questions, sound compilation as a method also allowed the research to unpack and understand the very functioning of the EIB. The regulations around the production of the sound piece meant that the noise disturbance and frequency in the atrium

⁴²⁸ Elizabeth A. Johnson and Michael W. Klemens, *Nature in Fragments: The Legacy of Sprawl*, (New York: Columbia University Press, 2005), 67-68; David B. Wake, 'Declining Amphibian Population,' *Science* 253 (1991), 860.

could not bother the staff 'too much'. When employees walked past the EIB atrium and heard a couple of seconds of a high-pitched distress whistle, they thought birds had entered the building through the all-too-smart automatic roof openings that regulate temperature without mechanical heating or cooling systems. Bird removal had become a common task for housekeepers and a spectacle for workers watching them be removed from the building without hurting them. Some employees were worried that the live animals could not fly back out again, others were indifferent, and still others were excited by the possibility of seeing a live bird they can only experience from afar or calculate in figures. These different reactions expose the techno-ecological failures of the building while opening up discussions around how and if to regulate species banking between workers from different departments.

Processes dependent on the endangerment of spaces and species, as stated in the introduction, can be framed as what Bram Büscher and Robert Fletcher describe as capitalist accumulation by conservation: a mode of accumulation that takes the negative environmental impacts of contemporary capitalism as the basis for a newfound 'sustainable' model of accumulation for the future.⁴²⁹ It is this fictitious kind of conservation and commodification that perpetuates the circulation of interests or assets that sustain capitalism. In this process, compensatory mitigation or habitat banking relies on losses being classified as 'unavoidable', and on wetlands and species being converted into credits that can be withdrawn to offset debits.⁴³⁰

The question of who is the best judge to assess these wetlands is at the core of the struggle to define the public interest and understand its instrumentalisation for monetary purposes. In some extreme cases, the assessment has been opened to auctions, allegedly to increase the commitment to environmental preservation; for example, in the 2001 BushTender experiment in Australia, landholders bid for the commission to improve the quality and extent of native vegetation.⁴³¹ Environmental protection is used as a way to gamble with environmental destruction and vice versa. The challenge is how to take the idea of offsetting and ambiguity and use them instead as a form of resistance, as will be explored in the next chapter.

⁴²⁹ Bram Büscher and Robert Fletcher, 'Accumulation by Conservation,' in *New Political Economy* (2014). DOI: 10.1080/13563467.2014.923824

⁴³⁰ US EPA, 'Federal Guidance for the Establishment, Use and Operation of Mitigation Banks,' November 28, 1995, <https://www.epa.gov/cwa-404/federal-guidance-establishment-use-and-operation-mitigation-banks>

⁴³¹ Bruce McKenney and J. M. Kiesecker, 'Policy Development for Biodiversity Offsets: A Review of Offset Frameworks,' *Environ Manage* 45 (2010): 165-76. DOI: 10.1007/s00267-009-9396-3; Gary Stoneham et al., 'Auctions for Conservation Contracts: An Empirical Examination of Victoria's BushTender Trial,' *The Australian Journal of Agricultural and Resource Economics* 47 (2003): 478.

PROJECT DOSSIER

2

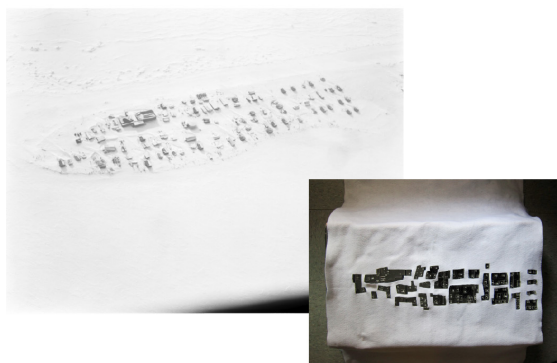
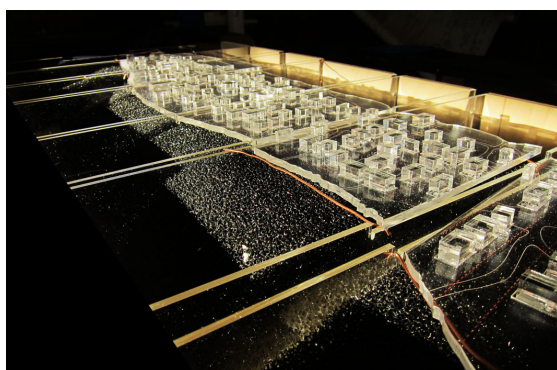
Building on the ideas developed on Chapter 2, the appropriation of the notion of *disappearance* by financial interests is also reshaping and reshuffling coastal inhabitation. The object of the shoreline functions again as an object of inquiry that makes clear how the crisis of housing can be analysed through the structures that financially engineer the demarcation of the coast as a system of capital flows that take environmental risk as a token for real estate speculative action. If the first chapter dealt with the Spanish context and the impossibility of using current methods and conceptual frameworks to demarcate its present extent, Chapter 2 deals more with the uncertainty of the *future* projection of the shoreline. In the case of Hurricane Katrina, insurance companies are shaping the actual extent of the sea to reduce their liability in the case of 'natural disaster'. Similarly, in the case of Kivalina, Alaska, it is the future projection of the coastline, and all the environmental assessment reports and evacuation works potentially needed, what has created a whole economy around projected catastrophes. As part of the practice, it proved very useful to compare fieldwork in the Spanish and the US contexts, given that the Spanish case has begun to incorporate US models of capitalisation on coastal space and can shed light onto how the models from the American continent could be copied in Europe if neoliberal powers carry on with their current trajectory. Therefore, it is crucial to learn from their failures to anticipate and envision other alternative scenarios for the making of housing along the Spanish coast without being immersed in legitimising any decisions for the sake of climate change or sea level rise.

This second Project Dossier is subdivided into three subsections. The first two compile the project developed in Kivalina (2F & 2G). New techniques of modelling space were developed to map the conflict around the demarcation of the shoreline. They required incorporating flexible understandings of thinking of the actual boundary between land and sea in order to deconstruct the violence that still-colonial forms of mapping inflict upon coastal Inupiaq residents. The modelling techniques eventually exposed the interests behind the US Army Corps of Engineers in exaggerating flood threats to perpetuate the littoral risk economy. In the third subsection (2H), disappearance is investigated through non-human species inhabiting the coast. Working from within the European Investment Bank in Luxembourg, which regulates the financial value of the protection (and endangerment) of coastal animal residents, the sound installation in the atrium worked as an experimental catalyst for opening up the discussions in the institution. Like the Kivalina models that we took to officers in Alaska, the sound beats at the EIB started also to make visible the four-dimensional construction of boundaries that should expand the current flat mapping of limits and rethink dwelling from another perspective different from one-dimensional zoning.

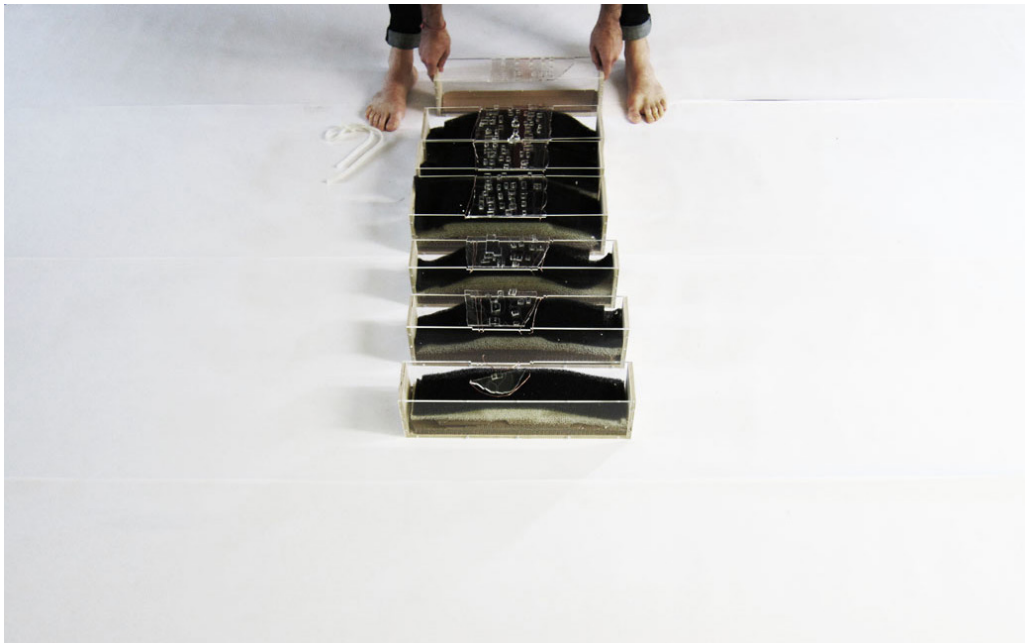
F/ *Modelling Kivalina*

A collaborative project by Andrea Bagnato, Daniel Fernández Pascual, Helene Kazan, Hannah Meszaros Martin, and Alon Schwabe. Kivalina, AK, 2013.

As unpacked in Chapter 2, the publication of the 2009 'Alaska Baseline Erosion Assessment Report' introduced a new perception of the demarcated shoreline in the way coastal threat was created to provide mitigation responses. Environmental responsibility and coastal inhabitation were put at the forefront of a new war on climate administered through housing 'solutions' for the Inupiaq population. Our project required alternative modelling processes to investigate the challenges put on residents along the shores of Kivalina, AK. They included different ways of modelling the contested objected of the shoreline as an assemblage of power in order to investigate how and whether decisions had been indirectly driven by profit margins. First, a disassembling model of the barrier island of Kivalina was built as a conversational device for a series of interviews (Figs. 118-122); then, the model was used to conduct and model interviews in real time in Alaska and understand territorial distortions according to the interviewee (Figs. 123-139); and finally, the interviews were translated onto comparative diagrammatic representations of lexicon and places to understand how the same terms meant sometimes completely opposite things (Figs. 140-145). 'Subsistence,' 'risk,' 'season,' 'land,' 'water,' 'inhabitation' or 'coastline' had very different meanings for governmental bodies and for residents in Kivalina according to their own agendas or cosmogonies.



118-120: The model of Kivalina was produced in seven cross-sections of the terrain containing detachable pieces that could facilitate conversations around the current extent of the solid ground in summer (plexi), houses (plexi cubes), property lines (etching), shoreline demarcations from past decades and future projections (copper wire), geological layers and permafrost (felt, foam, mesh), movement of sea elements (marbles), and winter layer of snow (white felt).



121-122: Use of the model indoor and outdoor. Preparing for interviews with residents at the community centre in Kivalina, where the base blank canvas allowed to extend the space represented in the model (top); and the model by the melting glacier outside Anchorage, on a site visit with Michael Brubaker (bottom). Both July 2013.



123-132: Interaction with the model during interviews. Left column top to bottom: Susan Bell and Scott Ruby, Department of Commerce, Community, and Economic Development - Division of Community and Regional Affairs (10/07/2013); Mike McKinnan, Denali Commission (10/07/2013); Kivalina City Council and Kivalina City Council meeting detail (16/07/2013); Kivalina Emergency shelter public event (24/07/2013). Right column top to bottom: Larry Hartig and John Madden, Alaska Department of Environmental Conservation (11/07/2013); Dianne Soderlund, Catherine Villa, Michelle Davis, Tribal Trust and Assistance Unit - Office of Ecosystems, Tribal and Public Affairs (11/07/2013); Julie Kitka, Alaska Federation of Natives (31/07/2013); and Sally Cox, Department of Commerce, Community, and Economic Development - Division of Community and Regional Affairs (10/07/2013).



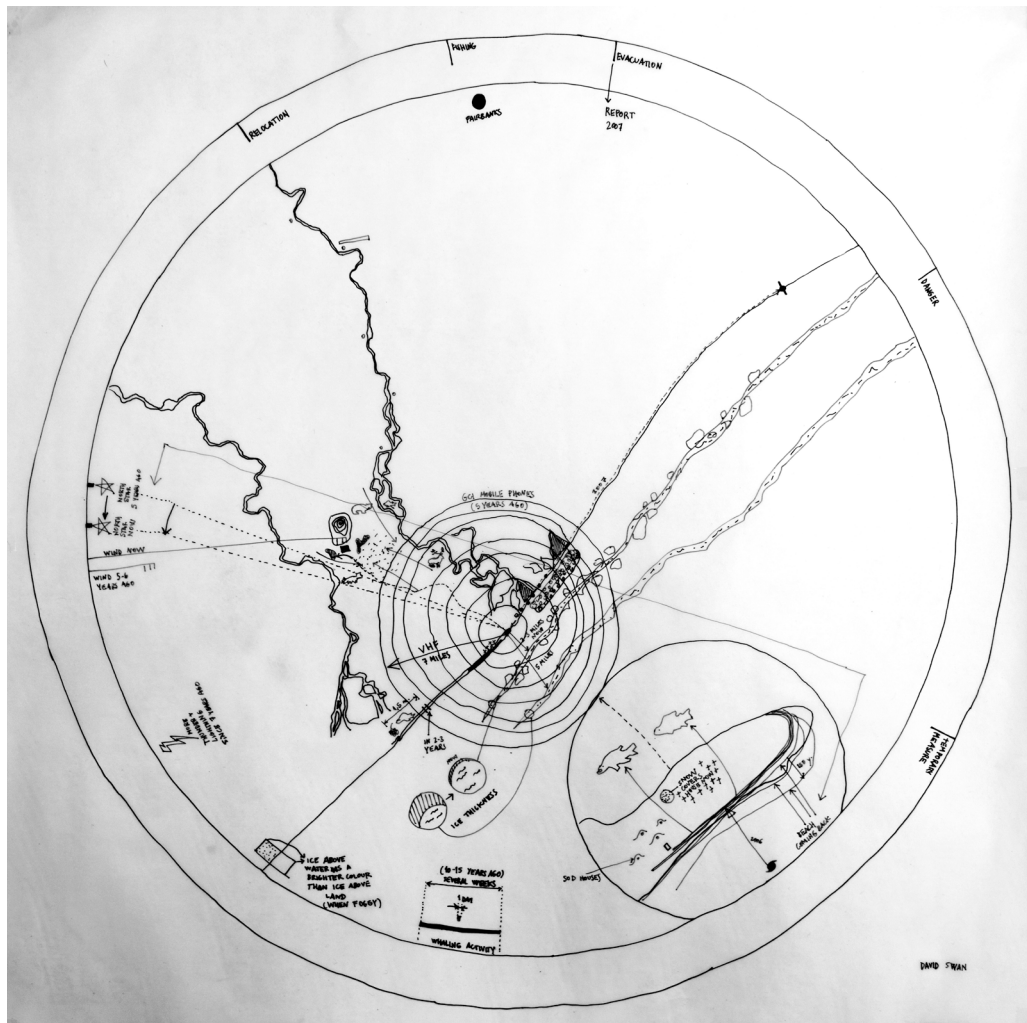
133-135: The model during individual interviews conducted in the community centre of Kivalina with residents. It became necessary to considerably expand the realm of representation by adding a white blank canvas underneath and draw or build ad hoc elements and props throughout the conversations (lasting between 30 min to 2,5 hours). The method to map each conversation in real time worked best when 1-2 people were in charge of asking questions and 1-2 people simultaneously taking care of the visualisation of facts, places, tools, and time frames.



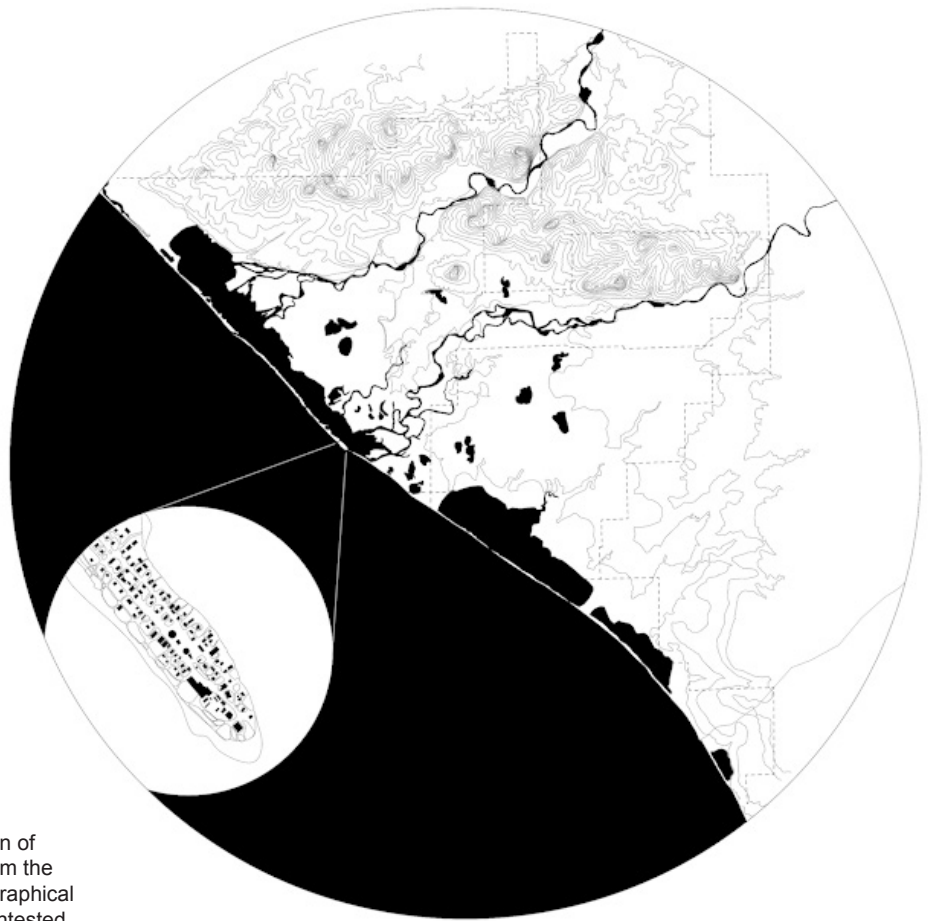


136-137: Boat field trip to the coastal lagoon of Kivalina and up the river to visit the fishing areas and the structures to dry fish, where summer seasonal camps used to be located (top two images).

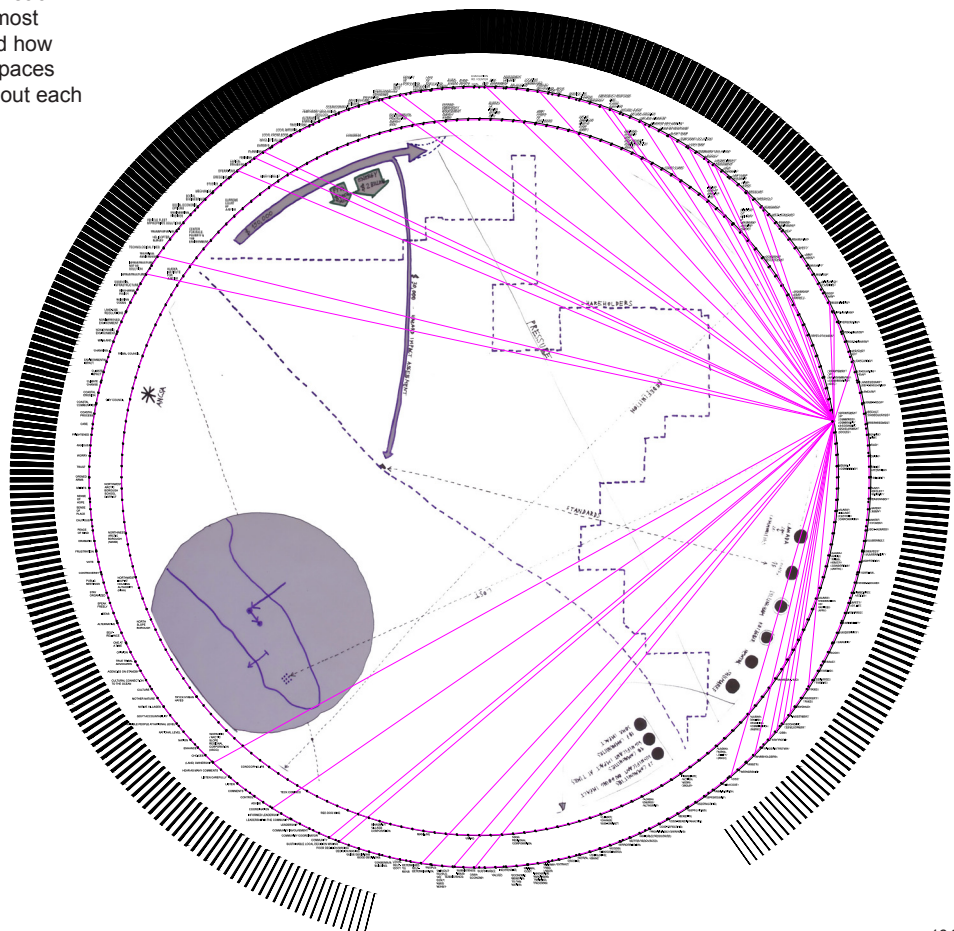
138-139: Improvised roulette with the different hunting, fishing, and foraging seasons built for the interviews in Kivalina, to better understand and visualise the overlap of food seasons throughout the year, and how they have been changing in the past decades (which seasons are starting earlier or later than others). There is no clear beginning or end between them; but the perception of time is a result of how different animals and plants organise the dietary cycle throughout the year. This became a useful resource to track climate transformations in the past decade.



140-141: Processing the data from the interviews onto baseline maps, where the real time visualisations are drawn and compared more easily.



142-143: Combination of the data gathered from the interviews with topographical digital basemaps, contested objects and entities around the shifting shoreline, and the lexicon used on each interview with the most repeated terms and how they relate to the spaces mentioned throughout each conversation.





144: The coast of Kivalina, aerial view of the tundra and the rich water system in the summer, before landing. July 2013.

145: Results of the modelling process. Final public event in Kivalina, 27 July 2013.

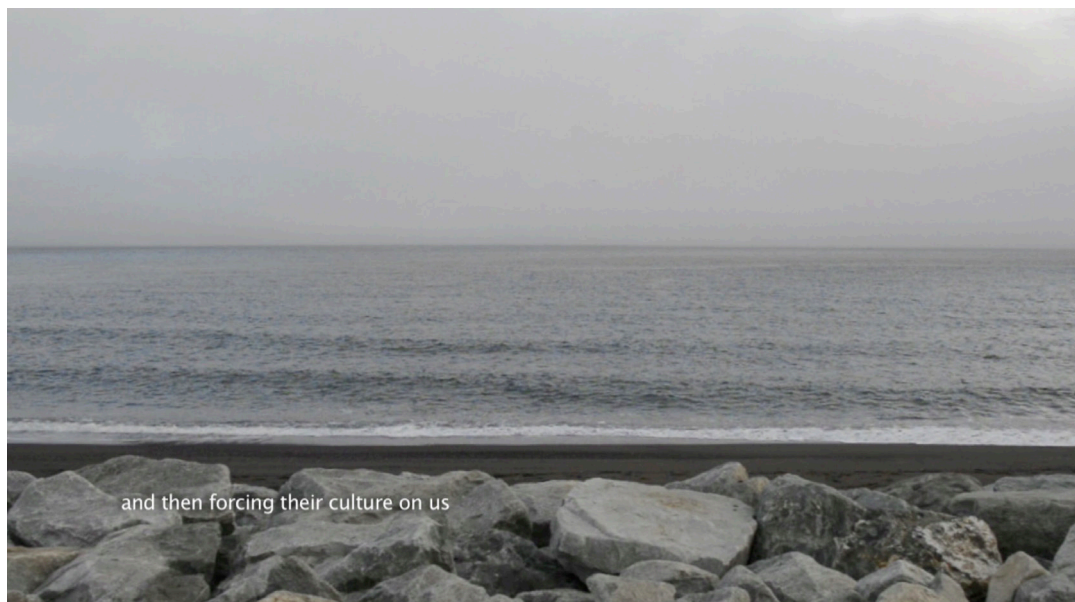
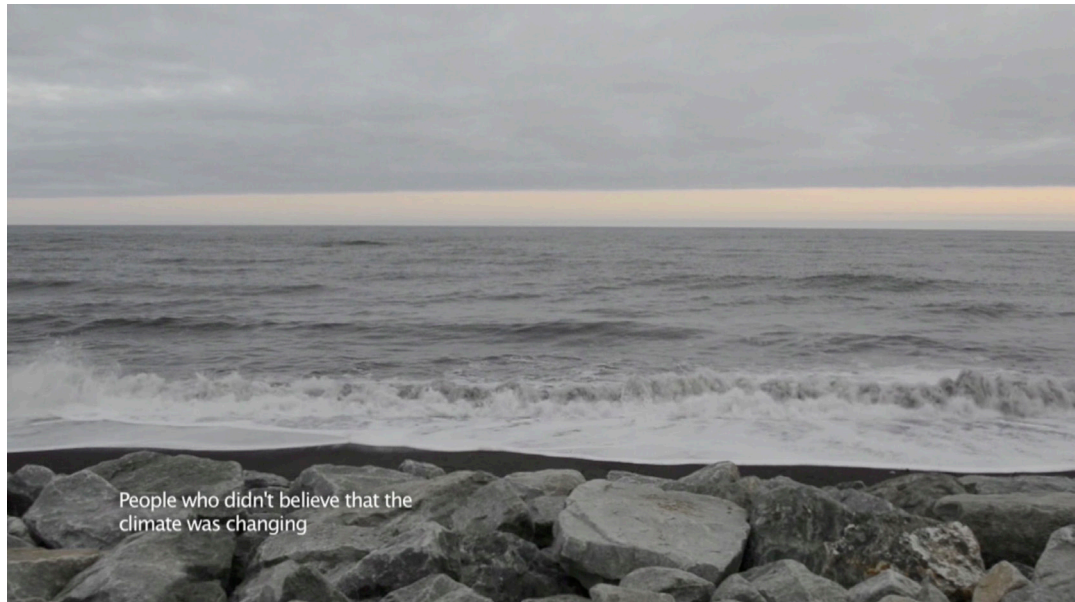
GI Kivalina, The Coming Storm

Film by Modelling Kivalina working group: Andrea Bagnato, Daniel Fernández Pascual, Helene Kazan, Hannah Meszaros Martin, Alon Schwabe (UK, 2014, 36:35). In collaboration with: Re-Locate. With the support of: The World Justice Project Opportunity Fund 2013; Forensic Architecture; Goldsmiths University of London; and Haus der Kulturen der Welt, Berlin.

The Coming Storm is a visual investigation of the shoreline in Kivalina narrated through a selection of excerpts of the interviews carried out in Alaska during fieldwork in summer 2013. Kivalina is an Inupiaq village of 400 people situated on a barrier island in the Arctic, on the northwest coast of Alaska. In recent years, climate change has delayed the formation of sea ice, exposing the shore to autumnal sea storms, allegedly placing the existence of Kivalina increasingly under threat. The lack of basic infrastructure compounded by erosion and flooding, has pushed the village to seek relocation; a desire exacerbated by a series of scientific reports after calculating the projection of the future shoreline. In 2006 Kivalina sued the 24 largest oil and gas corporations, maintaining that they should be held accountable for the consequences of greenhouse gas emissions—and the disappearance of the ice layer that used to form in winter along the island—and therefore contribute to relocation costs. Following the failure of the legal forum to address Kivalina's claims and the standstill of governmental relocation attempts, the project conducted a series of interviews with village residents, scientists, and political representatives to envision a new negotiation platform.

The film itself explores the way imminent risk and infrastructural solutions have gone hand in hand and how environmental responsibility is constantly offset. The moving image features a compilation of scenes shot from 23:55 to 00:05 in the midnight summer sun, taken while at Kivalina. It is not the sunset but the clock what regulates time differences on site. Each shot blurs the horizon line from one day to the next by having the camera in the same position. Very little changes appear on camera, mostly weather variations, sky colours, cloud formations or wave patterns in the Chukchi Sea. The film is shot looking out onto the coming storms and the local fear derived from the failed seawall revetment built by the US Army Corps of Engineers that effectively 'unprotected' the coast. The voice over is a mix of recollections that dismantles the single narrative in place: that the shoreline is naturally eroding and that the village of Kivalina is going to disappear. The risk assessment economy has turned people into figures that matter less than boundaries, as residents became financial instruments to bargain mega-scale engineering efforts to keep a line in (a certain) place. The film intentionally avoids depicting human faces and focuses instead on the blurry lines of the sea to map the four-dimensional condition of the littoral and how a multiplicity of narratives need to reinvent inhabitation along the barrier island of Kivalina.

Accessible at: <https://vimeo.com/155541333>



146-147: *The Coming Storm*, 2014.
Film stills.

H/ *Speculations on Disappearance*

Site-specific sound installation by the author and Alon Schwabe; in collaboration with Borja V. Conde. European Investment Bank, Luxembourg, 2016.

Unexpected coos, growls, hee-haws, chirps, and twitters are permanently audible in the six-storey high atrium of the EIB. They are emitted by the most banked species in the world: the new subjects of a financial bubble that extracts and trades value from endangered species, while legitimising the offsetting of environmental damage derived from urban development. Similar to how insurance companies push the shoreline in its demarcation landward, coastal preservation zones are allocated to regulate the endangerment of non-human inhabitants. They vocalize the emergence of the fictitious accumulation of (natural) capital. This planetary financial enterprise relies on the double meaning of banking: to generate profit (through investments) and to protect for future use. In the atrium as in the great outdoors, there is no need to know which animal produces each sound we hear. That is the winsomeness of the forest: the unexpected, unpredictable, unreliable, unforeseeable presence of an animal, right behind you. It is perhaps the non-knowing of species that makes them commodities. By playing into the tension in which a recording of animal noises both familiarizes and obscures their existence, the installation opens the door for a different conservation that deconstructs hyper-quantification. It replaces resources and services with the incalculable. From the origin of No Net Loss to profiting from bio-assets, what has emerged is a new green space race through a wilderness of investment. Eco-utilities and forest bonds are boosting the neoliberal quantification of space and determining how it is classified and demarcated. But the most-banked spaces and species should not have been commodified in the first place (and thus should cease to be banked) and environmental offsetting as a practice, *bank-rupted*. The coos, chirps, and twitter of the inhabitants of forests, prairies, swamps, and mangroves have to become louder to prevent humans from endangering their existence or nettifying their numbers.



148-150: Installation view. EIB atrium where the sounds would occasionally make the world's most banked species present, June 2016.



151: Uglan House, where 18,857 offshore 'shell' companies are registered under the same address, George Town, Grand Cayman, 2015. Despite this anomaly, interviewees commonly repeated over fieldwork that the Cayman Islands 'strongly adheres to international anti-money laundering and anti-terrorist financing standards'. The Uglan House is often compared with 1209 North Orange Street, Wilmington, Delaware, a similar address with over 285,000 companies registered in it.

3– OFFSHORE

Housing As Financial Littoral:

The Real Properties of Immovable Estates

‘Aqui, onde a terra se acaba e o mar começa...’
[Here, where the land ends and the sea begins...]

—Luís de Camões, commemorative inscription at the Cabo da Roca lighthouse outside Lisbon, designed in 1758 (three years after the tsunami), and built at the westernmost point of continental Europe.

3.1 From Owning the Shore to Offshore Ownership

The financial nature of housing in a neoliberal system has atomised the house object into smaller instruments to speculate upon (liabilities, credits, mortgages, shares, equity, securities, etc). Hence, this chapter tackles the housing problem and the failures of housing policy from within the problematic of that financialisation process. In other words, how the condition of the offshore—the financial space beyond the physical and regulatory end of the state which operates at an extra-state level—is entangled with the consequences of the crisis, but has also allowed for resistance attempts that precisely started on the shores of the pre-established system as a way to bypass it. The offshore is, by definition, a space situated at a distance from the shore, and thus at a distance from the social provisions traditionally provided by the state. Political economist Ronen Palan remarks how it is a secondary space, one that dominates international finance, trade, shipping, and telecommunications by differentiating the on-shore, a space subject to strict control, from the off-shore, a space with minimal state intervention.⁴³² As of 2016, 60% of the world’s wealth is held in offshore jurisdictions, ranging from islands like the Bahamas, Bermuda and Jersey to offshore preferential tax regimes on-shore like Luxembourg, Delaware and the City of London. The Cayman Islands, for instance, hold around \$1.7 trillion in banking assets.⁴³³ Buildings like the Uglund House, a small four-floor structure on the waterfront in George Town (the capital), serve as the registered address for almost 20,000 companies, including investment funds and capital market issuers (Fig. 151, previous page). The current vitality of offshore financial centres across the globe does not imply that the state is on the verge of disappearing; quite the opposite, these unregulated juridical spaces in which economic activities can develop more or less without hindrance seem more to reinforce the role of the state.⁴³⁴ In fact, the offshore is supported by the legal framework of the state system, and driven unwittingly by interstate competition.⁴³⁵ Furthermore, what distinguishes the offshore from other forms of international deregulation, is that:

⁴³² Ronen Palan, ‘The Emergence of an Offshore Economy,’ *Futures* 20 (1998): 63.

⁴³³ ‘Cayman Offshore Banking,’ accessed 23 January 2017, <https://www.cayman.com.ky/the-cayman-islands-a-premiere-offshore-banking-center>

⁴³⁴ Ronen Palan, *op. cit.*, 64.

⁴³⁵ Jason P. Abbott and Mark P. Hampton, *Offshore Finance Centers and Tax Havens: The Rise of Global Capital* (Hampshire: Purdue University Press, 1999), 35.

[I]t drives economic activities into jurisdictions they should not have been in the first place. Strictly speaking, it does not make economic sense for the Cayman Islands to serve as the world's fifth largest financial centre; [...] and for the Marshall Islands, Vanuatu, or Liberia to be the world's giant shipping nations. There is no obvious economic reason why small Pacific islands are at the forefront of the telecommunications revolution, nor why Guyana and Niue are the central rerouting areas for Internet porn. [...] Offshore is therefore a form by which political and regulatory policies distort the relocation policies of international capital.⁴³⁶

The offshore, a space both within and outside the law, is best represented by the idea of the flag of convenience: countries which offer their maritime flag registration to owners from other countries in exchange for low or non-existent taxes.⁴³⁷ That idea of convenience relies on remote, versatile places beyond the shores of the territory that sets the baseline reference, where governments sell sovereignty while declining or offsetting responsibility.⁴³⁸ The geographic distance that separates the onshore and the offshore allows for an intentionally ambiguous, malleable, and plastic juridical void, where restricted activities on one side are encouraged on the other. This chapter investigates the power contest between the shore and offsets by looking into the littoralisation of space. Following capital's need for spaces of exception and exclusive economic zones, the offshore offers an opportunity for understanding contemporary forms of control and the abuse of power through the demarcation of space.⁴³⁹ At the same time, the simultaneous construction of profit and spatial margins sheds light on how the offshoring of ambiguity could become a form of resistance, precisely because of the multiple interpretations of a limit.

In this regard, the littoral is intimately linked to the making of spaces of financial security and territorial exception. Contrary to associations between the offshore and the tax haven boom in the 1960-1980s, the offshore as an intentionally ambiguous space has operated for centuries. The extraction of overseas resources turned colonies into proto-offshore spaces, where otherwise forbidden behaviours and exchanges could easily occur both within and outside the law. However, transoceanic mobility between the onshore and the offshore was threatened by a series of forces, mainly piracy and wreckage, which pushed venture capitalists in large European harbour cities to develop complex insurance schemes. By spreading the risk of lost property, the probability of individual bankruptcy was considerably reduced. Some of the first European experiments in insurance were Genoa's *Lex Mercatoria* regulations and Lloyd's Coffee House (and later Register) in London, both of which attempted to manage risk and insurance and cover the potential loss of any fully loaded vessel overseas.⁴⁴⁰ While insurers developed abstract policies and financial tools against the potential damages of piracy,

⁴³⁶ Ronen Palan, 'The Emergence of an Offshore Economy,' *Futures* 20 (1998): 64.

⁴³⁷ *Ibid.*, 69.

⁴³⁸ Paul G. Buchanan, 'Risk Assessment: Selling Sovereignty and Declining Responsibility. Flags of Convenience in the South Pacific,' *36th Parallel*, 28 Aug 2012, <http://36th-parallel.com/2012/08/28/risk-assessment-selling-sovereignty-and-declining-responsibility-flags-of-convenience-in-the-south-pacific/>

⁴³⁹ Ronen Palan, *op. cit.*, 69; Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London and New York: Verso, 2014), Chapter 1.

⁴⁴⁰ Marine insurance schemes began applying ambiguity onto fire protection in the domestic realm after the 1666 Great Fire of London. This incident destroyed around 13,000 buildings in the city, leaving one sixth of the urban population homeless (80,000) and causing £8 million of damage. See Geoffrey Parker, *Global Crisis: War, Climate Change and Catastrophe in the Seventeenth Century* (Yale University Press, 2013).

governments hired those same pirates to attack the trading routes of neighbouring nations.⁴⁴¹ Rather than considering pirates, corsairs, buccaneers, and privateers as criminals, they were seen as both the ultimate enemy and the friend of all.⁴⁴² They were agents of operational ambiguity, whereby international maritime powers like England, Portugal, and Spain could nominally respect peace agreements with each other while breaching them every time through outsourced attacks by privateers.

Since the so-called Age of Exploration, distance from the onshore has coincided with the development of a visual representation of the littoral as seen from the sea, which was crucial for both navigation and cartography. As part of the securitisation of the shore, lighthouses that had been historically a defence against enemies, shifted to become optical and surveillance technology. They reduced the risk of wrecks by making the coast visible at night, during storms, or in misty weather. Portuguese writer Luís de Camões described the busy traffic in the Atlantic as a spectacle of the Machine of the World: an unprecedented era of shipping goods across the oceans.⁴⁴³ Camões' Homeric-style work *The Lusiads* (1572) identifies the westernmost point on the shoreline of continental Europe as Cabo da Roca in Portugal, right outside Lisbon – that cape on the edge of the continent generated the illusion of a geographic limit to legality, as if the economic power structure within the European perimeter could be confined to it. 'Where the land ends and the sea begins' was chosen as the commemorative inscription to mark the outermost point in continental Europe. However, that is not necessarily true. Financial dispositifs, assets, investments, risks, uncertainties, and liabilities control and adapt the margins of the coast. The landward shoreline does not end where waves break on the beach; it stretches all the way to fluid offshore zones, where capital sits in ambiguous jurisdictions. The shoreline is an expanded buffer regulated by global finance. Its material composition includes grains of sand, silicates, and sea salt, but also data travelling in the form of electronic pulses through fibre optic submarine cables. These minerals that compose both the geological and electrical character of coastal margins turn the littoral into a liminal zone that does not end with Camões' lighthouse; rather, it expands from the riverbanks of the City of London all the way to the Cayman Islands and beyond.

Offshore spaces exist both overseas and within European shores, in places like Liechtenstein, or Andorra. But there are also hybrid spaces that act as intermediaries, between offshore and onshore, which have been designated as Outermost Regions (ORs) for the development of remote areas within the EU. ORs rather function as *alongshore* spaces that are autonomous and dependent at the same time. The Azores and Madeira for Portugal and the Canary Islands for Spain are examples of ORs. According to the EU, this special framework is meant to compensate for the geographical remoteness of these regions, as compared to the rest of the EU – for being too far from the shores of Europe.⁴⁴⁴ Nonetheless, the OR designation also

⁴⁴¹ Daniel Heller-Roazen, *The Enemy of All: Piracy and the Law of Nations* (Brooklyn: Zone Books, 2009), 178-180.

⁴⁴² Ibid.

⁴⁴³ Luís de Camões, 'The Lusiads,' Chant X, accessed 26 June 2017, <https://www.britannica.com/topic/The-Lusiads>

⁴⁴⁴ 'Outermost Regions (ORs),' European Parliament, accessed 23 March 2017, http://www.europarl.europa.eu/atyourservice/en/displayFtu.html?ftuid=FTU_5.1.7.html

generates a very attractive and useful differential tax-regime that has created new circulation patterns for capital flows. Similarly, 'Non-Self-Governing' territories affiliated with European states, like Gibraltar and Turks and Caicos Islands, are trapped between full independence and postcolonial rule. After the recent financial crash, the reputation of offshore territories has begun to worsen. It is now clear that credit and mortgage institutions played an active role in provoking the crisis, in no small part by operating from offshore. As a result, global scrutiny has forced some offshore spaces to increasingly police and regulate their funds, or even further, it has forced onshore states to redefine what offshore space actually is. In 2007 Spain stopped considering Panama a designated tax haven, so that Spanish global construction and engineering corporations could continue to operate there without risking the label of 'tax haven operator'.⁴⁴⁵ Under the controversial logic of double taxation agreements, this technical change in the definition of tax haven allowed for the same privileges to stay in place but now functioning more smoothly. Just by ceasing to refer to tax havens as tax havens, a series of offshore locations have disappeared from blacklists in the past five years: Dutch Antilles, Aruba, Cyprus, the United Arab Emirates, Hong Kong, the Bahamas, Barbados, Jamaica, Malta, Trinidad and Tobago, Luxembourg, San Marino, and Singapore. These changes follow the same logic as the Granadilla case from the prologue, where the government of the Canary Islands removed seagrass from their list of endangered species in order to legally destroy their coastal habitat.

Offshore, overseas, and outermost constitute three spatial outcomes of an economy conceived around differential tax regimes that turn far away places into exceptional investment centres. They are spaces intimately linked to different systems of property ownership that take advantage of a simultaneously foreign and domestic condition.⁴⁴⁶ This has developed the relationship between housing and the shore into a new form of speculation, known as offshore ownership. In less than a decade, London has become an outstanding example of the proliferation of offshore ownership at a global level (Fig. 152). In Westminster – the UK's richest borough – one in ten properties is held by an offshore company.⁴⁴⁷ Billions of pounds have been laundered by criminals and foreign officials through upmarket London properties bought and sold by anonymous offshore shell companies.⁴⁴⁸ As of 2016, 40,000 properties in London and almost 100,000 in the UK are owned by hidden companies offshore.⁴⁴⁹ In 2011 alone, more than £7 billion in offshore money was poured into Britain's flats, houses, and office blocks. Of that, more than half – that is, £3.8 billion – of the transactions were through entities registered in the British Virgin Islands.⁴⁵⁰

⁴⁴⁵ Jaume Viñas, 'El Año en que Panamá Dejó de Ser un Paraíso para España,' *El País*, 5 April 2016, http://cincodias.com/cincodias/2016/04/04/economia/1459788591_803795.html

⁴⁴⁶ Jason C. Sharman, 'Offshore and the New International Political Economy,' *Review of International Political Economy* 17 (2010): 1, DOI: 10.1080/09692290802686940.

⁴⁴⁷ Robert Booth, 'UK Properties Held by Offshore Firms Used in Global Corruption,' *The Guardian* 3 March 2015, www.theguardian.com/uk-news/2015/mar/04/uk-properties-held-by-offshore-firms-used-in-global-corruption-say-police

⁴⁴⁸ Jim Armitage, 'London Property Boom Built on Dirty Money,' *Independent* 4 March 2015, <http://www.independent.co.uk/news/uk/home-news/london-property-boom-built-on-dirty-money-10083527.html>

⁴⁴⁹ Robert Booth, Helena Bengtsson and David Pegg, 'Revealed: 9% Rise in London Properties Owned by Offshore Firms,' *The Guardian* 26 May 2016, www.theguardian.com/money/2016/may/26/revealed-9-rise-in-london-properties-owned-by-offshore-firms

⁴⁵⁰ Editorial, 'The Guardian View on Offshore Secrecy: Transparency is Welcome But It's Not a Housing Policy,' *The Guardian* 28 July 2015, <https://www.theguardian.com/commentisfree/2015/jul/28/the-guardian-view-on-offshore-secrecy-transparency-is-welcome-but-its-not-a-housing-policy>



152: Offshore ownership in London: The map shows all land and property registered in the name of an offshore company between 2005 and July 2014. It uses data released following Freedom of Information. Freehold (in orange), and leasehold (in purple). Source: www.private-eye.co.uk/registry

48% of all London properties owned by offshore haven companies are in Westminster (11,457), and Kensington & Chelsea (5,836), UK Unmask The Corrupt, accessed 1 July 2017, Source: www.ukunmaskthecorrupt.org/interactive-london-property-map.php

Offshore-owned flats are worsening the housing crisis by playing with the ambiguity of what the word *affordable* means. Loopholes like the UK's Section 106 on 'planning gain' allows developers to bypass required affordable housing by declaring a development as 'not commercially viable'.⁴⁵¹ This tactic relies on a biased financial viability assessment that can easily be biased to justify the exclusion of 'affordable' homes and instead cater exclusively to upscale investors who rarely even live in any of the flats. They can be considered dwellers whose mission is not to dwell. Offshore-owned flats – financially-derived forms of housing – are fruitful for both developer and buyer; and are reshaping speculation as well as understandings of residence, citizenship, and occupancy. Apart from new spatial typologies, like investment housing, this market trend is leading to new anthropological phenomena and the emergence of an offshore class: Ultra High Net Worth Individuals, with more than \$30 million in individual assets.

3.2 Gambling with the Law: Loopholes, Circumventions, and Ambiguity as Resistance

How did we find ourselves in a situation where the plunder of space and profit can move such large volumes of transnational capital via remote overseas islands? The origin of the legal conversion of real estate property into liquid assets sheds light on how the appreciation of space and housing can be challenged: is land really immobile, and to what extent legal fictions can distort that condition? Inherited from Roman law, houses have historically required a different legal framework of ownership from portable objects, such as furniture or cars, and yet today houses are one of the most fluid and transferable assets. Even if the earth is in constant rotation, the term *real estate* implies immovable property in many Western European languages: Italian *immobili*, Portuguese *imobiliário*, French *immobilier*, Spanish *inmobiliario*, and German *Immobilien*.⁴⁵² These words all define the house as a material object fixed to the ground, assign it secure and theoretically non-fluctuating value, and connect it to a stable property boundary with rigid margins.

The mobility of the house as an object, something that would be more difficult to consider as real estate, has nonetheless existed in nomadic societies for millennia, as well as in specific circumstances that conferred a certain value to houses as movable assets prior to neoliberal forms of speculation. Even today, there are still practices of mutual aid whereby every time a member wants to move, the whole village works together to detach the house from the ground and carry it to the new site, as in the Bayanihan practice in the Philippines or Gotong-Royong in Indonesia and Malaysia.⁴⁵³

⁴⁵¹ Oliver Wainwright, 'Revealed: How Developers Exploit Flawed Planning System To Minimise Affordable Housing,' *The Guardian* 25 June 2015, <http://www.theguardian.com/cities/2015/jun/25/london-developers-viability-planning-affordable-social-housing-regeneration-oliver-wainwright>

⁴⁵² Barry Smith and Leo Zaibert, 'The Metaphysics of Real Estate', *Topoi* 20 (2001): 161-172.

⁴⁵³ Communal work or mutual aid as part of the act of collectively moving houses: 'The traditional Filipino house, the "bahay-kubo," can be moved using wooden poles which are carried from the old place to the new one. This requires a group of people to lift and carry the house on their shoulders.' See 'Filipino Culture: Bayanihan,' accessed 28 May 2017, <https://everything-filipino.com/filipino-culture-bayanihan-the-filipino-value-that-must-be-retained/>; Clifford Geertz, *Local Knowledge: Further Essays in Interpretive Anthropology*, (New York: Basic Books. 1983).

Homeownership, understood as the possession of immovable property, may be a deeply held Western value, but the flourishing of cultural values is not independent of promotion and subsidy by state policies.⁴⁵⁴ The state has the power to generate building booms, and thus the associated profit margins, deeply entangling itself in real estate speculation and homeownership as forces that increase the value of space. Graham Turner argues that carefully designed inequality is at the base of real estate bubbles, which far from being an accident, are a necessary component to expand free trade at all costs.⁴⁵⁵ This has been widely discussed in urban studies, economics, and sociology following the 2007 financial crisis.⁴⁵⁶ In a context dominated by market uncertainty and spatio-legal ambiguity, housing as a speculative form – far from real estate as immovable property – is a matter of legal fictions and constant shifts, of ambiguity and circumventions, of the redefinition of land value, zoning alterations, and the reclassification of space. The speculative character of both terms, immobility and property, perpetuates social violence even through the profit embedded in the margins of affordable housing.

In fact, the perverse moment when housing became *affordable* was also the moment that housing changed from a universal right first to become a commodity, and later an asset. Rather than being limited to the socially excluded, the disabled, the elderly, refugees/asylum seekers and the homeless, affordability has been constructed for lower income groups in society and has now climbed its way up to the middle class.⁴⁵⁷ Affordable housing in United States' public policy originated with the 1974 Housing Act, Section 8 and in a more explicit way with the 1986 Affordable Housing Act passed during Ronald Reagan's presidency; in the UK, it happened with the Right-To-Buy, part of the 1980 Housing Act under Margaret Thatcher's stewardship. As it moved to Spanish shores, homeownership penetrated citizen's minds through both policy-makers and property development lobbies. Affordable housing policies that emerged worldwide around the 1970-1980s unsurprisingly paralleled the UN Convention on the Law of the Sea, (UNCLOS), the Coastal Law in Spain, No Net Loss wetland policy and mitigation banking. They all configure a logic of calculated ambiguity applied to a notion of capital as the circulation of boundaries; a littoralisation of space under the disguise of the public interest and the common good.

Critical housing approaches by Peter Marcuse have focused on exposing the false intentions behind what appear to be well-intended policies.⁴⁵⁸ In his analysis of different housing programmes in US history, Marcuse enunciates the 'myth of the benevolent state' by exposing

⁴⁵⁴ David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution* (London and Brooklyn: Verso, 2012), introduction.

⁴⁵⁵ Graham Turner, *The Credit Crunch: Housing Bubbles, Globalization, and the Worldwide Economic Crisis* (London: Pluto Press, 2008), introduction.

⁴⁵⁶ Desiree Fields, 'Contesting the Financialisation of Urban Space: Community Organisations and the Struggle to Preserve Affordable Rental Housing in New York City,' *Journal of Urban Affairs* 37 (2014): 144-165; Robert C. Hockett, 'Paying Paul and Robbing No One: An Eminent Domain Solution for Underwater Mortgage Debt,' *Current Issues in Economics and Finance* 19 (2013): 1-12.

⁴⁵⁷ 'Housing Policy in the EU Member States,' *European Parliament*, accessed 23 June 2017, http://www.europarl.europa.eu/workingpapers/soci/w14/text2_en.htm

⁴⁵⁸ Peter Marcuse, 'Housing Policy and the Myth of the Benevolent State,' in *Critical Perspectives on Housing*, ed. Rachel Bratt, Chester Hartman, and Ann Meyerson (Philadelphia: Temple University Press, 1986), 248-258.

the instrumentalisation of housing for political purposes under the guise of the common good.⁴⁵⁹ National housing policies have done little to alleviate citizens' needs, but instead constitute a populist masquerade for both market speculation and a short-term easing of social unrest.⁴⁶⁰ As an extreme case, the 1934 National Housing Act in the US strengthened racial segregation by allowing banks to refuse to grant mortgages in communities of racially-determined areas. Through redlining, as the practice was called, blocks demarcated within a dark red perimeter on 'mortgage risk maps' would be excluded from funding facilities and stigmatised for allegedly unreliable payments (Fig. 153). Even worse, the practice of reverse redlining followed, whereby a lender or insurer specifically targeted non-white debtors, not to deny them loans or insurance, but rather to charge them more than could be charged to a comparable white consumer.

US housing policies have been the way to make citizens perceive housing as a solution to national crisis, when in fact, these housing policies have mainly secured the economic status of the privileged. As Marcuse pointed out, the two Tenement House Acts from 1867 and 1901 originally set minimum standards for housing; however, rather than aspiring to promote hygienic housing, they eventually facilitated land speculation while appeasing the immigrant draft riots from 1863.⁴⁶¹ Similarly, the Great Depression 1929-1939 was appeased by both the National Housing Act of 1934 and the Wagner-Steagall Housing Act 1937; the end of WWII was followed by the Veteran Housing Programs, the GI Bill (low interest and zero down payment home loans for servicemen), and the 1949 Housing Act, which opened a market for a new typology of single-family suburban homes; the 1968 Peace Protests were followed by the 1968 and 1970 Fair Housing Acts; and the 1973 Oil Crisis was followed by the Housing and Community Development Act, Section 8 in 1974.

The myth of the benevolent state became more explicit during the Reagan era, 1981-89, when housing markets were believed to function better without supervision or the intervention of the state. It led to the invention of another myth, that of the meddling state, which associated state intervention with deterioration and deceleration in meeting housing needs. But despite a long list of examples of state deregulation, housing has nevertheless been such a crucial matter that state involvement has never been completely discarded. Black Monday in 1987 was followed by the 1988 State Apartment Incentive Loan Program (SAIL), the Homeownership Assistance Program (HAP), the Fair Housing Amendment Act (FHAA) and the Housing and Community Development Act. The economic crisis of the 1990s was followed by the State Housing Strategy, Cranston-Gonzalez National Affordable Housing Act, Low-Income Housing Preservation and Resident Homeownership Act, William E. Sadowski Act, State Housing Initiatives Partnership Program (SHIP), East Central Florida Regional Planning Council (ECFRPC) Affordable Housing Methodology, Adequate Housing Rule, and Public Housing

⁴⁵⁹ Ibid.

⁴⁶⁰ Ibid.

⁴⁶¹ Peter Marcuse, 'Housing Policy and the Myth of the Benevolent State,' in *Critical Perspectives on Housing*, ed. Rachel Bratt, Chester Hartman, and Ann Meyerson (Philadelphia: Temple University Press, 1986), 250.

Reform Act. Finally and more recently, the 2007-2008 financial crisis was followed by the Housing and Economic Recovery Act 2008.

The political construction of housing shortage and systemic lack has paved the way for a need to supply housing solutions and services. After 144 years of real estate enclosure in the US, Phillip Anderson has concluded that there is a direct relationship between crisis, land sales, and real estate construction as the world's worst economic downturns have always been preceded by land speculation.⁴⁶² Furthermore, policy responses in some cases even worsen the crisis they aim to solve, either because of the urgency under which they are conceived or the neoliberal agenda of the policy-maker.⁴⁶³ This puts into question the real need for housing policy and the possibility of both its independence and its benevolence. In other words, the neoliberal threat to housing has been 'democratised' through a triple process of state insecurity that Isabell Lorey describes in her analysis of the government of the precarious: *precariousness* of the lives and bodies of dwellers; *precarity* as a spatial order; and *precarization* as a form of governance.⁴⁶⁴

Similarly, housing policies in the UK have historically been put into law immediately after the most dramatic recessions. The 1851 Landlord and Tenant Act was passed after the Panic of 1847. The 1890 Housing of the Working Classes Act after the Long Depression 1873-1896. The 1909 Housing, Town Planning, &c. Act came after the Panic of 1907; the 1919 Housing, Town Planning, &c. Act was made law after the 1919 post-war depression; the 1930 Housing Act followed the Great Depression 1930-31; the 1944 Housing (Temporary Accommodation) Act during WWII; the 1961 Parker Morris Committee report on public housing and anthropometric standards was after the 1961 recession; the 1977 Protection from Eviction Act came after the Banking crisis 1973-75; the 1980 Housing Act introduced the right-to-buy and the 1980 Local Government, Planning and Land Act ended the mandatory requirement to build houses; the 1985 Landlord and Tenant Act and 1988 Housing Act Section 8 followed the early 1980s recession and removed government funding for new housing; the 1996 Housing Act was passed after the early 1990s recession; and finally, the 2011 Localism Act Part 7 on Housing was passed after the 2007-2008 crisis.

Dismantling the welfare state in the name of the common good is a fallacy that has been used by neoliberal governments in favour of austerity measures.⁴⁶⁵ When analysing the financialization of homeownership and housing rights through mortgages, insurance, and investments, Raquel Rolnik argues that a growing consensus was formed alongside the rise of neoliberal economy, according to which governments should renounce their role as suppliers of affordable housing and support market demand rather than directly providing opportunities

⁴⁶² Phillip Anderson, 'The 18 Year Real Estate Cycle,' accessed 22 March 2015, <http://www.phillipjanderson.com/18-year-real-estate-cycle/>

⁴⁶³ John B. Taylor, 'The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong,' *Critical Review* 21 (2009). DOI: 10.3386/w14631

⁴⁶⁴ Isabell Lorey, *State of Insecurity: Government of the Precarious* (London and New York: Verso, 2015), 11.

⁴⁶⁵ Wolfgang Streeck, *Buying Time: The Delayed Crisis of Democratic Capitalism* (London: Verso, 2013), 27.

themselves.⁴⁶⁶ This implied creating conditions, institutions, and regulations to support pro-housing financial systems and promote homeownership according to principles of reliance on private property and market forces.⁴⁶⁷ Similarly to the shoreline, homeownership and housing rights have been littoralised. Indeed, housing has become a coast: a speculative process through which the house is not merely a built object, but a four-dimensional construct that is atomised into shares and margins to gamble with.⁴⁶⁸

Housing rights are not only being fought between onshore and offshore interests, but even more so around inhabitation on coastal grounds. As in the case of Kivalina, the violence of climate-related events has encouraged even further the masquerade of neoliberal logics of investment, risk, and mitigation as environmentalism. Building up coastal dunes has been considered one of the most efficient methods to offset ecological disasters like flood damage, hurricanes, and beach erosion, rationalising the confiscation of private land for the public good.⁴⁶⁹

Eminent domain or compulsory purchase is the power of the sovereign to take private property for public use without the owner's consent in exchange for 'just' compensation.⁴⁷⁰ Eminent domain and its equivalents have traditionally been used in Anglo-Saxon and continental law to take private property for a public purpose; for example, demolishing a house in order to protect the coast, to build an airport, etc., with a fair economic compensation allocated to the expropriated owner. However, traditional eminent domain programmes have been exploited in the way they cope with housing rights and climatic alterations. The seizure of property for the common good has also been used by states to remove undesirable citizens for the sake of hygienic urban planning.⁴⁷¹ Even further, legal battles to decide the degree of justice in 'just compensation' still revolve around the ambiguity of *special* or *general* benefits, as if that dichotomy could be clearly polarised. A general benefit is typically referred to as a benefit held in common with neighbouring lands; whereas special benefits are roughly defined as benefits that 'are direct and peculiar to the particular property'.⁴⁷² For example, most courts would consider the widening of a road in a large city a general benefit, but building a highway along an isolated property would likely be considered a special benefit.⁴⁷³

This 'benevolent' market has violently evicted, impoverished, and disenfranchised thousands of inhabitants along European shores, playing with the binary thresholds between private and common interest; the right to stay and compulsory eviction; and ecological destruction and

⁴⁶⁶ Raquel Rolnik, 'Late Neoliberalism: The Financialisation of Homeownership and Housing Rights,' *International Journal of Urban and Regional Research* 37 (2013): 1059.

⁴⁶⁷ Ibid, 1060.

⁴⁶⁸ This happened as a response to the 'slum problem,' the 'low-rent housing problem,' the 'housing shortage' or the 'housing need' of previous decades. See David J. Hulchanski, 'The Concept of Housing Affordability: Six Contemporary Uses of the Housing Expenditure-to-Income Ratio.' *Housing Studies* 10 (1995): 471-491. Accessed 5 December 2014. DOI:10.1080/02673039508720833.

⁴⁶⁹ Louis M. Russo, 'From Railroads to Sand Dunes: An Examination of the Offsetting Doctrine in Partial Takings,' *Fordham Law Review* 83 (2014): 1539-75.

⁴⁷⁰ Ibid, 1543.

⁴⁷¹ It is worth mentioning the development of Rosa-Luxemburg Platz in Berlin (1907), a slum clearance to get rid of prostitution by demolishing as many alleyways as through new oblique streets, cutting across the former grid.

⁴⁷² Louis M. Russo, 'From Railroads to Sand Dunes: An Examination of the Offsetting Doctrine in Partial Takings,' *Fordham Law Review* 83 (2014): 1549.

⁴⁷³ Ibid.

mitigation.⁴⁷⁴ The abuse of eminent domain or compulsory purchase is performed through the ambiguity of ethics.⁴⁷⁵ William R. Maurer remarks how the debate on the forced confiscation of property escalated after the 2005 *Kelo v. City of New London* decision, when the US Supreme Court ruled that state and local governments can seize homes and transfer them to private developers.⁴⁷⁶ In a similar way, in the village of El Puig, in Valencia, Spain, century-old fishermen's houses on the waterfront were demolished for being too close to the water after the government failed to artificially nourish the beach (Fig. 154). By not replenishing sediment along that small strip of the coast (unlike their ever-reliable maintenance at nearby expensive resorts), the old, small structures were condemned to disappear in order to keep the coastal buffer zone intact. However, their destruction made way for a new seaside resort just a little bit inland from the location of El Puig's fishermen houses.

In resistance to their dispossession, dwellers have been challenging power structures for centuries. The ambivalence between self-legislation and coercion was already pointed out by Jean-Jacques Rousseau, in reference to how self-governing citizens must simultaneously be subjects as well.⁴⁷⁷ As Isabell Lorey remarks, it is only in this coincidence of subjugation and freedom, of regulation and empowerment, that the governability or self-governability of sovereign subjects can be achieved.⁴⁷⁸ One of the most remarkable illustrations of this ambiguity is the emergence of the 40-shilling freehold societies in England 1840s. In order to be politically enfranchised, citizens had to own at least 40 shillings worth of property. Hence, new land societies were formed in order to change the balance of political power by extending the number of 40-shilling freeholders to a larger disenfranchised population. The society bought an estate and divided it into plots worth 40 shillings to be purchased by members with borrowed money.⁴⁷⁹ Colin Ward outlines similar strategies, such as the one-night house in 19th century Wales (*Tŷ Unnos*) or the occupation of caves in England.⁴⁸⁰ In the urban realm, the abusive window tax, hearth tax, and brick tax in the UK were each immediately followed by resistance tactics implementing ad-hoc circumventions to each one: walling up the windows, closing fireplaces, and using larger bricks.

⁴⁷⁴ *Borough of Harvey Cedars v. Karan*, Supreme Court of NJ, 70 A.3d 524, 214 N.J. 384, 8 July 2013.

⁴⁷⁵ 'Both eminent and *immanent* domains constitute a form of violence towards the law as they both "break" a traditional understanding of what property is about. In the first case, the municipality or the State expropriates a group of people, while in the second one, a group of people claims a piece of territory that does not belong to them to build their dwelling.' See Lucy Finchett-Maddock in discussion with Léopold Lambert, accessed 2 February 2015, <https://thefunambulist.net/architectural-projects/legal-theory-architecture-and-the-law-an-epistolary-conversation-with-dr-lucy-finchett-maddock-in-four-letters>

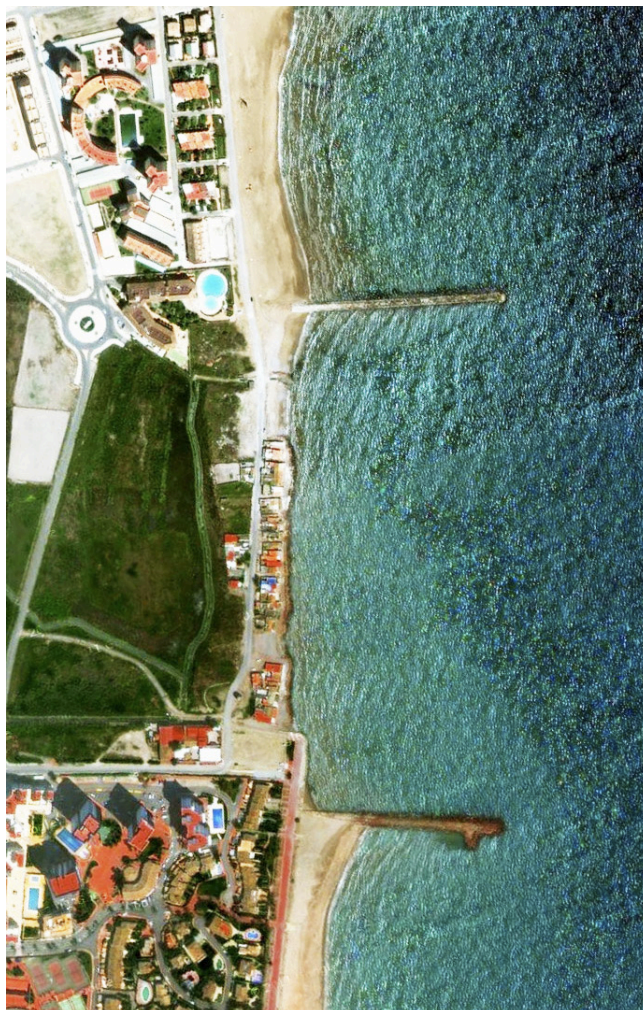
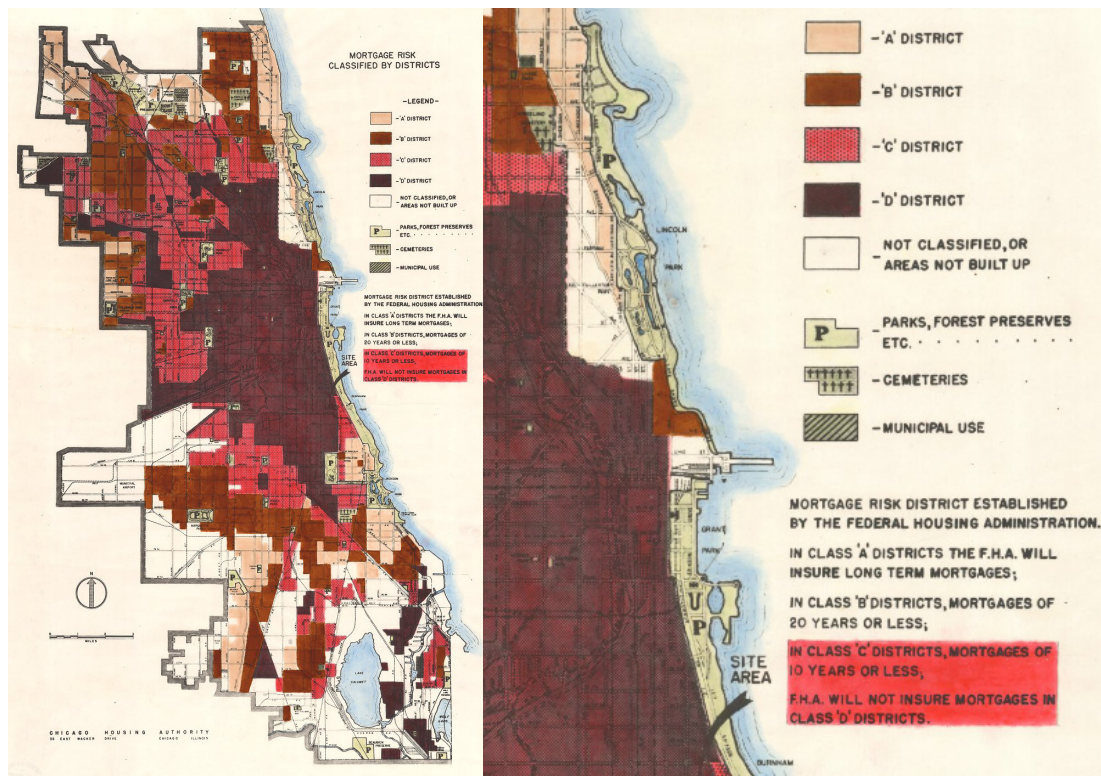
⁴⁷⁶ William R. Maurer, 'False Sense of Security: The Potential for Eminent Domain Abuse in Washington,' *Institute for Justice*, December 2006, <http://ij.org/report/a-false-sense-of-security/>

⁴⁷⁷ Jean-Jacques Rousseau, in Isabell Lorey, *State of Insecurity: Government of the Precarious* (London and New York: Verso, 2015), 32.

⁴⁷⁸ *Ibid.*, 32-33.

⁴⁷⁹ 'Freehold Land Societies,' accessed 28 May 2017, http://www.thepotteries.org/offices/freehold_land.htm

⁴⁸⁰ Colin Ward, *Cotters and Squatters: Housing's Hidden History* (Nottingham: AK Press, 2005), 41-42.



153: City limits through racially profiling mortgage risk: Redlining practices to demarcate urban zones where mortgages should not be granted, Chicago, FHA 1938 (top).

154: Intentional erosion: Letting a beach naturally erode – avoiding human nourishment of the beach – makes it possible to demolish buildings that were previously further inland than now. El Puig, Valencia, 2011. (bottom).

In 2013 the publication of 'Paying Paul and Robbing No One: An Eminent Domain Solution for Underwater Mortgage Debt' changed the status quo by using speculative tactics against speculative practices.⁴⁸¹ Authored by Cornell Law Professor Robert Hockett, it called for the reinterpretation of existing legal frameworks for eviction in the US. Hockett proposed bypassing the impediments of the system through collective agency in order to shape a more hopeful scenario for indebted households.⁴⁸² The right to property is listed under the Universal Human Rights and is included in most democratic national constitutions.⁴⁸³ But in Hockett's approach, property is not only material real estate but also intangible entities, subjectively defined. Hence, private debt can also be subject to expropriation for the common good. This is equivalent to the logic of the Public Trust Doctrine and the common good that applies to tidal zones, but tweaking that collective usership in order to house individuals as part of a larger community of dwellers.⁴⁸⁴

Responding to the social upheaval after the recent economic crisis, Hockett and others proposed this sort of reverse-eminant domain, popular in a range of scholarly publications since 2008.⁴⁸⁵ Using the ambiguity implicit in the common good, the idea was embraced by a minority of local governments in the US.⁴⁸⁶ Democrat Richard Alarcón advocated for reversing eminent domain in the Los Angeles City Council in 2012 to reduce the incidence of foreclosures by redefining the public good of eminent domain, – that is, by using eminent domain to prevent, instead of promote, foreclosures and by seizing intangible mortgages, instead of material property.⁴⁸⁷ Mayor Wayne Smith from Irvington, New Jersey, proposed similar legislation on friendly condemnations in July 2013, and Mayor Gayle McLaughlin from Richmond, California, teamed up with Hockett to devise a scheme through his nonprofit group of venture capitalists Mortgage Resolution Partners.⁴⁸⁸ Bypassing the impediments of the law, they relied on collective agency to renegotiate debt, involving federal, state, and local governance.⁴⁸⁹ From Hockett's perspective, the creative redefinition of the common good was legitimised by the social burden of losing a home, given that evictions add blight to communities, devalue housing prices across the board, and increase public safety concerns.⁴⁹⁰

⁴⁸¹ Robert C. Hockett, 'Institutional Fixes vs Fixed Institutions,' *Cornell International Law Journal* 39 (2006); Robert C. Hockett, 'Bailouts, Buy-Ins, and Ballyhoo,' *Challenge* 52 (2009); Robert C. Hockett, 'Paying Paul and Robbing No One: An Eminent Domain Solution for Underwater Mortgage Debt,' *Current Issues in Economics and Finance* 19 (2013): 1-12.

⁴⁸² Robert C. Hockett, 'Paying Paul and Robbing No One: An Eminent Domain Solution for Underwater Mortgage Debt,' *Current Issues in Economics and Finance* 19 (2013): 1-12.

⁴⁸³ '(1) Everyone has the right to own property alone as well as in association with others. (2) No one shall be arbitrarily deprived of his property.' Universal Declaration of Human Rights, Art. 17, accessed 18 January 2017, <http://www.un.org/en/universal-declaration-human-rights/>

⁴⁸⁴ Bonnie J. McCay, *Oyster Wars and the Public Trust: Property, Law, and Ecology in New Jersey History* (Tucson: University of Arizona Press, 1998), 45.

⁴⁸⁵ Howell E. Jackson, 'Build a Better Bailout,' *Christian Science Monitor* (2008); Brad Miller, 'UnHAMPered: FDR's Superb Fix for our Housing Crisis,' *New Republic* 23 February 2010, <https://newrepublic.com/article/73319/unhampered>; Lauren E. Willis, 'Stabilise Home Mortgage Borrowers and the Financial System Will Follow,' *Loyola-LA Legal Studies Paper* 28 (2008). DOI: <http://dx.doi.org/10.2139/ssrn.1273268>

⁴⁸⁶ The intervention through which any city council could apply it would consist on three steps: identifying the most urgent cases of families, whose mortgage was under immediate threat of defaulting; securing the funds to cover their debt; and refinance the loan to allow the homeowners stay under a reduced monthly payment rate.

⁴⁸⁷ Richard Alarcón, 'Not Your Grandma's Eminent Domain,' *Huffington Post*, 12 October 2012, http://www.huffingtonpost.com/richard-alarcon/foreclosure-crisis-la_b_1954834.html

⁴⁸⁸ 'Mortgage Resolution Partners,' accessed 2 February, 2015.

⁴⁸⁹ Hockett, op. cit., 3.

⁴⁹⁰ Richard Alarcón, 'Not Your Grandma's Eminent Domain,' *Huffington Post*, 12 October 2012, http://www.huffingtonpost.com/richard-alarcon/foreclosure-crisis-la_b_1954834.html

This inversion of eminent domain found opposition in different spheres, the main concern being the violation of the obligation of contracts laid out in the US Constitution.⁴⁹¹ Right after Hockett's concept was put into practice, the Securities Industry and Financial Markets Association, the American Bankers Association, the National Association of Realtors, and some major investors mounted a concerted opposition campaign, which included flying lobbyists to California city halls and pressuring Fannie Mae, Freddie Mac, and the Federal Housing Administration to use their control of the mortgage industry to ban the practice.⁴⁹² At a national level, representative John Campbell, Republican of California, introduced a counter-bill in 2013 that would prohibit Fannie, Freddie, and the FHA from making, guaranteeing, or insuring a mortgage in any community that had used eminent domain as a mode of resistance to foreclosures.

The redefinition and adaptability of eminent domain constituted an imminent threat to established markets when used as a form of neoliberal activism in response to the abuses of speculation. Furthermore, the legal construction of the common good also exposed the abstract character of real estate by questioning how immovable immovable property is.⁴⁹³ Given that real estate can be defined as a social contract between an owner of an object and an entity deprived of that object, the conditions under which that negotiation takes place is what sets the terms for either possession or reversing that possession.

Although Robert Bird argues there is no place in contemporary constitutional systems for ambivalent interpretations, the arbitrary application of power has found a comfortable home in eminent domain doctrine.⁴⁹⁴ Zygmunt Plater and William Lund Norine define this condition as the capricious character of eminent domain.⁴⁹⁵ Hans Lindahl introduces another term to define it: alegality. For him, legal disorder can be classified into illegal and alegal acts.⁴⁹⁶ By deconstructing the insecurity associated to the alegal, the ambiguity of alegality can be reimagined as a productive tool. For lawyer and researcher on Spanish corruption cases Diego Vera Jurado, in countries like Spain the abuse of authority in urban planning through eminent domain is not a result of inadequate laws to prevent it, but instead the one-sided interpretation of these laws according to each judge's political and ethical agenda.⁴⁹⁷ However, media coverage since 2008 of dramatic evictions and eminent domain abuse along the coast in Spain has shifted the judgement of previously neutral arbiters. Without changing the laws, trials today tend to favour indebted households more than they had before the housing crisis began. In this sense, the ambiguity of the law relies on the ethical stance of the arbiter.⁴⁹⁸

⁴⁹¹ 'No State shall enter into any Treaty, Alliance, or Confederation; grant Letters of Marque and Reprisal; coin Money; emit Bills of Credit; make any Thing but gold and silver Coin a Tender in Payment of Debts; pass any Bill of Attainder, ex post facto Law, or Law impairing the Obligation of Contracts, or grant any Title of Nobility.' US Constitution, Art. I, section 10, clause 1.

⁴⁹² Shaila Dewan, 'A City Invokes Seizure Laws to Save Homes,' *New York Times*, 29 July 2013, <http://www.nytimes.com/2013/07/30/business/in-a-shift-eminent-domain-saves-homes.html>

⁴⁹³ Barry Smith and Leo Zaibert, 'The Metaphysics of Real Estate', *Topoi* 20 (2001): 163.

⁴⁹⁴ Robert Bird, 'Reviving Necessity in Eminent Domain,' *Harvard Journal of Law & Public Policy* 33 (2009): 241.

⁴⁹⁵ Zygmunt J.B. Plater and William Lund Norine, 'Through the Looking Glass of Eminent Domain: Exploring the "Arbitrary and Capricious,"' *Test and Substantive Rationality Review of Governmental Decisions* 16 (1989): 663–64.

⁴⁹⁶ Hans Lindahl, 'Border Crossings by Immigrants: Legality, Illegality, and Alegality,' *Res Publica* 14 (2008): 124–125. DOI: 10.1007/s11158-008-9051-5

⁴⁹⁷ Diego Vera Jurado, in discussion with the author, 22 August 2012.

⁴⁹⁸ *Ibid.*

Ambiguity is here instrumentalised through what could be called a double-edged public interest, where the threshold is precisely the matter of concern. In the current Spanish Constitution, several articles reference to the legal figure of 'public interest'. The term intentionally leaves the law open for interpretation; but almost every mention of the common good or the public interest refers to the economics of land use, the construction of housing, or real estate speculation. Several authors have indeed criticised the juridical problem of an imprecise definition of public interest.⁴⁹⁹ According to Pablo Acosta Gallo, the use of the term public interest in the Spanish Constitution is purely a tactic, a wild card that allows for different administrative positions.⁵⁰⁰ The ethics of taking private property for public use or taking public property for private use are completely determined by who defines the common and the good in the common good. Indeed, the public interest and the common good work as ambiguous legal fictions.

3.3 The House Always Wins: Lotteries to Circumvent Debt

Governments, private charities, and civic groups have turned to lotteries and gambling as a means of financing the public good, infrastructure, and services for over 500 years.⁵⁰¹ Strategies to provide immediate or long-term funding to cover expenses or deficits in most cases go beyond the conventional role of public institutions when they are inoperative, uninterested or overwhelmed.⁵⁰² Gambling and lotteries as fundraising mechanisms have been criticised as neither being particularly equitable nor particularly efficient means of revenue generation.⁵⁰³

The national lottery in the UK did not acquire a legal status until John Major's government in the early 1990s embraced it.⁵⁰⁴ Passed in 1993, the National Lottery Act established a national lottery in the UK, the proceeds of which were to be spent on the public good – as opposed to the typical applications for taxes, such as infrastructure or education. Hence, lottery money acquired a contradictory position of being additional while also crucial. The National Lottery was to fund supplementary investments beyond *basic needs* for the common good of the population. With 28p per pound to be dedicated to good causes and capital projects, an era of accidental architectural patronage began.⁵⁰⁵ In the UK, the fantasy of winning eventually built the extension of the British Museum, the Eden Project in Cornwall, the Turbine Hall in the Tate Modern, the Millennium Dome, the Millennium Bridge, and the Millennium Point in Birmingham, among others. Paradoxically, the *unnecessary* became emblematic of society.

⁴⁹⁹ Peter Häberle, *Öffentliches Interesse als Juristisches Problem: Eine Analyse von Gesetzgebung und Rechtsprechung* (Bad Homburg: Athenäum Verlag, 1971).

⁵⁰⁰ Pablo Acosta Gallo, 'El Interés General Como Principio Inspirador de las Políticas Públicas,' *Revista General de Derecho Administrativo* 41 (2016).

⁵⁰¹ John Morgan, 'Financing Public Goods by Means of Lotteries,' *Review of Economic Studies* 67 (2000): 761-762.

⁵⁰² Annual revenues of the overall EU gambling market reach €84.9 billion. See 'Gambling,' European Commission for Growth, accessed 2 June 2017, http://ec.europa.eu/internal_market/gambling/index_en.htm

⁵⁰³ Mary O. Borg, Paul M. Mason and Stephen L. Shapiro, *The Economic Consequences of State Lotteries* (London and New York: Greenwood Publishing Group, 1991); David O. Gulley, and Frank A. Scott Jr., 'The Demand for Wagering on State-Operated Lotto Games,' *National Tax Journal*, 46 (1993): 13-22.

⁵⁰⁴ John Major, 'How I Gave Hope to the Poor,' *New Statesman*, 8 November 1999, <http://www.newstatesman.com/node/150187>

⁵⁰⁵ Rowan Moore, 'The Buildings that Won the National Lottery Jackpot – The Hits and Misses,' *The Guardian*, 2 November 2014, <https://www.theguardian.com/artanddesign/2014/nov/02/national-lottery-funding-buildings-won-jackpot-architecture-hits-and-misses>

But as always, the precise determination of what constitutes public good and public need is ambiguous. Major was criticised on the left for re-establishing the lottery system, based on the fear that lottery sales would be greatest among poorer people most in need of hope.⁵⁰⁶ The gambling addiction of the poor would pay for the monumentality of the nation. As for Major, an advocate for the freedom to choose whether or not to play, the national lottery rather engaged everyone in the collective rebirth of cultural life in Britain.⁵⁰⁷ Contrary to his innocent patriotism, there is scholarly research showing the poor play the lottery more than wealthier groups.⁵⁰⁸ There is an inverse relationship between the socioeconomic position of players and likelihood of lottery gambling, matching self-perceived social deprivation with stronger desires to play.⁵⁰⁹

Thus, the question arises of whether lotteries are more effective at financing the public good than other voluntary schemes.⁵¹⁰ Lotteries rely on the addictive pleasure of gambling across an anonymous (but rarely wealthy) population, while private donations exploit citizens' desire for a public reputation. In 1884, the Statue of Liberty pedestal was built following a campaign by newspaper magnate Joseph Pulitzer, where 125,000 New Yorkers contributed \$100,000 over six months, the majority of which were \$1 or less. Not only did personal pride play a significant role during the crowdfunding phase, but the production of architecture and urban identity was at stake: just like insurance, by spreading the costs and benefits among a group of citizens, the common good is financialised. Conventional lottery, often reinforcing class division, is eventually how the poor pay to enhance public space/cultural institutions, whereas donations are the way in which the wealthy get spaces named after them.

Interdependence in resource distribution has been classified into three categories: domination (one individual decides the allocation of resources on behalf of the rest), communal sharing (resources are pooled and access is given to everyone), and lottery (resources are pooled and one individual takes everything).⁵¹¹ Hence, lotteries operate in an ethically blurry zone between total domination and communal sharing. The ethics behind shared value carry a twofold logic according to the return of the investment. At a monetary level, crowdfunding distinguishes between debt and equity, depending on whether contribution to the common pool implies no direct return, a form of reward, a lending interest, or a share in the venture.⁵¹²

⁵⁰⁶ John Major, 'How I Gave Hope to the Poor,' *New Statesman*, 8 November 1999, <http://www.newstatesman.com/node/150187>

⁵⁰⁷ Ibid.

⁵⁰⁸ Jens Beckert and Mark Lutter, 'Why the Poor Play the Lottery: Sociological Approaches to Explaining Class-based Lottery Play,' *Sociology* 47 (2012): 1152-1170. Accessed 15 October 2014.

⁵⁰⁹ The binary poverty-gambling can be subjectively observed at an urban scale in the higher concentration of lottery-selling stores and betting agencies in lower income neighborhoods.

⁵¹⁰ John Morgan, 'Financing Public Goods by Means of Lotteries,' *Review of Economic Studies* 67 (2000): 763.

⁵¹¹ Daniel Nettle, Karthik Panchanathan, Tage Shakti Rai and Alan Page Fiske, 'The Evolution of Giving, Sharing and Lotteries,' *Current Anthropology* 52 (2011): 750-751.

⁵¹² There are four basic types of crowdfunding: a) Donations: unidirectional gifts like in GoFundMe, Crowdrise.com; b) Rewards: contributors do not receive shares but some sort of reward, like in Kickstarter and Indiegogo; c) Equity: contributors become investors and receive shares in exchange like in OfferBoard, CircleUp, OurCrowd, ASSOB.com.au, AppVested, I-Bankers.com, CrowdCube, Symbid, Crowdfunder.com, EnergyFundrs, KlondikeStrike; and d) Debt: also called 'peer-to-peer lending,' where lenders receive a debt instrument that pays interest return, like in Prosper, Funding Circle, LendingClub or in CommonBond, Sofi, Zero Bound to crowdfund college debt. See Jason Futko, 'Equity vs. Debt Crowdfunding,' *Crowdfund Insider*, 24 September 2014.

Lotteries have been used as an alternative source of revenue to fund large national projects: major land grabs, construction of the Great Wall of China, fortification of cities in the Netherlands, colonisation of Native American territories, the appropriation of Palestinian land, or simply fund wars.⁵¹³ The first modern national lottery in Spain was organised right before the proclamation of the first democratic Constitution in the country's history, which took place in Cádiz 1812. Not coincidentally, the same text redefined water from being 'eminent' to 'public' domain.⁵¹⁴ Back then, it was the lottery, the Constitution, and the public domain that acted as the pillars of the proto-democratic modern Spain.

In the UK, the National Lottery is promoted by Camelot Group Lotteries Limited under the slogan 'serving nations' dreams'.⁵¹⁵ At an urban scale, neoliberal market strategies have allied with city councils or independent citizens to carry out renewal projects with Camelot funding. Furthermore, representative of the idea of 'paying for your city' – which alleviates city authorities from the responsibility of allocating necessary funds – several prominent online platforms have grown within this problematic circulation of capital for the public good, among them: Citizinvestor, Civic Sponsor, IOBY, and Spacehive. The latter is used by the Mayor of London in the same way that New York City Council uses Kickstarter. The platforms promote both social entrepreneurialism and collective funding of the public good (two things that not always have common goals), and at the same time justify cuts in public spending.

As a response, collective fundraising technologies have used speculation to avoid profit-driven debt. As an offshoot of the Occupy Wall Street Movement in New York, the *Strike Debt!* initiative started in 2012 consisted of a decentralised network of debt resisters, including activists, artists, and organisers. It was born to collect donations in order to pay off anonymous debt, claiming that most individual debt is illegitimate and unjust.⁵¹⁶ Their debt resistance generated the *You Are Not A Loan* campaign, whereby the collective would 'buy debt for pennies on the dollar,' but instead of collecting it, they would abolish it.⁵¹⁷ Their aim was to help liberate debtors at random through a campaign of mutual support, good will, and collective refusal; all proceeds of which went directly to buying and cancelling people's debt.

This set of circumvention tactics are described by Michel Feher's as 'investee activism', which argues that the twenty-first century social struggle against neoliberalism cannot be fought in the same terms as nineteenth and twentieth century demonstrations outside factories. Instead, neoliberal violence requires other forms of resistance that incorporate speculation as a tactic. Embedded in Feher's investee activism are crucial referents developed within the Spanish *indignados* movement; namely, public shaming against mortgage abuse in Barcelona and

⁵¹³ David F. Weiman, 'Peopling the Land by Lottery: The Market in Public Lands and the Regional Differentiation of Territory on the Georgia Frontier,' *Journal of Economic History* 51 (1991): 835-860.

⁵¹⁴ Erik Swyngedouw, *Liquid Power: Contested Hydro-Modernities in Twentieth-Century Spain* (Cambridge and London: MIT Press, 2015), 71.

⁵¹⁵ Camelot Group not only appropriates Arthurian mythology in its own name, but it also renamed its new draw machines after Arthur, Guinevere, Lancelot and Merlin for a better selling of hope. This entanglement of magic, dreams, honor, faith and the provision of a unique safe shelter like the Camelot Castle, eventually constitute another form of domination. See 'Camelot Group,' accessed 2 April 2015, <http://www.camelotgroup.co.uk/news/uk-national-lottery-news/>

⁵¹⁶ 'Your Are Not A Loan,' *Strike Debt!*, accessed 28 November 2016, <http://strikedebt.org/>

⁵¹⁷ Ibid.

Madrid.⁵¹⁸ Known as *escraches*, these initiatives would target and invade the private sphere of public figures, namely politicians responsible for evictions and abusive housing policies. A typical *escrache* consists on gathering outside the private home of those politicians, or accompanying them on their morning walk, while holding signs and banners remembering their degree of responsibility in the *unhousing* of indebted families. Through their tactics, the Spanish *Plataforma de Afectados por la Hipoteca* (PAH) has managed to prevent 2045 households from losing their home and rehoused other 2500 people that had already lost it.⁵¹⁹ Taking this approach a step forward and aiming to work alongside the notion of shareholder activism, this thesis looks at initiatives like Hockett's reversal of eminent domain as a proactive way to subvert neoliberal violence. By exposing reputation, littoralisation applies here as a process of offshoring the onshore; in other words, a platform for political constituents to challenge financial capital by simultaneously working within and outside the system.

In a time when indebtedness is jeopardising basic human needs, including the right to housing, unexpected and creative mechanisms of relief have arisen. When governments and institutions fail to provide solutions, unprecedented reactions from inexperienced actors emerge. Interestingly, this destabilising moment in financial capitalism also shows its way of working by revealing citizens' dependency – both economic and psychological. These moments impact not only how citizens react, but also basic understandings of capital – such as the shift in housing from a social right to a form of currency. When faced with situations like these, society as a whole changes, and therefore, moments of relief, rupture, and reinvention appear.

As a practice-based project, this chapter offers the case study of a self-organised house lottery in Andorra, a (former) tax haven that has recently lost its status. The house lottery was a way to crowdfund debt after the 2007 crisis. Sergio Trouillet Alba and Mónica González Lagunilla could not afford the mortgage on their second home in Andorra after it was purchased during the real estate boom for an unrealistic, speculative value. The lack of buyers and the disastrous fall in property prices precluded the possibility of selling, obliging the young couple to pay the contractual debt they could not afford or accept foreclose. Unlike in the US, there is no deed-in-payment in Andorra. They therefore looked for alternatives and ventured to launch a legal, online raffle which, through the sale of 10,000 tickets at €70 apiece, was meant to raise the necessary funds to pay off their loan and award a lucky winner a debt-free home.⁵²⁰

In order to provide a legal framework for their initiative, they reached out to Ripoll law firm to develop a contractual agreement that would set the guidelines for the lottery, while establishing a precedent that could be applied in similar cases.⁵²¹ Even if legal supervision was required, the guidelines were freely available online. According to Trouillet, their bank gave its unreserved

⁵¹⁸ Led by the *Plataforma de Afectados por la Hipoteca* (PAH), accessed 7 May 2017, <http://afectadosporlahipoteca.com/category/propuestas-pah/escrache/>

⁵¹⁹ Ibid.

⁵²⁰ Their raffle revolved around a property consisting of a 100m² duplex with a 22m² terrace, 3 double bedrooms, 2 full bathrooms, a kitchen, a large living room, a dining room, a parking space, and a storage room.

⁵²¹ See Project Dossier 3.

agreement to the idea of the lottery, seeing it as a win-win for both parties.⁵²² The contract stated that the winner of the raffle would receive complete ownership of the unit with all community expenses paid for until the date of the notarial acquisition. The final draw was to take place as soon as 10,000 tickets were sold.⁵²³ The house was to be won completely free of taxes, since the expenses for the legal transfer – 4.5% of the value of the house – were already budgeted and covered by the lottery. The raffle was not organised with the goal of making a profit, but rather to raise the exact amount of the debt and corresponding fees.

The lottery in Andorra (2013) is a pioneering example of circumvention tactics to deal with exorbitant interest rates. The raffle provides a framework for circumventing a mortgage contract, where a lucky participant wins a house, the bank recovers debt, and Trouillet and González lose their debt. The house lottery in Andorra failed. Its end was scheduled for 15 August 2013, as the Andorran government was changing gambling laws in a way that would prevent such crowdfunding initiatives from happening again. By that time, the couple had not managed to sell all the tickets, and instead had to return the raised funds back to all participants.

Apart from the house lottery in Andorra, there have been other attempts to raffle property in different countries. Charity fundraising through house lotteries and other profit-oriented initiatives have nonetheless been excluded from this thesis, since they do not contribute new narratives of investee activism.⁵²⁴ The cases that were instead chosen turn gambling into a resource for resistance to the housing crisis through ambiguity in the law. Even if in different geographical locations and juridical frameworks, the cases compiled in the Project Dossier 3 share one elemental concept: circumventing existing regulations in order to relieve indebtedness when the state fails to offer support.

3.4 The Housing Act: Organisation of a House Lottery in Lisbon

In the third quarter of 2012, over 1,100 houses in Portugal were repossessed by banks to refinance debt.⁵²⁵ Like in other countries after the financial crisis, the foreclosure of indebted properties simply added assets to the geography of offshore ownership without empowering households or addressing the problem. However, in parallel to the pioneer case in Andorra, an equivalent raffle was launched in the outermost region of the Azores archipelago. The organiser, Nuno Miguel Amador da Costa Paiva, set out to raffle his home in San Miguel de Azores by selling up to 40,000 tickets at €5 apiece. He took advantage of the autonomy of the offshore territory to set up a house lottery that was otherwise not allowed in continental Portugal, as the Vice-President of the Government of the Azores Autonomous Region authorised the raffle before the Portuguese Ministry of Internal Administration declared such lotteries illegal.

⁵²² Sergio Trouillet, in discussion with the author, 13 April 2013.

⁵²³ If a minimum of 9,500 tickets was not sold by August 15, 2013, the organiser would decide to proceed with the draw or, alternatively, cancel the lottery and return the money to every participant (minus €1 in management fees of online wire transfers).

⁵²⁴ See 'Raising the Roof for Charity,' accessed 3 May 2014, <http://raisingtheroof.net/>; and 'Win Your Dream Home,' accessed 3 May 2014, <https://winyourdreamhome.co.uk/>

⁵²⁵ 'Thousands of Homes Repossessed,' Portugal Resident, 2 October 2012, <http://portugalresident.com/thousands-of-homes-reposessed>

Framing the house lottery as a mode of resistance that uses ambiguity and loopholes in the gambling law to explore debt relief alternatives, the practical component of this chapter consisted of organising a similar lottery in Lisbon. Titled *The Housing Act*, the project was commissioned for the Lisbon Architecture Triennale 2013, within the New Public programme.⁵²⁶ It explored the abuses of neoliberalism from within and replicated the process from Andorra and the Azores.⁵²⁷ Not only did the obstacles to implementation in Portugal reveal the existing power structures, but they also inspired new circumventions to those rules. In that sense, the research methodology is one of productive failures, as every obstacle created the need for a redefinition of the method itself. This section is structured around eight obstacles and the devices or tactics generated to bypass them. The project involved advice from Abreu Advogados and their expert on Corporate and Commercial Law, Intellectual Property, IT, and Gambling Law Elisa Pereira, who aids a number of international corporations on organising raffles in Portugal.⁵²⁸ Firms like Coca-Cola require such services when launching a 'lucky cap' raffle to win a car, for example. Working together for a year, the local law firm provided their expertise as well as guidelines on the threshold between legality, illegality, and a legality and lawful circumventions of the law.

Obstacle No. 1: Monopoly of Gambling Activity

Circumvention No. 1: Rename 'Gambling Activity'

The Portuguese Gambling Law *Lei do Jogo* DL 422/89, passed in 1989 and modified six times prior to the most recent version, DL 111/2011, was the framework shaping *The Housing Act*. An upcoming modification that would regulate some of the lesser-defined transnational loopholes of online gambling had already outraged many in the remote gambling sector.⁵²⁹ *The Housing Act* had initially set out to turn the lottery guidelines into an open-source manual, globally available to organise any house lottery, however, the necessity of specific circumventions tailored to particular legal obstacles precluded a universal method. Hence, the open-source side of the project was dropped from the very beginning. Nonetheless, the guidelines and contract would still be available online as a basis for future iterations.

The first obstacle was that the owner of the Portuguese gambling monopoly also happened to be one of the largest landowners in Portugal. Any gambling activity in Portugal must be approved by the Santa Casa da Misericórdia (the Holy House of Mercy), which has controlled gambling in the country and its overseas territories through a network of outposts all over the former Portuguese empire since its foundation in 1498. The Holy House of Mercy is a charity that empowers the poor according to a Christian morality, and national gambling money is one of the main sources of funding for its activities. Its other main source of income is real estate, either historically owned by the Foundation or inherited from deceased, pious citizens. Popular

⁵²⁶ Chief curator of the Triennale was Beatrice Galilee; and curator of its New Publics programme was José Esparza Chong Cuy.

⁵²⁷ Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London and New York: Verso, 2014), 222.

⁵²⁸ Abreu Advogados is one of the leading law firms in Portugal and the 2011 Legal Team of the Year at the British Legal Awards.

⁵²⁹ Ana Torres Pereira, 'Lei do Jogo em Portugal Vai Tornar o Mercado Inviável para os Operadores de Apostas Desportivas,' *Jornal de Negócios*, 3 July 2013, http://www.jornaldenegocios.pt/empresas/turismo---lazer/detalhe/lei_do_jogo_em_portugal_vai_tornar_o_mercado_inviavel_para_os_operadores_de_apostas_desportivas

knowledge claims that Santa Casa inherits a property a day on average.⁵³⁰ In September 2010, Santa Casa, which also holds an exclusive right to Internet sports betting, opposed the Portuguese government's attempt to liberalise the online sector, and lobbied to keep control of it as the most adequate way of protecting the people from gambling-related psychological problems. Catholic moral was used to shape citizens' spiritual discipline while protecting their own assets.⁵³¹ Not only did Santa Casa refuse to participate in the house lottery, but they also refused any permit to run a gambling activity on Portuguese grounds. Santa Casa's prohibition was bypassed by not organising any *gambling* activity. Instead, *The Housing Act* had to remove any component purely based on luck.

Obstacle No. 2: Taxes on Games of Chance

Circumvention No. 2: Games of Skill Are Not Taxable

Apart from Santa Casa, there exists a second body supervising gambling: the Portuguese Ministry of Internal Administration (MAI). According to national gambling law, for every game of chance, and even more when real estate is to be awarded, a proportional amount of the prize is taxed and must be paid before the game is launched. Nonetheless, this rule does not always apply. Raffles are extremely popular in Portugal during summer festivities in rural areas, generally with the aim to collect petty cash for a local cause, and where prizes like a live turkey are often given away. If these situations were to strictly follow gambling laws, organisers would have to pay the government approximately half the value of the turkey in advance in order to apply for permission to organise the raffle. However, the value at stake is so irrelevant that rarely anyone follows the protocol. But if the prize consists of real estate property worth €200,000, €100,000 plus additional fees needed to be paid to MAI before the application to obtain permission can be submitted. According to the lawyer's estimations and experience, this would take a minimum of two months.

Two indebted households had managed to get permission to organise house lotteries in the Azores in 2012, again taking advantage of the EU Outermost Territory status, which had shifted MAI's position from neutral ignorance to straightforward antagonism. MAI had recently announced that house lotteries were illegal and that any raffle or contest had to be validated by their general secretariat. The offshore lottery cases in Azores had somehow challenged the role of the Portuguese authority and terminated their openness to evaluating such applications properly. The way to bypass taxation on the prize again required the removal of any component of chance.

Hence, luck became a matter of skill arbitrated by a jury. The lottery thus had to become a competition, and appear as an advertising-driven raffle. Given that it was part of the Lisbon

⁵³⁰ This claim kept reappearing in a number of interviews with local Lisbon activists, but could not be grounded with official data.

⁵³¹ Immediately after, the European Court of Justice ruled against Santa Casa in a similar long-term dispute with Austrian-based sports betting house *bwin*, hence, succeeding in setting the foundations to open up the gambling monopoly. See Daniel Macadam, 'Santa Casa Snipes at Portuguese Online Gambling Reform,' 17 September 2010, https://gamblingcompliance.com/premium-content/insights_analysis/santa-casa-snipes-portuguese-online-gambling-reforms

Architecture Triennale, *The Housing Act* was re-framed as an 'architecture skills contest'. The media strategy for the project had to carefully word its communication as a contest where the prize consisted of a house, rather than selling a house through a contest. Since *The Housing Act* had ceased to be a formal lottery, no physical ticket could be sold. Taking advantage of the outdatedness of the gambling law from 1989, whose later modifications did not even properly respond to online, remote gambling, the project devised instead online participation fees. By blurring the geographical location of the participation fee, ambiguity in whether the location of the participant or the location of the award was most relevant also offered legal protection in case of a lawsuit.⁵³² According to the law, a skills contest had to use the term *pasatempo* (pastime). Eventually, the competition brief was to answer a simple question in 150 characters, approximately the length of a tweet. If the formulated question lacked a real answer, it would allow for different interpretations, which could become a productive input for the development of the project. The question chosen was: *What is the value of a house?*

Obstacle No. 3: Impartiality of Value Judgment

Circumvention No. 3: Crowd-Voting

Skills contests require a neutral value judgment through an arbiter/referee/jury who decides impartially and intelligently, which meant the jury required independent and external members. But instead of a physical judge, in order to make the process public, the voting was to be done online. Rather than relying on the individual opinions of a body of judges, the project aspired to base the decision on an audience formed by transnational voters. This online voting avoids erroneous judgement by individuals partaking in subjective decisions. However, it has also been questioned in the case of political elections whether full anonymity is possible and whether online voting jeopardises the chances of non-discriminatory access to the election process.⁵³³ Concerning anonymity, *The Housing Act* aimed precisely for the opposite, given that full visibility of the voter's identity would attract more supporters.

Far from implying a better form of democracy, online voting still does not rely on equal empowerment of participants, since the more extended social networks, the more possibilities of success. Even if the software was designed in order to avoid recurrent voting, prioritising popular online users was still an ethical challenge. This was taken as a lesser evil, and became an advantage in the ultimate aim of fundraising. Participants requesting votes from their social networks could function as a useful marketing campaign relying on a sort of improvised chain-effect, which would in turn spread the knowledge of the contest to larger circles. Thus, participants themselves would disseminate the concept of *The Housing Act*. The public display of answers was pivotal for the project. The website interface showed the submitted responses in two forms: on random display, and organised by date of entry and popularity. *The Housing Act*

⁵³² The house lottery in Andorra already contemplated the risks of money laundering encouraged by this digital condition. The organisers introduced a guideline limiting the maximum amount of tickets bought by one individual. Purchases of more than 214 tickets, or €14,980, were subject to an act of money laundering or terrorist financing, and therefore had to provide information on the source of funds and the true identity of the beneficial owner.

⁵³³ Mieke Loncke and Jos Dumortier, 'Online Voting: A Legal Perspective,' *International Review of Law, Computers & Technology* 18 (2004): 59-79. DOI: 10.1080/13600860410001674742

online platform was constantly updated so that any viewer could see the winning answer and its corresponding vote count in real time.

Obstacle No. 4: The Material Transaction of Entering a Contest

Circumvention No. 4: Buying Services

A lottery ticket or a competition entrance fee is neither a legitimate title nor a contract legitimising the transfer of real estate property from one party to another. In skills contests, the prize itself has to be a secondary subject. In raffles organized through bottle caps on soda bottles, all buyers or raffle-participants receive one litre of soda, even if they do not win. The aim of the soda company is not to give a car away, but to sell more beverages. In order to follow this logic of advertising-driven contests, the material value of the object of transaction had to be supplemented or emphasised. Participants in *The Housing Act* had to receive an asset in return.

Entering *The Housing Act* architecture competition, the receipt or ticket had to equate to something that every participant was entitled to receive regardless of the chances of winning the prize. A receipt is the material object that results from an exchange agreement between two or more parties in order to prove, undo, or alter the transaction. In most cases, the receipt carries no material value, the value is only to secure against future attempts to deny that such a transaction ever occurred. Like debt, the receipt becomes a form of speculative currency. But the object of transaction had to follow the philosophy of the organiser, in this case the Lisbon Architecture Triennale. Hence, taking advantage of the context of the project, the receipt equalled a Lisbon Architecture Triennale membership. The economic value of such membership consisted of access to e-publications and VIP events, and was similar in price to the actual participation fee for the competition (€30-50). Indeed, the Triennale agreed to this option, as they would also benefit from increasing their membership.

Obstacle No. 5: Raffling a Property One Does Not Own

Circumvention No. 5: Shared Ownership

Even if 70% of Portuguese citizens are indebted and *The Housing Act* was not for private gain but for the public interest, solving only one household's debt was not regarded as in the public interest. Although the lawyer saw this as a weak point in the legal case, we argued that precisely because of its unique character it provided a prototype test for the common good. In order to transfer the ownership of property from one subject to another, it has to be owned by the first subject. When seeking an indebted property to raffle, determining the actual degree of indebtedness or ownership that the project could work with was significant. Should the chosen house have already covered over 50% of its mortgage, so that the household would own more than half of the house? What situation would offer the most common good? Which proportion of the total debt should the fundraising process cover: the original value that the household had paid, the current value of the house, or the remaining amount on the mortgage? Given the multiple possible scenarios, this question had to be solved according to the specific case of the property to be raffled, once it was found.

The fractional condition of ownership in instalments also posed challenges for the legal consultant, especially because *The Housing Act*, as an organising agent, had no shares in the ownership of any piece of real estate. This was nonetheless crucial for simplifying the taxes on the transmission of the property to the winner. The fees of the public notary certifying the transmission, which had to be included in the fundraising process, would be significantly reduced if the house was transferred from the indebted owner straight to the winner, without any intermediary transmission to the Architecture Triennale. Therefore, to bypass the lack of ownership and reduce the taxes of the transmission, there were two options: either the organisers became co-owners of the indebted property; or the indebted owner became co-organiser of *The Housing Act* through a private partnership agreement. The latter option was obviously more feasible.

Obstacle No. 6: The Supporting Bank Threatens to Pull Out

Circumvention No. 6: Re-negotiate Reputation and Creditworthiness

The main sponsor of the Lisbon Architecture Triennale was Caixa Geral de Depósitos (CGD), one of the largest savings banks in Portugal. However, the CGD refused to help find solutions to problems in Portuguese society it was accountable for. Instead, Portuguese banks have adopted the strategy of improving their reputation by renegotiating mortgages on a one-to-one case and without much publicity. Given the large number of properties being repossessed and accumulated by banks, one of these common readjustment measures consisted of moving an indebted customer into a smaller house also owned by the bank. By means of exchanging a large property for a more affordable one, the indebted customer reduces the amount owed to the institution while avoiding immediate eviction. This renegotiation ensures the bank's liquidity, and also perpetuates the agony of mortgages for indebted households.

However, the CGD agreed to collaborate with *The Housing Act* to explore alternatives together. Their role was to provide a 'toxic' property from one of their indebted customers and try to devise a win-win-win situation. This would also ensure that the owner of the property was an organiser of the competition. However, after initially agreeing on the benefits of approaching the social drama of indebtedness from the angle of the project, the CGD's Department of Finance and Real Estate Business worried that the project would increase the already-damaged public reputation of the bank. On top of that, they argued that making 10,000 people pay for one person's debt was hypocritical. In an unexpected reaction, the bank felt its image was at risk and threatened to terminate any involvement with the Triennale if *The Housing Act* were to go ahead. This confrontation led to a critical moment with the curatorial and executive team, as the possibility of losing their sponsorship implied the cancellation of the whole Triennale, putting all the staff at risk of losing their positions and salaries.⁵³⁴

Not only did the savings bank threaten to withdraw its support. One of the most respected and trustworthy institutions defending the public interest and the common good in Portugal, the

⁵³⁴ A similar situation had already happened two years before *The Housing Act* started, when the Ministry of Culture of Portugal, the former main sponsor of the Triennale, was simply disestablished in 2011 from the country after the cuts.

Portuguese Consumer Protection Association (DECO), did as well.⁵³⁵ Functioning as an independent national observer, DECO bears tremendous influence by channelling citizens' complaints to the upper echelons of power and implementing measures against everyday political and economic abuse. In 2000 DECO filed 152 complaints regarding debt from citizens who could not pay their mortgage; in 2012 they filed 5,407, over 35 times more.⁵³⁶ In discussion with lawyers from DECO about emergency rehousing practices implemented by banks, they warned of a new housing bubble. In order to reduce the amount of vacant properties in stock, banks were giving better mortgage conditions to those purchasing their own repossessed properties than what they were offering for houses on the open market. This had led to a critical situation where the association of real estate agencies in Portugal had begun to fight against banks for unfair competition and conflicts of interest.

DECO also initially agreed to collaborate on *The Housing Act* and provided dozens of letters of complaint from consumers who had approached them desperate for advice, as well as photographs of their underwater properties, and all without disclosing any private information. DECO even began offering citizens the possibility of raffling their indebted property through the project. However, as with CGD, after three months of collaboration, DECO decided to pull out. Given the misunderstanding that the project was generating among citizens approaching them for debt-relief consultancy, DECO expressed that they could not risk their own reputation as neutral arbiters by offering this sort of solution. Either they provided answers to people's problems or they did not. It was unacceptable to gamble with the everyday struggle of indebted citizens.

Despite losing the two main institutional allies, it was agreed to go ahead and work more closely with the legal consultant to demonstrate that nothing illegal was being done. On the one hand, losing the bank as a collaborator implied that the media strategy had to be completely detached from their name if their sponsorship of the Triennale was to continue. On the other hand, losing DECO as a collaborator implied that the project would need to find a property directly from an indebted household willing to independently take part in the experiment.

Obstacle No. 7: The Misfunctioning Empowerment of Citizens

Circumvention No. 7: New Alliances

Although the 2007 Treaty of Lisbon introduced the European Citizens' Initiative (ECI), a tool to allow citizens to propose legislation to the European Parliament, Portuguese housing activism struggled with the difficulty of modifying their malfunctioning legal system.⁵³⁷ Any ECI requires backing from at least 1 million EU citizens, coming from at least 7 out of the 28 member states. A similar instrument exists at the Portuguese level to bring a citizens' initiative to the national parliament with 35,000 signatures. However, the only time that such an attempt managed to

⁵³⁵ *Associação Portuguesa para a Defesa do Consumidor* was funded only two months before the Carnation Revolution 1974, the event that marked the end of dictatorship and the beginning of democracy in the country.

⁵³⁶ DECO, report on Indebtedness 2013.

⁵³⁷ The rules and procedures governing the citizens' initiative are set out in an EU Regulation adopted by the European Parliament and the Council of the European Union in February 2011. It nonetheless started operating in 2012.

force a debate in the Portuguese Parliament the MPs discussed the reform for less than 10 minutes, discouraging others from attempting again.⁵³⁸ If the financial forces affecting the housing crisis are increasingly an economic issue on the European and global scale, the challenge for housing activism is to move more and more towards a transnational framework of action. Portugal was the first European country to recognise the right to housing in a national constitution after the UN Charter of Universal Human Rights, but like its neighbouring Mediterranean countries, the country is hurt by the lack of a common housing policy across the EU.⁵³⁹

Even if the ECI is based on shifting the geography of active democracy, current power structures together with such a divided approach to housing across the EU still constitute a significant burden. *The Housing Act* revealed the lack of collaboration among housing rights activism in Europe, and even within the city of Lisbon and Portugal, that results from mistrust and variable approaches. A former member of a Lisbon-based housing activist group, HABITA, had used the organization mission to build her own political career straight into City Hall, generating suspicion and scepticism about actual interests in fighting together for the common good.⁵⁴⁰ The question of whether non-governmental activists should appropriate governmental practices as a tactic has emerged across a multiplicity of approaches to the housing crisis in Lisbon.

Constant fear of spokesmen taking over a collective aspiration perpetuates the disorganisation across housing rights activists. In meetings with local actors, those of us working on *The Housing Act* were warned to avoid these dynamics and were recommended to regularly publicly assert the project as an aggregator without any ambition for leadership in the housing movement.⁵⁴¹ While the legal problems with the lottery were still developing, *The Housing Act* website was launched, but intentionally limited to a public archive of non-state actors in and outside Europe fighting for more humane housing policies. The fact that there is neither a common European policy on housing struggles nor a common platform aggregating transnational housing activism put us in a position to provide one.⁵⁴² The database of networked knowledge on housing struggles blurred national borders. It visualised how regions in Southern Europe mainly struggle with evictions and indebtedness, whereas northern countries fight for more rent control. This, in time, exposed the divide between Mediterranean and Northern European nations in the approach to the housing question; a distinction in how national governments have subsidised either homeownership or rentals, and the ways speculative interests have emerged differently in each context.

Apart from indebtedness, the second main struggle that emerged in conversations with housing activists was the end of old tenancy agreements. A new law about to be passed in Portugal

⁵³⁸ Architect and activist Tiago Mota Saraiva (Ateliernob), in discussion with the author, 18 August 2013.

⁵³⁹ Portuguese Constitution 1976. Art. 65

⁵⁴⁰ Housing activist Rita Silva (HABITA), in discussion with the author, 19 August 2013.

⁵⁴¹ Ibid.

⁵⁴² 'The Housing Act,' www.housing-act.com (defunct)

while *The Housing Act* was being developed would oblige any tenant paying dated rental amounts to immediately terminate the agreement and vacate the corresponding dwelling. This implied a dramatic quantity of evictions for tenants who had been living in the same home for decades. Furthermore, it would open the market for European developers to renew derelict properties in downtown Lisbon, something that was previously not economically viable. This lobbying operation, which was also implemented in Spain in January 2015, appropriated the narrative of solving the national economic crisis as well as the housing problem by creating new speculative developments that would attract offshore ownership. Once again, turning the city into property was part of the neoliberal engine for the circulation of capital. This has made Portugal an attractive and lucrative market for offshore ownership, boosted by new EU regulations that offer citizenship to non-EU buyers of real estate worth at least €500,000.⁵⁴³ Paradoxically, Lisbon has now turned into an attraction for a new wave of young European migrants, who are escaping the violence of unaffordable rentals in Northern European cities and freelancing remotely.

Obstacle No. 8: The Possibility of Not Selling All Participation Tickets (Insurmountable)

In a meeting with sociologist and legal scholar Boaventura de Sousa Santos in Lisbon, we presented all the obstacles and circumventions to the project. He encouraged *The Housing Act* to nonetheless go ahead:⁵⁴⁴

Why are you so worried about following the law? Our politicians have been constantly breaking the law, being involved in serious criminal activity, taking this country to bankruptcy, and they are still in power. Why should you worry about trying to do good to society while breaking a law that they do not even respect?!

Despite his encouraging words, in August 2013, the legal consultant for the project withdrew, refusing to risk their reputation as one of the best-respected Portuguese law firms. Even if the lottery/competition was to go ahead, the possibility of not selling all participation tickets was still unresolved. Following Andorra's model, returning the money to participants was proposed as a last attempt.⁵⁴⁵ As an initially agreed disclaimer, each participant would have to accept the chance of getting their money back if all the tickets were not sold. However, lawyers argued about the insufficiency of such a procedure in the Portuguese legal context, since expectations for a prize cannot be created without delivering the prize. This, and the possibility of any lawsuit against us (with or without reason), became a serious matter of legal concern.

One week before the official launch of the project and after a very intense year of meetings, interviews, skype calls, phone calls, translated mediations, and field visits, *The Housing Act* was officially cancelled.

Even if the intended outcome never happened, the failure to launch the lottery was nevertheless a method for investigating how to operate through circumvention. Despite all the criticism and

⁵⁴³ DLA Piper, 'Real Estate Investment in Portugal: The Legal Perspective,' accessed 18 October 2014, <http://www.dlapiperrealworld.com/export/sites/real-world/brochures/downloads/Portugal-Investor-Guide.pdf>

⁵⁴⁴ Boaventura de Sousa Santos, in discussion with the author, 23 April 2013.

⁵⁴⁵ Through online transfers minus €1 administration fees.

moral dilemmas encountered along the way, the most interesting outcome was the shift in the way collaborators first loved the project and then rejected it as totally unethical or detrimental to their public reputation or easily misconstrued by third parties. It is precisely that level of self-interest to protect themselves from ambiguous judgements that made them change their mind, which remains the most valuable revelation of the project. Furthermore, it showed the real possibility of operating within and outside the limit, of circumventing the law, and of instrumentalising the ambiguity of what is legal or illegal within gambling for deviant purposes. It is in all the obstacles encountered, where the logic of a counter-speculative system of littoralisation unveils new horizons for resistance.

PROJECT DOSSIER

3

This section departs from the notion of the Offshore as introduced in Chapter 3 to look at the housing crisis and the existing shift from owning the shore to offshore ownership. The project then investigates counter-speculative systems. It takes Robert Hockett's reversal of eminent domain as a reference to bypass the impediments of the underwater mortgage debt system and shape a more hopeful scenario for indebted households. As explained in pages 188–197, the project of the house lottery in Lisbon looked at Andorra and Azores as sites of exception where also alternatives to the housing crisis were devised by residents that took advantage of ways to reverse the law while staying within the law. As part of the practice methodology, the project established a year-long working relationship with a Portuguese lawyer with expertise on gambling cases, while working with housing activist movements. Analogous to the way in which the boundary of the shoreline is redefined to accommodate interests and generate real estate profit margins, the littoral condition helped instead to detect opportunity scenarios to overcome the inequalities imposed by the lack of a housing politics in post-crisis Iberia. The project here serves to propose a shift from *deteritorialisation*—the removal of ties between culture and place—towards *littoralisation*: a framework that this thesis puts forward to incorporate the boundary as a constantly shifting entity and productive blurry buffer zone. Taking as a reference model the constant redefinition of what offshore space actually is, the project developed in this section takes advantage of that condition operating beyond the realm of the state to identify loopholes that can operate as a form of resistance in the housing crisis. In this sense, the littoral becomes a condition to navigate *financially* built environments and propose alternatives to the exploitation and abuse inflicted by power structures in their failure to solve housing inequalities. Hence, zoning and other processes related to the demarcation of buildable land as unpacked in this thesis, culminate here by associating littoral and housing, obstacles and circumventions, as successful forms of practicing within a collaborative transdisciplinary understanding of the architectural discipline.

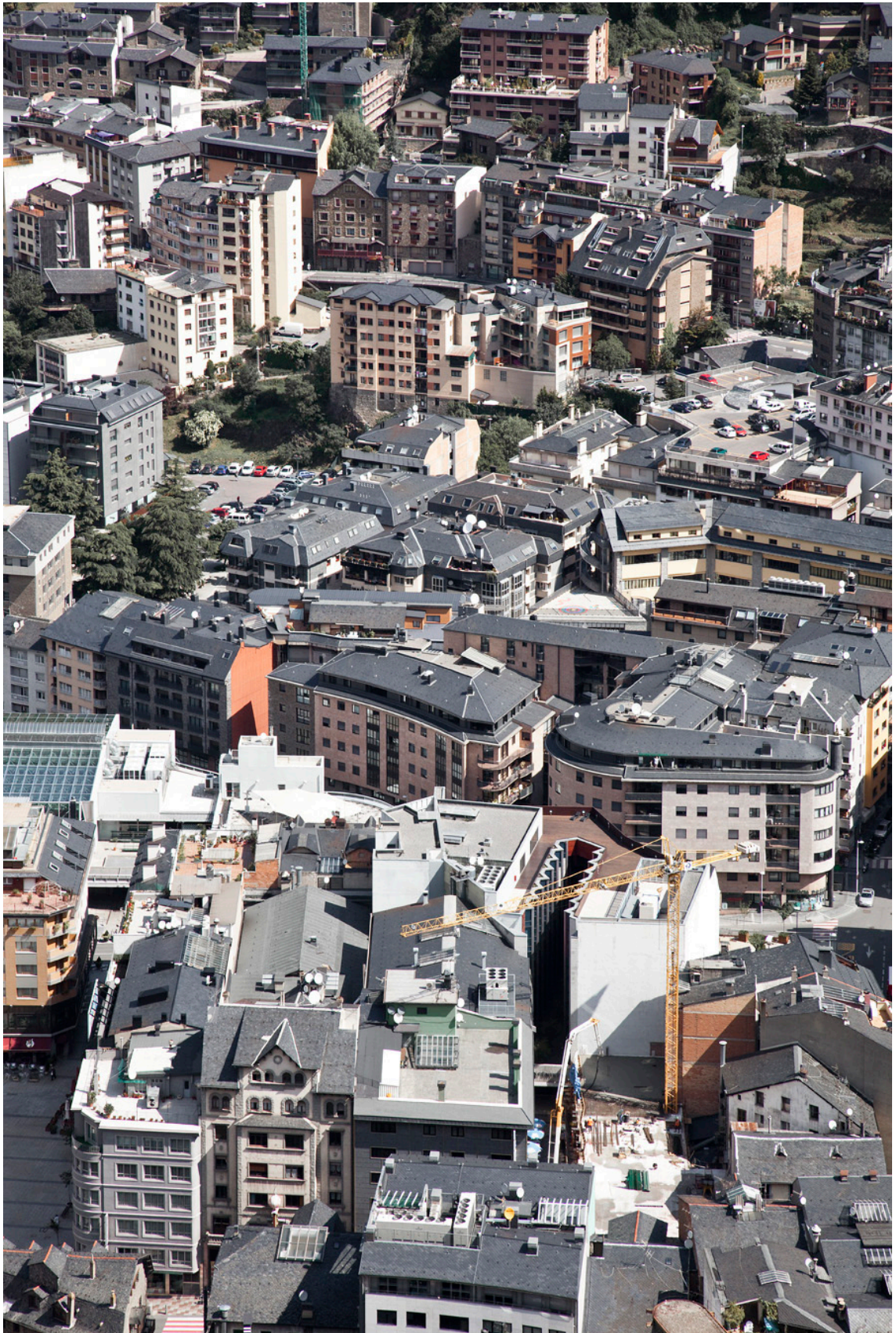
II The Housing Act

A site-specific project by Daniel Fernández Pascual, for the 2013 Lisbon Architecture Triennale, New Publics Programme, curated by José Esparza Chong-Cuy.

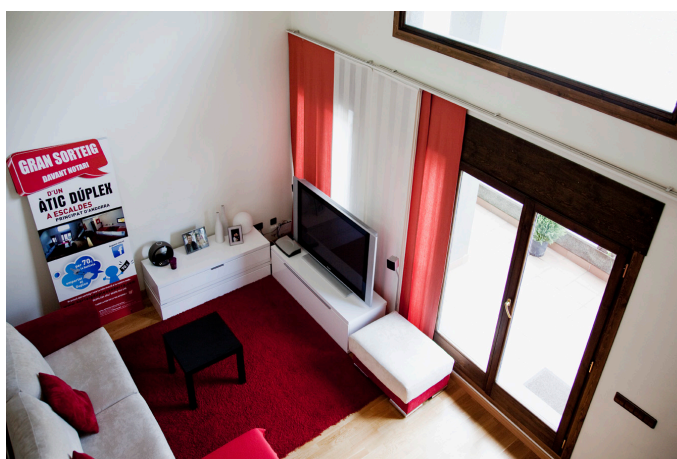
Photographic series of the house lottery in Andorra by Simona Rota, 2013 (Figs. 155-164 in this and upcoming pages); other international cases of house lotteries to circumvent debt (Figs. 165-175); and *The Housing Act* launch in Lisbon, 2013 (Figs. 176-179).















165: House Lottery AZORES-1, Portugal.

Indebted organiser: Nuno Miguel Amador da Costa Paiva.

Location: Rua do Jogo 1, 2º D, Ribeirinha, Ribeira Grande, San Miguel, Azores Archipelago (EU Outermost Territory).

Lottery Dates: 23 December 2011 (launched); 2 January 2012 (authorised); 22 December 2013 (end).

Number of Tickets: Up to 40,000 tickets.

Ticket Price: €5

Total value to be raised: €80,000

Selling via: email and website.

Sold: 25% of the tickets

Other features: built in 2007; living room, two bedrooms, kitchen, bathroom and balcony.

The organiser had authorisation from the Vice-President of the Government of the Azores Autonomous Region. However, after the Portuguese Ministry of Internal Administration declared such lotteries illegal, nobody bought any more tickets.

Web: <https://sites.google.com/site/rifoapartamento/>

Phone conversation held with Nuno Miguel Amador da Costa Paiva. 23 August, 2013



166-167: House Lottery AZORES-2, Portugal.

Indebted organiser: João Fontinha.

Location: Rua dos Moinhos 5, Furnas, San Miguel, Azores Archipelago (EU Outermost Territory).

Lottery Dates: 10 May (launched) - 1 October 2012 (end).

Number of Tickets: Up to 35,000 tickets

Ticket Price: €5

Total value to be raised: €100,000

Selling via: phone, e-mail, local shops and Facebook page.

Sold: around 8,000 tickets.

Other features: 75% renovated. 120m² built area and 100m² usable area.

Fontinha's salary was €1,500/month. After becoming unemployed with a €600 monthly subsidy, he could no longer afford the €400 monthly mortgage.

According to a telephone conversation held in August 2013, Mr Fontinha aimed to raise just the value of his debt without any additional profit. Eventually, Fontinha only raised 30% of the total amount of money he needed. In a sympathetic reaction, the semi-autonomous government of Azores decided to buy the house and donated it to a family in an even harsher economic situation.

Web:

<https://www.facebook.com/pages/Doar-Casa-Furnas/418317628199931>

<http://www.idealista.pt/news/imobiliario/habitacao/2012/02/06/6116-rifar-a-casa-para-pagar-ao-banco>

<http://expresso.sapo.pt/desempregado-vende-casa-em-rifas-para-pagar-divida-ao-banco=f702946>



168: House Lottery ELVAS, Portugal.

Indebted organiser: Elsa Carvão.

Location: Terrugem, Elvas

Lottery dates: September 2012 - December 2013.

Number of tickets: 15,000

Ticket Price: €5

Total value to be raised: €75,000

Sold: 1,000 tickets

Other features: The organiser followed the model authorised in Azores, which was declared illegal in continental Portugal. Aware of the risk of not having an authorisation, desperate indebtedness encouraged her to continue the lottery. Carvão had already spent the money she raised on medicines to palliate her Parkinson. The house was to be won without any debt attached to it. According to a phone conversation held with Carvão, she approached the Lawyers Association to request an authorisation, who declined her request for lack of information. The same happened to her in the Finances department; the City Hall had not got back to her and the Ministry of Internal Administration already declined her petition without providing any alternative. To date of conversation, Ms Carvão acknowledged not knowing the due taxes for such a fundraising process.

Web: <http://rifoapartamento.com/>

Phone conversation held with Ms Carvão, 25 August, 2013.



169: House Lottery AVEIRO, Portugal.

Indebted organiser: Rui Caetano, Aveiro.

Date: 2009

Location: Rua Nª SRª de Fátima 8, Ouca, Vagos, Aveiro, Portugal

There have been more unsuccessful house lotteries attempts at a very small scale with little mediatic impact in Aveiro (<http://aminhacasapor5euros.com/>), Algarve, Mafra, Covilhã and Setúbal.

Web: <http://moradiabarata.blogspot.it/>



170: House Lottery NEW SOUTH WALES, Australia.

Indebted organiser: Peter Brandson

Dates: July 2014

Value of the house: \$2.6 million.

Location: South Coast of New South Wales, Australia.

Other features: Campaigner against the National Australia Bank for short-notice unprecedented eviction after a predatory lending practice. In his statement, Brandson refused to go to court to solve the dispute, even if expecting to win, since he argued, the law favoured banks and was quite improbable for him to be reimbursed even a fraction of the damages on top of his debt.

<http://www.abc.net.au/news/2014-07-17/predatory-lending-in-banks-widespread-malpractice-activists-say/5603256>



171: House Lottery MARYLAND-1, USA.

Indebted organisers: Karen Crawford and Dennis Kelly.

Location: Hancock, Maryland.

Raffle dates: December 2007 - March 2008.

Ticket price: \$100.

House price: bought for \$375,000.

Sold: 6,500 tickets.

Other features: The organisers required the collaboration of the nonprofit San Mar Children's Home. San Mar entered into a contingency contract to pay for the house with raffle earnings only if those earnings reached a certain level. In the end, extra \$200,000 were raised on top of the needed amount, which the organisers donated to charity. Afterwards, the organisers paid back their debt and moved back into their previous home.

Web presence:

<http://www.seattletimes.com/business/real-estate/desperate-home-sellers-try-hand-at-raffles/>

http://www.nytimes.com/2008/09/25/garden/25raffle.html?pagewanted=1&_r=3&ref=garden



172: House Lottery MARYLAND-2, USA.

Indebted organisers: Tom and Dianne Walters

Location: Edgewater, Maryland.

The two USA top home raffle companies at their peak in 2009 were Charity Home Raffle (CHR) and USAHomeRaffle.com. CHR conducts raffles for high-end homes. USA Home Raffle is a Maryland-based association of lawyers and an internet portal where (indebted) homeowners can upload their own house to the database and where non-profit organizations can choose the best-fitting candidate to support with helping to organise a legal raffle. They function as an intermediary platform connecting nonprofit organizations with individual homeowners who are looking to raffle their home. They warn against organising your own a raffle, as 'in the US, in order for a home raffle to be legitimate, it needs to be conducted through a non-profit organization.' According to their website, home raffles in the US have been happening on a large scale benefiting non-profit organizations since the early 1990s.

Web: <http://www.usahomeraffle.com/>



173: House Lottery HAWAII, USA.

Indebted organisers: Julie Sigwart and Michael Stinson

Location: Maui, Hawaii.

Date: 2008

Participation requirements: Skills Contest. \$100 participation fee and an essay responding to the theme: 'Aloha, what does it mean to you?' The results were to be judged by a group of prominent members of the community. Since the contest was not a game of chance, state approval was not required, and teaming with a nonprofit group was not necessary.



174: House Lottery PHILADELPHIA, USA.

Indebted organiser: Scott Bernard.

Location: Philadelphia.

Date: 2008.

Participation requirements: Skills Contest. \$49 entrance fee and a copy of a black-and-white line drawing to be downloaded and then coloured by hand.

Three judges – a Philadelphia artist, a local business owner and a former mayor of the town – were to pick the twenty 'most-creative' entries. Selected images were to be displayed online in order for the public to vote for a winner.



175: House Lottery CASTELLÓN, Spain.

Indebted organiser: M^a Amparo Bolumar Aznar

Location: 19 Calle Esperanza, Segorbe, Castellón.

Lottery Dates: 30 March 2014 - 29 March 2015

Number of Tickets: 40,000 tickets

Ticket price: €10

Original value of the house: €90,077.86

Location: c/ Esperanza n°19, Segorbe, Castellón, Spain.

Other features: The house is 141m² distributed in four floors; two balconies, patio, living room, four master bedrooms, two bathrooms, one toilet. It is the first house lottery authorised in the country by the Finance Ministry's Executive Management of Gambling Regulation to be implemented only at a national level (24 March 2014). After the legal struggles to authorise it, organisers will use the same online platform to feature more lotteries in the future. As of July 2017, no other lottery has taken place.

Web: <http://lotohome.es/>



176-179: Public launch of The Housing Act, Praça da Figueira, Lisbon, Portugal, September 2013.

Towards Onshore Offshoring as a Platform for Political Constituency



'He had brought a large map representing the sea,
Without the least vestige of land:
And the crew were much pleased
when they found it to be
A map they could all understand.'

—Lewis Carroll, *The Hunting of the Snark: An Agony in 8 fits*, 1874.

The housing crisis has been investigated through the complex architecture of financial instruments that delineate space. By looking at the littoral as a paradigm of ambiguous demarcation of boundaries, this project has deepened into some of the neoliberal forces shaping housing, land and borders. By looking at the entanglement of risk and ownership, globalisation of mortgage, risk instruments, housing acts, geological processes, and climate events, it reveals how architecture, land and national sovereignties are eventually redefined through the making of housing inequality. Hence, the notion of the *financial littoral* has been proposed as a conceptual tool to unpack the institutional, insurance and banking forces that utilise the demarcation of borderlines to govern and generate profit margins, and ultimately, control forms of inhabitation and forms of residence among neoliberal subjects.

Housing 'affordability'—the littoral alike—is a process affected by the ambiguity of a multiplicity of territorial and architectural thresholds that are ultimately regulated and ruled by political decision-making: the creation of supply and demand, the subsidies to access a housing object, the taxonomies that define what a house is and how it is to be organised, the normative construction of its dwellers, or the definition of its value as an tradable asset. This set of questions opens up further discussion on whether governance and resistance could also be practiced through ambiguity and circumventions.

Far from being treated as a universal right, housing—either in the form of an inhabited home or evicted household—has become a financial asset within the neoliberal understanding of politics, ecology, and economy in the Global North. Not only do governments and real estate markets speculate on the value of the home, but activist responses can also use speculation to resist the violence of housing shortages. Profiting from the a legality of grey areas, eminent domain was lawfully reversed in the US in order to avoid foreclosures. The ambiguous possibility of

imminent eviction allows the common good to be used against foreclosure, for the sake of good will within a community. Similarly, a house lottery independently organised in the Outermost Territory of the Azores challenged eviction procedures by crowdfunding ways to address indebtedness. These experiences could become a paradigmatic moment in the struggle against the abuse of underwater mortgages. The very redefinition of the common good and the public interest can make the same law operate in opposite directions, where eminent domain prevents, instead of promotes, foreclosure.

The use of the three main objects of analysis that structure this thesis—the shore, the offset, and the offshore—introduce a multiplicity of practices and formats to redefine the future role of architecture as a critical mode of enquiry for the housing question, one that takes advantage of speculation and deals with *financially* built environments. Housing and real estate were at the epicentre of politics, and one of the main causes for the 2007-2008 global financial crisis. Architecture was responsible for the indebtedness that immediately followed. Like any other demarcated boundary in urban planning schemes, the shoreline is less a line without width than a complex four-dimensional construct that changes in scale over time in order to generate profits for different interests. The offset, like the shoreline, is a mechanism for extracting value out of the common good and protecting the environment for the sake of ‘safe’ urbanisation. And the offshore, despite existing and not existing at the same time, offers clues for appropriating a legality and introducing a new understanding of critical space within a global circulation of financial instruments associated with contemporary dwelling.

Operating through carefully calculated ambiguity, these three concepts unveil the shoreline itself and how it plays the role of a political and ecological dispositif. The shoreline is used in this dissertation as a device to understand littoralisation as a process, whereby ambiguous margins are adapted not only to create more profit, but also to appropriate profits in their malleability. This not only reveals the current crisis of para-empiricism, which uses factishes to legitimise further financialisation of space, but it also reframes architecture as a discipline that is increasingly obligated to engage with the construction or destruction of financially built environments. In that regard, the architecture discipline, which initially produced the material qualities of housing boom-oriented economies, should also be accountable for delivering ways out of the crisis and imagining approaches to the future construction of inhabitable space. The use of these three conceptual objects, stemming out of the encounter between the end of buildable land and the beginning of the coastal commons, has made apparent that relying only on the traditional governance of the commons and limited understandings of the margins of the built environment is not enough. Conventional architectural tools to analyse, explore, challenge and reshuffle these systems have also become obsolete.

The set of three Project Dossiers are organised around the three different chapters, and in turn subdivided into sections with different iterations of the project. They constitute a set of ad hoc processes that aim to understand the housing problem by looking at it through the lens of the financial littoral. Distributed along the three chapters, the practice utilises multidisciplinary tools

to expand the field and agency of the architectural discipline. They indistinguishably operate as practice-based research and research-based practice. As it becomes apparent that conventional maps failed to depict the shoreline by flattening a four-dimensional set of relations onto a one-dimensional line, the methodologies used in the practical component of the dissertation required to expand and deploy other ways of modelling space: critical readings of satellite photographs, analysis of the visual imaginary of the coast (still and moving), cooking geopolitical edible maps that deconstruct the territorialisation of value, lecture performances to raise awareness around the actual role of architects, site-specific real time modelling of conversations, installation of sound devices, and organisation of house lotteries to challenge the limits of foreclosure. This (*a priori* heterogeneous) set of practices attempts to reconfigure the notion of value under neoliberalism and configure a field towards critical financial thinking of spatial constructs. In sum, it is an assemblage of techniques to devise a methodology that could investigate the mapping of globalised housing boundaries beyond their conventional forms of representation.

Consequently, the practice component of the dissertation is crucial for the investigation of the questions developed in the main conceptual framework of the written chapters. It is by this multidisciplinary and transdisciplinary approach that some of the achievements, lessons and encounters are indebted to long-term collaborations with different forms of expertise outside the orthodox architectural discipline. Having been in conversation with lawyers, financial investors, environmentalists, geologists, activists or coastal engineers, not only has the project achieved to forge new alliances and relationships outside the more disciplinary ones, but more importantly, it has also managed to create another form of practising architecture along the way. Besides, the actual exploration of the multiple possibilities that these interactions have allowed for have facilitated a new insight into how to practice responsibly in ways that could re-imagine spatial conflicts and at the same time reach new critical audiences.

Contemporary inhabitation, which is deeply immersed in neoliberalism, is developing new tools to fight for the common good, at the same time as it questions the nominal benevolent governance imposed upon it. Instead of a matter of *extreme* necessity, this thesis has argued that eminent domain is rather a matter of a *created* necessity based upon calculated forms of ambiguity. New tactics of resistance are nonetheless using that ambiguity and gambling in the offshore to confront the injustice and violence embedded in housing, urban, and territorial policy-making. The ambiguity of grey zones and the speculative governance of the blurry constitute an operational framework to read and resist neoliberal politics of inhabitation. It allows legal tactics around the housing crisis to operate in opposite directions by redefining the common good. Still, the entanglement between real estate and immovable property can be commandeered through productive forms of ambiguity, shifting it toward a common good defined beyond neoliberal interests.

The dissertation started by identifying how the housing crisis is deeply embedded in an environmental crisis in the understanding of space, and eventually, an *erosion* of democracy.

This translates not only into a crisis of representation of territorial, geological and zoning boundaries, but also in a crisis of empiricism in the way that biased scientific reports have been instrumentalised for the construction of infrastructure or have legitimised the lack or need for further development. Hence, spatial margins and real estate profit margins are one; in the way the common good has been appropriated to generate income for the interest of those in power positions. Hence, alternative scenarios have started to redefine the common good and the public interest as forms of operation within neoliberal environments. It would not be surprising to see more of these experiments appear in the near future as other ways of practicing: counter-systems of power that learn from, and appropriate, corporatism; something that could be framed as counter-corporate activism, using the tools of neoliberalism to chip away at neoliberalism itself. Resources like speculation can become new tools to challenge existing logics of power and inequality. They appropriate a neoliberal format and then distort it, in a way indebted to Michel Feher's notion of 'investee activism.' In a society organised by investor-investee relationships, resistance focuses on social antagonisms specific to financial markets (stakeholder activism in the stock market, borrower activism in the bond market, collateral guarantor activism in the derivatives market, etc.) and speculates on the potential for a more equitable society.

The main contribution of this dissertation is to expand into the architecture of the economic crisis by starting to build up a framework around the notion of ambiguity within the littoralisation of space. At the same time, this opens up the need for further research into the possibilities and limitations of the architecture discipline, even if understood in an expanded way. More work needs to be done around individual agency in global phenomena of capital circulation in order to start framing geopolitical constructs that embrace variability of boundaries as an integral part of them. This thesis also opens the door for further work to move beyond the Foucauldian logic of boundaries as circulation of capital, and instead, toward understanding capital as the circulation of borderlines. In that regard, the concept of the financial littoral can bring out together an understanding of space that rethinks the processes that led to the collapse of the housing boom, as well as new ways to resist in an era of neoliberal financialisation and littoralisation of space.

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