

Santiago Gorostiza Langa

# MOBILISING NATURE BETWEEN DEMOCRACY AND FASCISM

An environmental history of the Spanish Civil War and the legacies of the Francoist autarky

PhD Thesis in the Doctoral Programme in Democracy in the 21st Century, supervised by Professor Doctor Marco Armiero and Professor Doctor Stefania Barca, and presented to the Faculty of Economics of the University of Coimbra

August 2017



UNIVERSIDADE DE COIMBRA







FEUC FACULDADE DE ECONOMIA  
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Coimbra, 2017

Cover images, from left to right and from top to bottom:

1. “El agua en malas condiciones produce más bajas que la metralla” (“Water in poor conditions causes more casualties than shrapnel”). Poster by Bardasano (Jefatura de Sanidad del Ejército). Source: Pavelló de la República (UB, Barcelona).
2. Cover of the magazine *Sí* (weekly supplement of the newspaper *Arriba*), nº31, August 2 1942.
3. “Autarquía Europea” (“European Autarky”). Advertisement published in the magazine *Y - Revista de la mujer nacional sindicalista*, nº57, October 1942, p. 2.
4. “Minería Española” (“Spanish mining”). Advertisement published in the magazine *Ion – Revista española de química aplicada*, nº24, July 1943, back cover.
5. “Minas potásicas de Cardona, Suria, Sallent, Balsareny” (“Potash mines of Cardona, Suria, Sallent, Balsareny”). Leaflet about the potash mines of the Bages region, edited in 1954. Personal collection of the author.
6. Cover of the magazine of the Spanish army, *Ejército*, nº87, April 1947.
7. Francisco Franco, portrayed in a postcard published by Sociedad General de Aguas de Barcelona, 1939. Personal collection of the author.
8. Cover of the magazine of the Spanish army, *Ejército*, nº115, August 1949.

*En memoria de Pilar Azpiazu Solana y Pedro Gorostiza Benito*





## Acknowledgments as stories

It is no surprise that most people are drawn to the acknowledgments as soon as they open a PhD thesis. This section often conveys the vital stories behind a PhD better, and certainly faster, than the rest of the document. They are traces of the work of years, and often constitute an exercise in reflexivity of the author.

Most of this PhD thesis has been carried out with the support of a scholarship. In other words, I received a salary to do research. This is not often the case in Spain or Portugal, and I consider myself tremendously lucky to have had this opportunity and also the chance to spend time abroad. Through these years, I have tried not to forget it, and to make the most of it. I gladly acknowledge the financial support provided by the People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme, under REA agreement n°289374—'ENTITLE'.

As it stands, this thesis would simply not have been possible without the support of many archivists and librarians in Barcelona, Madrid and other cities in Spain and abroad. I am indebted to all of them and have too many names to thank, so I'll just pick a few: Lourdes Prades and her team at the Pavelló de la República (Barcelona), Gustavo Castañer (now at the European External Action Service in Brussels) and the many librarians of Biblioteca de Catalunya. All of them made this work possible and contributed to it in several ways, sometimes with crucial suggestions which led to new sources of information.

A thesis based in a compilation of research articles gives me the chance to underline my debts with co-authors but also with the anonymous (and sometimes exasperating!) people who took the time to read my work and point out inconsistencies and necessary improvements: reviewers. William Cronon wrote that historians "tell stories *with* each other and *against* each other in order to speak *to* each other", and I believe I have been very lucky to share my work with enthusiastic co-authors and to be confronted by constructive reviewers. I am indebted to all of them, but I can only name my co-authors: David Saurí, a geographer who is passionate about history; Hug March, who is to be held responsible if I finally became someone who regularly checks journal websites for paper updates; Miquel Ortega, who envisioned our collaboration from the table of a bar in Syros, Greece, and taught me so much in the coming years; and one of my supervisors, Marco Armiero.

I am deeply grateful to Marco and to Stefania Barca for their work as supervisors. They have been extraordinarily tolerant and supportive during the last five years. They have opened their house to me but they have also respected the moments when I "went underground", as they nicely put it. In the difficult personal moments, they have always been sensitive. Through the research process, they have pushed me out of my comfort zone as a historian while granting me all the freedom to do my work, making available their knowledge, guidance and all their academic resources and contacts.

Setting a story in motion is often its most difficult part, and so was the case in the roots of this thesis. I cannot thank enough the support of my parents, María José and Pedro, when I stated my idea of quitting a secure job to starting an uncertain academic endeavour, when no scholarships were still in sight. I have enjoyed sharing every step of this (and other) investigations with them and with my sisters Raquel, Arantxa and Amaya, and my brother Pau; as with Sergi, Juan Carlos, Antonio and Deborah. I am extremely grateful to them for their peaceful support over the years.

In Barcelona, I am thankful to my friends from the high school and many other: Olga, Marta, Aura, Oriol & Oriol, Adrià & Adrià, Saul, Guillem, Sonia, Eliseu, David and Andreu. Some of

them remain committed to storytelling every weekend, and I often kept them in mind when writing this thesis.

Many in the History Department of the Universitat Autònoma de Barcelona (UAB) have encouraged me to go ahead with the PhD. Javier Rodrigo unconsciously persuaded me to apply for a Master's scholarship with a passionate harangue about the enjoyment of doing historical research at the beginning of one of his classes. I am also grateful to other professors in the department who have always been helpful and responsive: Maria Antònia Martí, Antonio Espino, Pere Ysàs and Francesc Vilanova.

In the Barceloneta, by the hand of Irmak Ertör, I discovered a neighbourhood of my own city. Through the peaceful windy nights of winter and the long, crowded days of the summer we dived into the history of the cooperative movement and its living memory in the *barri*. I am grateful to Emma for first inviting me to contribute to a project that had been launched by neighbours and activists. I have learnt a lot with her, as I have with Marc, Andrés and Pablo. Fede, Laia and Momo have shared the good and bad moments. Everything looks smaller from the top of the Ferris wheel during the *Festa Major*.

In Madrid, I enjoyed the guidance and support of my sister Amaya and of Antonio. Both know the insides of this thesis well, and shared many of its stories. We walked the forests near the dams of Puentes Viejas and El Villar until we found the old defence lines and the material remains of combats. I am also thankful for the friendship of Alejandro Pérez-Olivares and Daniel Oviedo. Borrowing Álex' words, we are growing up while we learn to be historians, or maybe the other way round. I am especially indebted for his critical and constructive comments to this thesis and the advices on some of its research articles. Finally, I am particularly grateful to José Manuel Naredo, for his kind welcoming every time we have met, and for taking Pepe Martínez's old Volvo out of the garage to take me to the closest metro station.

In the Pyrenees, I enjoyed the support and warm welcome of Lluís Llobet and Cesca Gelabert at the Centre d'Art i Natura de Farrera. I am also indebted to Oriol Riart for sharing his vast knowledge about the region, and to Josep Calvet for answering every question I asked him. Francesc Baró and Anna Moreso helped me with GIS and mapping. Early in this research, I shared a long drive with David Bosch, visiting both the fortifications and its former workers. I am thankful to David, Lara and Marta for their optimism and long friendship.

Between Cornellà and Hospitalet, Esther gave unwavering support in the early and challenging days of this research. I am grateful.

\*

Through the European Network of Political Ecology network (ENTITLE) I have been able to meet a lot of friends who became central during these years of my life, and that have also shaped this thesis. I have shared courses, trips, conferences, long discussions, hours at the library and also celebrations with Marien, Felipe, Diego A., Rita, Melissa, Diego B., Panagiota, Irmak, Salvatore, Jonah, Giorgos V., Martí, Gustavo, Chus and Amelie. In Barcelona, I also must mention Giorgos K., Christos, Daniela, Sara, Dídac, Hyerim and Biljana. With Lele, Felipe, Irina, Daniele, Ilenia, Laura, Marco and Stefania, we shared the task of organising the final conference of the project, *Undisciplined Environments*. Seen in perspective, working with them made it a rewarding and quite enjoyable process.

Ethemcan Turhan not only made some crucial and comments on the research proposal that brought me into the ENTITLE project, but has remained a close friend in the most difficult moments since we met. I am very grateful for his friendship.



Special thanks to Irmak, for her trust, support and resolute way of addressing difficulties and challenges; for sharing the love for past and present; for her contagious energy in engaging with life, far from the academia and the darkness of archives; and for facing together doubts while making this learning process more healthy, enjoyable, peaceful and down-to-earth.

During these years, doing the PhD as part of a Marie Curie project has taken me to different cities for short and long periods. In Coimbra, I found the help and patience of André Caiado, Rita Pais, Catarina Fernandes and Irina Castro in all the problems that appeared. From dealing with fleas to academic bureaucracy, I am extremely thankful for their support, efficiency and professionalism. I am also grateful to the many activities organised by the Oficina de Ecologia e Sociedade at the Centro de Estudos Sociais throughout these years.

In Manchester I had the chance to spend a research period with an amazing team of professors and students. I am thankful to Gavin Bridge, Erik Swyngedouw, John O'Neill, Noel Castree and Daniel Banoub for the good time I had there. In this city I met Melissa García-Lamarca and Diego Borbalan, who have remained close friends ever since. They have jumped in to help in many more occasions than I can recount. I am especially in debt with Melissa for her meticulous comments and English revisions in this thesis and in some of the articles, and with Diego for his help with the cover.

The Marie Curie fellowship also offered the opportunity to carry out a secondment at a company or entity, anywhere in the world. I chose Vilanova i la Geltrú, near Barcelona. In all its exoticism, spending a few months working at Fundació ENT meant to fulfil something I had desired to do for years. I am thankful to Ignasi Puig and Miquel Ortega for their guidance, and to the whole team for their support, particularly Mar, Maria Mestre and, once again, Irmak. Collaborating in *Ecología Política* and being part of ENTITLE also gave me opportunities to discuss my investigations with Joan Martínez Alier, who often came up with relevant suggestions.

Twelve years after first learning about a book called *Something New Under the Sun: An environmental history of the twentieth century*, meeting John McNeill and sharing his office in Washington D.C. for a couple of weeks seemed to close the circle and signalled that the PhD was starting to come to an end. I am very grateful to John for his support and feedback about my work, and also to Dagomar Degroot and Önder Eren Akgül for their warm welcome to Georgetown University.

\*

This thesis is dedicated to the memory of Pilar Azpiazu Solana and Pedro Gorostiza Benito, who walked and worked in many of the landscapes I explore in the following pages. From the fields of Castile to the battlefields of Ciudad Universitaria, and from the peaks of the Pyrenees to the desert of Sahara, my grandfather survived the war but carried shrapnel splinters embedded in his body for the rest of his life. From the panicking Vitoria of the first days of the military coup to the evacuation to France, and from the French side of the Pyrenees to the city of València under the fascist bombings, so did my grandmother. The experience of the war and the first years of the dictatorship accompanied them in their blood, in their words and their silences until they abandoned us. They live in our memory.

## Funding

This project benefited from EC funding under the Marie Curie actions – Initial Training Networks – FP7 – PEOPLE – 2011; under grant agreement no. 289374 (European Network of Political Ecology – ENTITLE).



## Resumo

A Guerra Civil Espanhola (1936-1939) e as suas consequências nos primeiros anos do Franquismo é certamente o tópico mais discutido da História de Espanha nos últimos 80 anos. Particularmente, desde o ano 2000, a historiografia sobre esta época tem-se continuamente expandido, entrelaçada com a emergência de um movimento social para recuperar a “memória histórica” focada na exumação e no reconhecimento das vítimas do Franquismo. A Guerra e os anos do pós-guerra, contudo, têm sido insuficientemente analisados a partir da perspectiva da História Ambiental, embora esta disciplina se estivesse a estabelecer em Espanha durante o mesmo período. Esta tese responde a esta lacuna de investigação ao aplicar uma abordagem da História Ambiental para examinar a forma como a Guerra Civil Espanhola, a subsequente vitória franquista e os state-building efforts transformaram as relações e as paisagens socio-ecológicas da nação, tanto material como simbolicamente. A tese combina História Ambiental com abordagens da Ecologia Política e da História da Ciência e baseia-se numa extensa análise documental de fontes de arquivo primárias, combinadas com História Oral. Pretende-se desvendar os legados socio-ecológicos da Guerra e do Franquismo inicial, ligando a História explicitamente aos debates atuais sobre os conflitos socio-ambientais, através de questões que incluem regimes de propriedade de gestão da água urbana, qualidade da água e encargos da poluição, sobre-exploração dos recursos piscatórios e discussões sobre autonomia, autossuficiência e decrescimento.

Concebida como uma compilação de artigos científicos, esta tese contribui para as discussões teóricas emergentes ao combinar História Ambiental com Ecologia Política e Geografia. Ao reforçar os aspectos espaciais e políticos da História Ambiental, a sua contribuição fortalece também as dimensões históricas da Ecologia Política e da Geografia. A tese explora o modo como a Guerra revolucionou os regimes de propriedade da água em Barcelona, transformou as infraestruturas de água urbana em Madrid e afetou o sistema socio-ecológico do rio Llobregat. Além disso, ao sublinhar a longa aplicação do ‘estado de guerra’ (1936-1948) na Espanha franquista, a tese examina as reformas políticas, sociais e económicas autárquicas como state-building efforts intimamente ligadas com a Guerra e o militarismo. A Autarcia é interpretada como um projeto político e ecológico que entrelaça a procura em aumentar a autossuficiência nacional com a repressão social e o controlo. Nesse sentido, esta tese examina a materialização do projeto autárquico na expansão da frota piscatória espanhola, que contribuiu para alimentar a nação, e na militarização da fronteira nacional nas montanhas dos Pireneus. Por último, explora a circulação dos discursos de autossuficiência através do espaço e do tempo.

Em resumo, ao usar o caso da Guerra Civil Espanhola e os anos de ascensão do Franquismo, esta tese procura contribuir para a abertura da História Ambiental Espanhola, tanto em tópicos como abordagens, resolvendo a tensão entre o interesse público e o desenvolvimento massivo da historiografia sobre a Guerra e a ditadura, por um lado, e a lacuna de investigação em História Ambiental que incide sobre ambos os processos, por outro.

**Palavras chaves:** História Ambiental; Guerra Civil Espanhola; Autarcia; Fascismo; Franquismo; Ecologia Política





## **Abstract**

The Spanish Civil War (1936-1939) and its consequences in the early years of Francoism is certainly the most discussed topic of Spanish history in the last 80 years. Particularly since the year 2000, the historiography about this era has expanded continuously, intertwined with the emergence of a social movement to recover “historical memory” focused on exhuming and recognising the victims of Francoism. The war and post-war years, however, have scarcely been analysed from the perspective of environmental history, despite the fact that this discipline was establishing itself in Spain during the very same years. This thesis addresses this research gap, applying an environmental history approach to examine how the Spanish Civil War and the subsequent Francoist victory and state-building efforts transformed the nation’s socio-ecological relations and landscapes, both materially and symbolically. It combines environmental history with approaches from political ecology and the history of science, and builds on an extended documentary analysis of archival primary sources, combined with oral history. It seeks to unveil the socio-ecological legacies of the war and early Francoism, connecting history explicitly to debates about socioenvironmental conflicts today through issues including property regimes of urban water management, water quality and pollution burdens, overexploitation of fishing stocks and discussions about autonomy, self-sufficiency and degrowth.

Conceived as a compilation of research articles, this thesis contributes to the theoretical discussions emerging upon combining environmental history with political ecology and geography. While reinforcing the spatial and political aspects of environmental history, its contribution also strengthens the historical dimensions of political ecology and geography. It explores how the war revolutionised water property regimes in Barcelona, transformed urban water infrastructure in Madrid, and disrupted the Llobregat river socio-ecological system. Moreover, by underlining the long application of the state of war in Francoist Spain (1936-1948), it examines autarkic political, social and economic reforms as state-building efforts intimately linked with war and militarism. Autarky is interpreted as a political and ecological project that intertwines the search to increase national self-sufficiency with social repression and control. Along these lines, this thesis examines the materialisation of the autarkic project in the expansion of the Spanish fishing fleet to contribute to feed the nation, and in the militarisation of the national border in the Pyrenees Mountains. Lastly, it explores the circulation of the discourses of self-sufficiency through space and time.

In short, by using the case of the Spanish Civil War and the budding years of Francoism, this thesis seeks to open up Spanish environmental history both in topics and approaches, resolving the tension between the public interest and the massive development of the historiography about the war and the dictatorship, on the one hand, and the lack of environmental history research about both, on the other.

**Keywords:** Environmental History; Spanish Civil War; autarky; Fascism; Francoism; Political ecology





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## Preface

The experience of my PhD years is wider than the chapters and research articles contained in this thesis. They have involved diverse collaborations and both academic and non-academic publications. The central experience that has influenced my PhD training is the European Network of Political Ecology (ENTITLE) (<http://www.politicaecology.eu/>). Between 2012 and 2016 I carried out my doctorate as an Early Stage Researcher of this Marie Curie ITN project. I participated in several intensive courses and summer schools on social movements; commons; conflicts and disasters; and institutions, justice and democracy. These courses and the interests of my fellow PhD colleagues – some of which are geographers, others anthropologists, journalists, economists, engineers, or environmental scientists – have provided constant stimulation in considering what my work as a historian means for the present day. They have also provided me with a solid background in political ecology as well as with very important insights regarding research design, publication and dissemination.

ENTITLE, however, has meant much more than these training activities. The debates and conversations shared with senior and young scholars contributed to give shape to several collective outcomes. These include the book *Political Ecology for Civil Society*, elaborated by ENTITLE members with the aim of developing key concepts and case studies for a non-academic audience (Beltrán et al. 2016). I contributed to the chapter on ‘Movements’ co-authored with Gustavo García López, Salvatore Paolo de Rosa, Melissa García Lamarca and Panagiota Kotsila. My work explored the role of grassroots movements in the recovery of the ‘historical memory’ of Barcelona's cooperative movement, and it gave way to my involvement in a larger project on this topic (Alari et al. 2016). Another outcome From ENTITLE was a collaborative academic article, led by Amelie Huber and co-authored with Panagiota Kotsila, Maria Jesús Beltrán, Marco Armiero and myself (Huber et al. 2016). This article examines past and ongoing struggles against the construction of dams and the dominant risk discourses and seeks to underline the legitimacy of those resisting such projects.

One of the obligations of PhD fellows within the ENTITLE project was to carry out a secondment period. In my case, this brought me to work with the journal *Ecología Política* (<http://www.ecologiapolitica.info/>), co-published by Fundació ENT and Icaria editorial. I was the invited editor of issue n°47, which focused on urban political ecology. Later I became member of the editorial board of the journal and I have also edited its number 50, on the occasion of its 25<sup>th</sup> anniversary.

Finally, I was part of the organising and scientific committee of the international conference “Undisciplined Environments” (20-24 March 2016), the closing event of ENTITLE. This conference was co-organised by the Center for Social Studies at the University of Coimbra and the Environmental Humanities Laboratory at the Division of History of Science, Technology and Environment at KTH Royal Institute of Technology, Stockholm. “Undisciplined Environments” brought together almost 500 scholars, activists and artists in Stockholm.

Although the project is formally over, the group of senior and young scholars remains active through ENTITLE collective, whose key ongoing project is ENTITLE blog (<https://entitleblog.org/>). Conceived as a collaborative writing project on political ecology, the blog aims “to inspire and contribute to radical thought towards more egalitarian socio-ecological futures” and was originally launched by the fellows towards the beginning of the ENTITLE PhD training period.

# **PART I**

## **Towards an environmental history of the Spanish Civil War and early Francoism**





# 1. The paradox of Spanish environmental history

## 1.1 Research motivation and rationale

The Spanish Civil War (1936-1939) is often referred to as the conflict that has generated the greatest number of research and publications in Spanish history. Since the late 1990s, the emergence of a social movement to recover “historical memory”, mostly focused on locating and exhuming the circa 30,000 disappeared people assassinated by Francoist factions during the war and the early 1940s, has gained prominence throughout Spain and stimulated new investigation. By 2007, the bibliography on the war was estimated to be at least 40,000 publications and has continued to expand, making this period the most researched one in Spanish history (Viñas & Blanco Rodríguez 2017; Blanco Rodríguez 2007).

This great upsurge of public interest in the war and the early years of the Francoist dictatorship has truly constituted a social phenomenon that received regular and widespread attention in the media. It reached the political agenda in 2007 with the approval of the Spanish Law of Historical Memory (52/2007), which “recognises and broadens the rights and establishes measures in favour of those who suffered prosecution or violence during the Civil War and the Dictatorship”.<sup>1</sup> Organised as a grassroots movement from the memorial associations that started searching for and exhuming mass graves across the Spanish territory since 2000, the associations for historical memory denounced that after the death of Franco a “Pact of Forgetting” (“Pacto de Olvido”) had put Francoist victims aside. According to their views, the Amnesty Law (“Ley de Amnistía”, 1977/46)<sup>2</sup> materialised this pact by nominally recognising victims but protecting executioners (on politics of memory and the movement for “historical memory”, see Loff et al. 2015; Jerez Farrán & Amago 2010; Boyd 2008).

Particularly since the year 2000, dozens of national and international symposiums and conferences about the war and the Francoist regime have been celebrated, hundreds of books and articles have been published and countless websites and projects have expanded the echo of history in the present day. Despite the tensions between history and memory (Traverso 2006), the social movement for the recovery of historical memory has undoubtedly breathed new life into research on contemporary Spain and marked a new generation of researchers and their debates. In continuous expansion, the historiography of the Spanish Civil War has

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<sup>1</sup> “Ley 52/2007, de 26 de diciembre, por la que se reconocen y amplían derechos y se establecen medidas en favor de quienes padecieron persecución o violencia durante la guerra civil y la dictadura.”, <http://www.boe.es/buscar/doc.php?id=BOE-A-2007-22296>

<sup>2</sup> “Ley 46/1977, de 15 de octubre, de Amnistía”, <http://www.boe.es/buscar/doc.php?id=BOE-A-1977-24937>

explored new approaches and methods and examined new sources. The early years of the dictatorship have been included in many of the accounts of the war, and this attention to the post-war emphasises the importance of violent and legal repression in the very building of Francoism. Although the formal military operations of the Spanish Civil War finished on April 1 1939, the Francoist regime maintained the state of war in force during its first building years, until 1948, thus guaranteeing the superiority of the army over civil authorities (Rodrigo 2008).

However, this massive development of the literature about the Spanish Civil War and the Francoist dictatorship poses a paradox in Spanish environmental history, and in the environmental history of Spain more broadly. Despite the fact that environmental history was a field developing in Spain during the very same years that the historical memory movement sprouted and expanded, the vast expansion of publications on the latter topic has little affected or involved environmental history. In other words, it is not possible to contend that environmental history approaches have made a significant contribution to the study of the Spanish Civil War. The situation is relatively different for the Francoist dictatorship, where the renewal of social history and new research in agrarian history have produced significant studies.

In short: the Spanish Civil War and its consequences during the budding years of Francoism is the most discussed topic of Spanish history in the last 80 years and may well be the single period of Spanish history that has received the most research attention. However, the period has been scarcely analysed from the perspective of environmental history. This paradox introduces the overall purpose and research question of this thesis.

## 1.2 Research questions and aims

### *1.2.1 Research questions*

The overarching purpose of this thesis is to begin disentangling the contradiction presented in the previous section towards opening new paths of research. By drawing on international historiography about the environmental history of war and fascist regimes and practices, I aim to examine the Spanish Civil War and post-war years through the following research questions:

**How did the Spanish Civil War and the subsequent Francoist victory and state-building efforts transform the nation's socio-ecological relations and landscapes, both materially and symbolically?**

**Which legacies did the war and the Francoist socio-ecological project leave intertwined with the socio-ecologies of contemporary Spain?**

### *1.2.2 Research aims*

By focusing on war and fascism and therefore examining the environmental history of the Spanish Civil War and the early years of Francoism, this thesis has the following aims:

**1. To contribute to mainstream environmental history.** By engaging with war and fascist regimes and practices I aim at examining research topics that “other historians care about” (McNeill 2011:14). The clear imbalance between the general development of literature about the Spanish Civil War and the lack of environmental history approaches to it suggests that this is the case in point. This approach does not leave aside the usual topics of interest of environmental history, but explores them through the lens of war, revolution, and fascist practices.

**2. To unveil the socio-ecological legacies of the war and early Francoism *today*.** This research thesis sits at the crossroads of environmental history and political ecology (Barca 2016a; 2016b; Davis 2009). It is an investigation into the complex entanglements between different political regimes and processes of environmental change. In so doing, it aims at connecting explicitly to present day debates about diverse socioenvironmental conflicts, involving property regimes of urban water management, water quality and pollution burdens, overexploitation of fishing stocks, discussions about autonomy, self-sufficiency and degrowth, and others.

**3. To bring Spain into the international context.** Despite the fact that this thesis emerges from a contradiction in the Spanish historiography and explores the case of a national state, I acknowledge that environmental history is naturally a transnational discipline (Worster 1982) and therefore I explicitly privilege comparative perspectives aimed at overcoming visions of “Spanish exceptionalism”. In other words, I contextualise my period of study in two ways. First,

in relation to the literature about environmental history of war, I situate the Spanish Civil War as part of the Interwar Period and direct prelude of World War II. And second, in relation to the environmental history of fascism, I examine the Francoist dictatorship in relation to other Nazi-fascist European regimes, such as Germany, Italy or Portugal.

### 1.3 Structure of the thesis

This thesis deals with the Spanish Civil War and the consolidation of the Francoist regime from an environmental history perspective. It is a compilation of seven research articles, developed in two parts. In the first part, starting with this introduction, I present the research topic, a theoretical and historiographical review of the thesis and the specific research gaps of the field, which I relate to the topics and approaches of the seven research articles. Following this, I examine the methods and sources used throughout the thesis, and summarise the main insights of each research article and its interconnections. In the concluding discussion of the first part I provide an overview of the thesis contribution, followed by a discussion and closed by a section where I suggest future lines of research.

Seven research articles, four of which have been published, form the second part of the thesis. In all research articles I am either the single author or, more often, the first and corresponding author. Each research article was written to stand alone as an academic contribution under the eyes of reviewers and editors. Only its format has been slightly modified for the sake of readability and coherence in style. Nonetheless, every research article addresses a specific academic journal or publication and provides a specific contribution to the environmental history, historical geography and political ecology literature. The function of the first part of the thesis is to situate these articles, weaving together their contributions as different findings and dialogues emerging from the research question I have presented.

The titles and topics of each of the seven research articles conforming the second part of the thesis are found in the index. Throughout the first part of this thesis, information about each article emerges progressively. In **Chapter 2**, they are mentioned in connection to specific research gaps, in order to underline how each paper emerged, what inspired it and where it sits in relation to a broader historiographical review. In **Chapter 3**, when discussing the choice of case studies and the sources used, I provide a brief summary of each research article, whereupon I detail the methods used in each article and the connections to the main concerns of this thesis. **Chapter 4** presents a more extensive summary of each article, detailing its

methods, sources and contribution in direct relation to the research gaps articulated previously. I particularly make an effort to present the ‘research story’ of each article, with a twofold intention. First, I attempt to do justice to the amount of work and investigation that lay behind each research paper. And second, in contextualising the story of each piece of research or providing a detail of its progress, I intend to make available information which is not accessible in the final and stiff form that academic research papers often adopt, but that can be crucial to understand the efforts behind them and their connections to the thesis as a whole. Finally, in **Chapter 5**, the contribution of the articles is discussed in relation to the most recent research published and to future lines of inquiry.



## **2. Theoretical and historiographical framework**

This chapter first aims at discussing the connections between the disciplines of environmental history and political ecology and situating the present thesis. Secondly, it reviews the Spanish environmental history literature to identify the main gaps and potentialities in comparison to the international trends of research in environmental history.

The structure of the chapter unfolds as follows. The first section examines the connections and cross-fertilizations between environmental history and political ecology. It explores the interest of political ecologists in historical research and the unease of some environmental historians when dealing with the present. To do so, I discuss a controversial article by historian of science Naomi Oreskes, where she defends the idea of “motivational presentism”. Finally, following Stefania Barca, I reflect upon the “political” in environmental history.

After this, I review the development of environmental history in Spain in several subsections. I introduce how political ecology partly emerged from the discipline. The study of environmental conflicts, understood as part of the tradition of social struggles, was central both in the emergence of political ecology in Spain and in the renovation of social history by environmental history. Nonetheless, Spanish environmental history originated in agrarian history, and one of its main contributions has been the study of social metabolism – accounting for material and energy flows. Perhaps as a result of this strength, one of its weaknesses continues to be the lack of studies about urban environmental history. Besides the scarcity of this kind of research, there are two other topics that remain largely absent from environmental history literature in Spain. These are the study of the Spanish Civil War and the Francoist dictatorship.

In the final sections, I review the main contributions of the literature on the environmental history of war, as well as its shortcomings and the potential of the Spanish case study. Similarly, but with more detail, I explore the development of the environmental history of fascism and how it could be applied to the Spanish case. I argue that most of the development of this literature has focused on nature conservation (history of national parks, etc.) and that such an approach has influenced comparative research for Spain and might have prevented alternative paths of inquiry. Drawing on recent work on environmental history and the history of science, I suggest that one of these paths could be to put self-sufficiency (autarkic) policies of fascist regimes in the centre of the analysis. I conclude this chapter depicting and interrelating the three main gaps of contemporary environmental history about Spain.

## 2.1 At the intersection of environmental history and political ecology

Usually defined as “the history of the mutual relations between humankind and the rest of nature” (McNeill 2003:6), environmental history emerged in the 1970s with the goal of putting nature back into historical studies. Undoubtedly touched in its beginnings by the politically agitated context of the 1970s, the discipline later became more detached from environmentalists’ concerns, at the same time that it was successfully institutionalised (particularly in the US). The field of environmental history multiplied its production between the 1980s and 2000s, its more porous borders overlapping with historical geography, which basically has the same subject of study (Armiero 2016; Naylor 2006; McNeill 2003).

In the long run, environmental history aspires to expand the idea of social history that has predominated during the twentieth-century by taking into account nonhuman agency, from animals to landscapes and micro-particles (Barca 2016a). With an open ambition to shift the focus from humans to nature, environmental history has been concerned since its origins with the nature-culture dichotomy. In the seminal book *Changes in the Land* (1983), William Cronon assumed that the interactions between environment and culture were “dialectical”. As he put it,

“[the] environment may initially shape the range of choices available to people at a given moment, but then culture reshapes environment in responding to those choices. The reshaped environment presents a new set of possibilities for cultural reproduction, thus setting up a new cycle of mutual determination” (Cronon 2003:13).

Twelve years later, in the introduction to his book *The Organic Machine* (1995), Richard White claimed that human history and natural history had been intertwined for millennia, and thus could not be understood without one another. Exploring their very relationship could not solely be limited to “write a human history alongside a natural history and call it an environmental history”, for this would be “like writing a biography of a wife, placing it alongside the biography of a husband and calling it the history of a marriage”. White concluded by making clear that as an environmental historian what he wanted was “the history of the relationship itself” (White 1995:x). Following White, in an attempt to emphasise the hybrid character of environmental history, Marco Armiero has recently asserted that the field’s object of study could be defined as the “hybrid formation of human societies and the environment”. On this base, it is possible to redefine environmental history as the “study of socio-ecological formations in a historical perspective” (Armiero 2016:49). Such approach is based on a Marxist metabolic understanding of the relations between humans and nature, where “humans are



changed changing nature” (Armiero 2016:49). Importantly, interactions between disciplines may operate in a similar manner, according to Armiero: “environmental history changes through its effort in transforming other disciplines” (Armiero 2016:49).

One of these transformations operates within a field of research with close ties to environmental history: political ecology. According to Greenberg & Park (1994), political ecology analyses power relations in society-environment interactions. By uncovering the underlying inequalities in processes of socio-environmental change, it underlines the “political” character of these interactions and changes (Robbins 2004). Political ecology studies focus on a varied range of topics, such as socio-environmental conflicts; social movements; commons and their governance; power relations linked to class, gender and race, and political struggles towards socioecological transformations and bottom-up democracy (Beltrán et al. 2016). The interest of environmental history in studying the direction and causes of ecological change in historical perspective has resulted in strong overlaps between both disciplines (Neumann 2005).

In fact, political ecology scholars have seen a valuable research tool in “critical environmental history”. Pellow (2000) points out that the formation of environmental inequalities should be understood as a sociohistorical process. Robbins (2004) asserts that the temporal depth of many political ecology studies is thin and that environmental history offers “a powerful model for political ecologists interested in change over time” (2004:61). Not only can environmental history challenge present appraisals of development by integrating multiple temporal scales of analysis, but it is also a reminder that ecological change is not unidirectional. Similarly, Peet and Watts (2004) have underlined that the perspective of environmental historians has revitalized political ecology by raising “important theoretical and methodological questions for the study of long-term environmental change” (Peet & Watts 2004:14). During the 1980s, the development of environmental history helped mature critical views within the field about the accuracy of the very scientific data it was taken for granted. According to Neumann (2005:53), “by uncovering the temporal dynamism of ecosystems and demonstrating that human activities have long been shaping so-called natural systems, [environmental history] helped to undermine the scientific models that they had initially used to evaluate history”. This learning process has contributed to develop a critical appraisal of the construction and uses of scientific knowledge, something that has established connections with the field of history of science.

Critical analysis of the politics of nature conservation –a central topic of research for political ecology– highly benefited from incorporating a historical perspective. By showing the

limitations of scientific models or, even better, by uncovering its highly political and colonial character, political ecology researchers were able to show that colonial scientists and resource managers often imposed their vision that local peoples' land uses were ecologically degrading. The critical appraisal of these narratives of degradation also helped showing its long-lasting impact in shaping the management of "natural reserves", replicated in many conservation projects today (Davis 2009; Neumann 2005). A paradigmatic example is the work of Fairhead and Leach (1996), who accumulated a wide array of sources (archival, scientific, ethnographic, remote sensing) to show how forest islands in West African savannah-forest transition zones were historically associated with the establishment of new villages. This demonstrated that colonial experts and scientists, who had judged that such forest islands were the remnants of a formerly wild forest in retreat due to the ecologically degrading practices of human communities, had misread the African landscape "guided by negative preconceptions about African land uses" (Neumann 2005:57).

Along these lines, some researchers working on the overlapping spaces between political ecology and environmental history consider that the meeting ground between disciplines has received relatively little attention (Davis 2009). Diana K. Davis, in her own words "a geographer whose work is increasingly categorized as environmental history" (ibid. 2009:285), reflected upon what she termed "historical political ecology" in a special issue of the geography journal *Geoforum* and made an effort to distinguish it from historical geography and environmental history. Davis argued that historical political ecologists "deliberately relate their research to *contemporary situations* in order to try to envision / facilitate environmental development that is more socially just and ecologically appropriate" (emphasis is mine, Davis 2009:285). For Davis, this emphasis on present-day issues is one of the differences between historical political ecology and environmental history or historical geography. Similarly, Karl Offen suggested that a historical political ecology approach could be defined "as a field-informed interpretation of society-nature relations in the past (...), how and why those relations have changed (or not changed) over time and space, and the significance of those interpretations for improving social justice and nature conservation *today*" (emphasis is mine, Offen 2004:21).

Leaving aside the attempts to draw lines between disciplines and subdisciplines, these explicit references to the present – connecting historical research to the present day and making efforts to establish explicit relations to contemporary situations – may make historians cringe. The uncertainties and qualms of historians when dealing with "excessive reference to the present"

have been addressed by historian of science Naomi Oreskes in a provocative article entitled “Why I am a presentist” (Oreskes 2013). Oreskes’ piece is a vindication of the value of history, and an open defence of engaging in public contemporary debates and acknowledging the historian’s motivations in her exploration of the past, while at the same time producing solid and rigorous academic research. Oreskes considers herself – and all historians – “motivational presentists”, meaning that they always approach history from the present, and that historians write history because they do believe in its value, which always arises from a motivation, reason or worry within the present day. She warns that historians have become too concerned with the fear that if they speak to the present, they undermine their own professional integrity –in other words, that their motivations will bias their methods. This has, she argues, resulted in losing public relevance and their role being gladly taken by journalists. Oreskes asserts that it is perfectly possible for professional historians to distinguish between methods and motivations, and to remain rigorous and nuanced researchers while also engaging in public conversations. Moreover, feminist epistemologists have demonstrated that different class, gender and racial standpoints actually contribute to build more complex understandings, not the other way round. Last, but not least, making motivations explicit may help writing more engaging and interesting history (ibid.).

If Oreskes’ reflection about the value of history has attracted attention it may well have been due to the public impact of her previous research, particularly the book *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (2010) co-authored with Erik M. Conway. In *Merchants of Doubt*, Oreskes and Conway look into the past to explore the similarities between current public debates around climate change and earlier controversies about the health impacts of tobacco, acid rain or DDT. Oreskes and Conway document the role that certain researchers had in manufacturing doubt in public opinion even when scientific consensus had been reached on critical topics – hence the title of the book. *Merchants of Doubt* constitutes both a rigorous academic research and a committed militant history that binds together history of science, environmental history and political ecology (Nieto-Galán 2015). It is also a good example of the value of the scholarship from history of science and technology / STS studies for political ecology and environmental history – something underlined by Diana K. Davis (2009).

Oreskes’ defence of “motivational presentism” is, she acknowledges, scarcely an original argument. It is not that far from the famous quote of Benedetto Croce: “all history is contemporary history” (on Croce, see D’Amico et al. 1999). But along the lines presented, it

is a reasoning that may hold special value for historians of science and also for those working on environmental history. Fears of falling into presentist traps may be especially acute among historians of science precisely because the persistent presentist character of science itself, warns Oreskes (2013). In its development, science continuously rejects its past, and amateur or popular history of science can thus easily produce triumphalist accounts of scientific “discoverers” and compose “tales of progress” that lead directly to the current scientific truths (ibid.).

One could argue that environmental history is on the other side of the coin. Most often, it has been accused of being presentist not because of producing triumphal and overtly progressive narratives, but precisely for the declensionist character of many of its works – that is, stories that tend to show decline, decadence and degradation. Environmental historian Ted Steinberg argues that this declensionist character is common in the field, starting with the seminal book of William Cronon *Changes in the Land*. Nonetheless, Steinberg also offers several examples of the historical complexity and nuanced narratives produced by environmental historians. From his perspective, declensionist narratives are attractive because they are associated with a powerful moral force: stories of degradation constitute moral warnings, examples of paths not to follow. At that point, Steinberg wonders: “How do we avoid the trap of presentism and still use environmental history to address concerns of pressing contemporary relevance? (...) How do we say goodbye to the declension narrative without losing the moral force associated with it?” (Steinberg 2004:266).

These questions remain open. Acknowledging the “political” character of environmental history (Barca 2016b), however, may be one of the paths forward. Adopting this perspective, the resulting histories may not be that different from the so-called “politically informed environmental history” where political ecologists saw crucial connections in the 1990s (Greenberg & Park 1994). From this angle, environmental history can do much more than contributing to sophisticated historical analysis that challenge scientific models and colonial or postcolonial narratives. As Stefania Barca has shown (Barca 2014a; 2014b; 2011), environmental history writing can be used to deconstruct powerful metanarratives of triumphalist growth and progress that leave conflicts and externalities aside. It can help movements to rescuing the silenced past of environmental violence and injustice and use it to challenge oppressive identities and forge new transformative alliances. As historians, we can make explicit our motivations as we narrate complex and nuanced stories of socioecological change, while aiming to focus environmental history in “political” issues and not only

managerial or “environmental”. Such stories need not be declensionist, but will often be stories of struggles, exposing the complexities of social and environmental movements, its defeats and victories, its hopes and contradictions. An awareness of the political character of environmental history is, maybe most of all, a stand towards the very political significance of stories – “axes of war to be unearthed”, as put it by Italian authors Wu Ming and Vitaliano Ravagli (quoted in Armiero 2011:58).

I am interested in an environmental history eager to explore political ecology, history of science and geography, and allow itself to be fertilised by these fields and thus transformed. I concur with Erik Swyngedouw when he points out that “good political ecology cannot be other than historical” (Gorostiza 2015a). Power relations are necessarily sedimented in time, and so they must be explored in historical perspective as well. As is true of the metabolic relationship of humans with nature, disciplinary relations change in their efforts to transform other disciplines. More important than finding a new label for studies at the crossroads of environmental history and political ecology is practicing cross-fertilization and infiltration (Armiero 2016). Perhaps in the case of Spain, where political ecology research literally emerged from within environmental history, we can find a telling example of these intimate and reciprocal relationships between disciplines.

## 2.2 Spanish historiography and environmental history

### *2.2.1 Renovating social history: environmental conflicts and political ecology*

In 2003, writing a state of the field of environmental history, John McNeill welcomed the germination of environmental history in Southern Europe and asserted that, in the Spanish case, it generally served “as an approach to questions of social and political struggle” (McNeill 2003:20). Spanish environmental history had sprouted from the well-established field of agrarian history and its main focus of research so far had been agrarian ecology during the 19<sup>th</sup> and 20<sup>th</sup> century. But it soon grew to encompass different strands of historical research.

The intimate connection between Spanish environmental history and sociopolitical struggle pointed by McNeill – its “radical and anticapitalist flavor” (ibid.), borrowing his own words – was clear already in the emergence of the discipline between the late 1980s and early 1990s. After three years of preparations, the first special issue of a history journal devoted to the topic of “History and Ecology” saw light in Spain in 1993. It was the journal of the Spanish association of contemporary history (*Ayer*), and the volume was edited by Manuel González

de Molina and Joan Martínez Alier (Gonzalez de Molina 2000; González de Molina & Martínez Alier 1993). It included several articles by internationally renowned environmental historians (Merchant 1993; Radkau 1993) but few Spanish based studies. The introductory article by Joan Martínez Alier sketched a research agenda for Spanish environmental history with great emphasis on the study of conflicts (Martínez Alier 1993). Martínez Alier conceived the contribution of environmental history as a renovation of social history, which he regarded as too much focused on the institutional history of the working-class struggle. By understanding social conflicts as ecological conflicts, motivated by the inequalities in the access to natural resources and services, it was possible to adopt a new perspective to social history (ibid.).

Around the same time that the authors and editors of *Ayer* were putting together this special issue, a new journal was tracing its first steps in Spain. Edited by Martínez Alier and first published in September 1991, *Ecología Política* (“Political Ecology”) emerged with a commitment to put environmentalism in line with a tradition of emancipatory social struggles. It was born as a project closely connected to the journal *Capitalism Nature Socialism*, at the time produced in California around the group of ecomarxists led by James O’Connor. As stated in the introductory editorial to the first issue of *Ecología Política*, the historical perspective was to be naturally intertwined in political ecology:

“[*Ecología Política*’s] main line will be to emphasise that environmentalism, being something new, is nonetheless inscribed in a long tradition of emancipatory social struggle, and that rural and urban social movements that have opposed and oppose exploitation have often been environmentalist movements, even if they use their own indigenous languages, different from Western environmentalism. There were and there are many Chico Mendes!”<sup>3</sup> (Martínez Alier 1991:8-9)

The main focus of *Ecología Política* would not lay in socioenvironmental history, but in exploring –and denouncing– the injustices producing social conflicts. Understanding social conflicts as ecological distribution conflicts meant interpreting that they were a result of the injustices in the access to natural resources and the different burdens of pollution laying in

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<sup>3</sup> Chico Mendes (1944-1988) was a Brazilian rubber tapper and an advocate for the human rights of indigenous peoples. He was assassinated by a rancher in 1988. The cited text from *Ecología Política* has been translated by the author. The original text is as follows: “Su línea general será la de poner de manifiesto que el ecologismo, siendo algo nuevo, se inscribe sin embargo en una larga tradición de luchas sociales emancipadoras, y que los movimientos sociales rurales y urbanos que se han opuesto y se oponen a la explotación han sido y son a menudo movimientos ecologistas, aún cuando utilicen lenguajes propios indígenas distintos de los lenguajes del ecologismo occidental. ¡Ha habido y hay muchos Chico Mendes!” (Martínez Alier 1991:8-9)

different social groups. Or, in other words, to understand that the cause of conflicts was the uneven distribution of environmental benefits and costs (Martínez Alier & O'Connor 1996).

Nonetheless, as a journal situated halfway between academia and activism and mostly concerned with the Global South, *Ecología Política* did sometimes publish research with a historical perspective, and also reviewed books that adopted this standpoint. Political ecology thus emerged in Spain intimately interwoven with the development of environmental history. It therefore comes as no surprise that some truly environmental history also made its way through the pages of *Ecología Política*. During the 1990s, Eduard Masjuan's research on the history of anarchism in the Iberian Peninsula, its "environmentalist discourse" and its relation with human ecology was repeatedly published in the journal (see for instance Masjuan 1996; 1995; 1993). After defending his PhD thesis (Masjuan 1998), supervised by Martínez Alier, Masjuan published a monograph focused on human ecology and Iberian anarchism before the Spanish Civil War (Masjuan 2000). Other publications have followed, with a particular interest in Neo-Malthusianism (Masjuan & Martínez Alier 2008; Masjuan 2002).

### *2.2.2 Accounting material and energy flows: Social metabolism*

However, it would be misleading to conceive Spanish environmental history as a discipline mainly focused on revitalising social history. First and foremost, as pointed out by McNeill and several others, environmental history in Spain emerged from the strong tradition of agrarian history and its connection to forest history (Ortega & González de Molina 2009; McNeill 2003).

In this regard, the path breaking work of José Manuel Naredo, introducing energy accounting in agroecological systems, was key in the evolution of this field during the 1980s and 1990s (Naredo 1996; Naredo & Campos 1986). The study of social metabolism – material and energy flows accounting, using the tools of the emerging field of Ecological Economics – brought fresh air to agrarian history. According to González de Molina, this strand of environmental history made a fundamental contribution to one of longest-standing debates in Spain: that of the country's "economic backwardness" (Winiwarter et al. 2004).

Traditionally, Spanish agrarian backwardness (low cereal yields) was regarded by many historians as one of the main reasons that slowed down the "modernisation" and industrialisation of the country. Approximately since the Modern Age, the productivity of

Spanish agriculture did not grow, and thus was not able to fuel industrialisation through the provision of capital, labour and a market for industrial products. Usually, historians saw in the differences between the average yields of cereals in Northern Europe and Spain the certification of the notion of Spanish backwardness (Winiwarter et al. 2004). The joint work of Naredo with Ramon Garrabou, together with the contributions of González de Molina and Enric Tello, challenged this notion of “backwardness” through a meticulous examination of the environmental limitations set by nutrient and water availability. According to their research, these environmental limitations were the main reason for the low agricultural yields (González de Molina 2002; Garrabou & Naredo 1999; 1996; Tello 1999).

The collaboration of these authors resulted from a long academic relation but was also bolstered by a series of seminars organised during the 1990s by José Manuel Naredo and Ramon Garrabou at the Universitat Autònoma de Barcelona. These meetings brought together historians, biologists, agronomists and economists, among other, in an attempt to develop a better understanding of the agriculture in the Iberian Peninsula (Martínez Alier 2008; Gonzalez de Molina 2000; Garrabou & Naredo 1999; 1996). Their interdisciplinary character may also be seen as one of the seeds of the collaborative work that still characterises Spanish environmental history. Unlike most historians, which tend to work alone (McNeill 2003), it is quite common in Spanish environmental history to find co-authored papers that reflect the teamwork behind them. This mutual fertilisation has, at the same time, contributed to an enhanced scrutiny of socioenvironmental conflicts.

### *2.2.3 Property regimes and environmental history*

The research agenda in Spanish environmental history launched by Martínez Alier in 1993 made special emphasis on the effects that each type of property regime may have in the regulation and management of natural resources. If social conflicts could be interpreted as ecological distribution conflicts caused by the uneven access to “nature”, then it followed that different property and management regimes would have different impacts in local populations and environments. Against Garrett Hardin’s argument about the “tragedy of the commons” (Hardin 1968), according to which shared resources were condemned to be overexploited by individualistic ethos and could only be saved by privatisation or state control, Martínez Alier put forward the idea that what may cause the degradation of common resources was actually



its very privatisation. Therefore it may be more appropriate to talk about a “tragedy of the enclosures” (Martínez Alier 1993).

Along these lines, the study of forest management and wood use in historical perspective could help understanding practices of stealing and burning subsequent to the privatisation of these spaces, which may thus be interpreted as forms of protest. Similarly, Martínez Alier suggested that it was possible to study the different types of pollution, its consequences and the reacting social conflicts (González de Molina & Martínez Alier 2001; Martínez Alier 1993).

By the mid-2000s, the privatisation of common property (particularly forests) and the debate about the “tragedy of the commons” had become one of the preferential topics of Spanish environmental history. According to some Spanish environmental historians, it often was not possible to distinguish between forest history and environmental history in Spain (Winiwarter et al. 2004). A good part of the renewal of social history carried out by environmental history researchers dealt with the analysis of common resources. In a special issue of the journal *Historia Social*, forest historian Eduardo Rico (2000) examined the relation between forest policies and social conflict in the northeast of Spain during the first years of the Francoist dictatorship (1939-1959). In the same volume, González de Molina and Antonio Ortega (2000) explored the relation between conflicts and common resources during the 19<sup>th</sup> and 20<sup>th</sup> centuries. Antonio Ortega, in particular, devoted most of his work during these years to examine the dismantlement of common property in Spain (Ortega Santos 2001) and also published a book on the “tragedy of enclosures” in the region of Granada (Ortega Santos 2002).

Two additional collections of environmental history research – one edited book and one special issue – came to light in the early 2000s and testify to the development of environmental history in Spain during these years. “Nature Transformed” (2001) was a volume edited by Martínez Alier and González de Molina including contributions from José Manuel Naredo and several others on the modernisation of Spanish agriculture and its environmental constraints. It also included several studies on forest history – mostly on deforestation – with different case studies from Cuba and Spain. Finally, the topic of socioenvironmental conflicts or ecological distribution conflicts was addressed with chapters authored by Martínez Alier, a study of water and social conflict in Mexico by Alejandro Tortolero and a study about common resource management in the Mediterranean by Antonio Ortega. Finally, a new special issue of *Ayer* entitled “Nature and Social Conflict”, was edited by Alberto Sabio Alcutén (2002). This volume was the result of the II Meeting of Environmental History in Spain, held in Huesca,

and a further sign of the successful fertilisation of social history by Spanish environmental history.

#### *2.2.4 Missing the city: Urban environmental history in Spain*

The study of social metabolism has undoubtedly been one of the most sophisticated contributions of Spanish-speaking environmental historians to the general field, both from a methodological and theoretical perspective. A manual focusing on social metabolism and environmental history was published in 2011 by González de Molina and Víctor Toledo, and later translated to English (González de Molina & Toledo 2014; 2011). However, while most of the currently active Spanish research groups moved from agrarian and forest history in the 1980s to environmental history, their objects of research have remained relatively the same. The “rural footprint” of Spanish environmental history, both in studies of social metabolism or socioenvironmental conflict, is evident. As a result, despite early calls about the importance of urbanism in Spanish environmental history (Martínez Alier 1993), cities and urban spaces remains mostly unaddressed, as underlined in the most recent reviews<sup>4</sup> (Martín Torres 2016; Ortega & González de Molina 2009). This stands in stark contrast to the vivid development of urban environmental history in the US (see particularly Melosi 2008; 1993; Gandy 2002, among many others).

There are a few exceptions to this rule in Spanish environmental history that have to be acknowledged. In the 2002 volume of *Ayer* about Nature and Social Conflict, Joan Martínez Alier explored the relation between urban indicators of unsustainability and social conflict (Martínez Alier 2002). Moreover, as previously stated, since the 1990s the work of one of his PhD students, Eduard Masjuan, has explored the relation of anarchism with human ecology and produced several studies about urbanism and anarchist ideas about the city (Masjuan 2002; 1998; 1995). More recently, Masjuan also published about the relation between urban conflicts and water throughout the history of Barcelona (Masjuan et al. 2008).

The research on the impact of pollution related to mining activities also built some connections with urban environmental history. Juan Diego Pérez Cebada adopted a comparative approach

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<sup>4</sup> These reviews, like the present section, focus on the emergence of environmental history in Spain as a distinctive field of research. Therefore, they do not include earlier work on landscape or the relations between environment and human communities. A wider historiographical review that includes the precedents of environmental history in Spain, like the one carried out by Paulo E. Guimarães and Inês Amorim for the Portuguese case (Guimarães & Amorim 2016), is still to be written.

to examine the strategies of copper mining companies in Canada, England and Spain when dealing with atmospheric pollution and the protests of citizens (Pérez Cebada 1999), and has also examined how the expansion of mining in Riotinto (Huelva, Spain) increased the demand for wood, causing deforestation (Pérez Cebada 2001). This led him to document the first case registered of acid rain (1847) which motivated the reclamation of economic compensation (Pérez Cebada 2001). Together with Paulo Guimarães, who had been working on historical environmental conflicts in the Portuguese mining sector (Guimarães 2013), they established in 2014 a Studies Group on Environmental Conflict which next year organized an international symposium in Évora. As a result, a volume has been published on the environmental conflicts in the mining and metallurgic industries (Guimarães & Pérez Cebada 2016).

Finally, social metabolism researchers are starting to apply their tools to examine the growth of urban agglomerations and the flows absorbed from rural regions. Antonio Ortega has examined urban agriculture in historical perspective using a case study from Cuba (Ortega Santos 2010). For the city of Barcelona, Enric Tello and Joan Ramon Ostos (2012) have reconstructed urban water flows since the 18<sup>th</sup> century to the present day.

#### *2.2.5 Looking for the Spanish Civil War and Francoism*

Quite at the same time that environmental history developed in Spain, public interest in the Spanish Civil War and the Francoist dictatorship boomed. The associations for the recovery of the “historical memory” about the war and the repression during Francoism took central stage in the Spanish public sphere during the 2000s. Mirroring the tensions between history and memory, the relation between the variegated social movement for historical memory and historical research – particularly academic – has not always been easy. Javier Rodrigo argues that in the last two decades “historical memory” has configured a new historical narrative on its own right, more descriptive than analytic, characterised by its sentimentalism. Its general portrayal of the victims of Francoism as “fighters for democracy”, he argues, actually risks its very depoliticisation (Rodrigo 2013). Nonetheless, there are certainly some overlapping claims, such as the reclamation to open archival collections still classified as secret by the Spanish state. During the last years, some decisions of the Spanish government have represented a backward step in the tendency to open archival collections and seriously hindered ongoing historical research (Pereira & Sanz Díaz 2015).

At any rate, what I intend to underline in relation to the present thesis is that the surge of public interest in the Spanish Civil War and its consequences intertwined with a significant development of historical research, but did not produce environmental history works. While the trajectories of the movements for the recovery of historical memory and the historiography found some intersections, the development of Spanish environmental history went in parallel. It is true, however, that the situation regarding the environmental history of Francoism is relatively different, as shown by some of the publications already mentioned in the previous sections and other that will be outlined below. But, as it is discussed in the following sections, the international debates in environmental history of fascism have had little impact in the approaches taken to the Spanish case.

Interestingly, the very limited development of literature on the environmental history of the Spanish Civil War or the environmental history of Francoism stands in stark contrast with the intellectual trajectory of some of the main proponents of the field in Spain. After all, both Joan Martínez Alier and José Manuel Naredo had actively participated in the very first wave of publications about the Spanish Civil War and the Francoist dictatorship during the 1960s and 1970s. Both collaborated with the publishing house *Ruedo Ibérico*, established in Paris in 1961, which published (and clandestinely distributed in Francoist Spain) dozens of highly successful books that challenged the thesis and ideological position of the Francoist regime (Naredo 2008). The lingering fear experienced by leftist Cordobese peasants, still fresh thirty years after the Spanish Civil War, impressed Martínez Alier, who carried out fieldwork in the region for his first book, *La estabilidad del latifundismo* (“The stability of latifundism”), published by *Ruedo Ibérico* (Martínez Alier 1968). During his academic formative years and throughout his collaboration with *Ruedo Ibérico*, Martínez Alier was often in contact with relevant historians that worked on the Spanish Civil War.<sup>5</sup>

Several decades later, these interests and contacts have not materialised in an environmental history approach to the war with the Spanish literature. This lack of research may be related to the sphere of specialisation of Spanish environmental history, mostly focused on agrarian topics.<sup>6</sup> Marco Armiero has suggested that a similar phenomenon occurs with the environmental history field as a whole. Environmental history, he argues, has consolidated itself building a discipline isolated from the rest of history, and its practitioners are expected to

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<sup>5</sup> Joan Martínez Alier, 2017, personal communication.

<sup>6</sup> Nonetheless, it is surprising that experiences such as the agrarian collectivisations of the Spanish Civil War have not been taken up by environmental history.

talk about “environmental” topics: pollution, agriculture, rivers, or mountains, for instance. But other topics, such as revolution, fascism, war or imperialism, do not seem not so appropriate for their investigation. It is the “green ghetto”, in the expression of Armiero (2016:47-48), a comfortable and welcoming place, but maybe self-deceiving. While this specialisation trend may contribute to establish the practice of the discipline and even to its institutionalisation, Armiero asserts that it also eventually takes to its marginalisation as a “sidebar discipline” – an analogy with sidebars of textbooks that examine a certain topic or approach but at the same time keep it contained. Even worse, it risks “self-ghettoisation”, that is, “the self-conviction that our themes do not intertwine with the wider historical processes” (Armiero 2016:48). The same perspective may be applied to Spain, where environmental history sprouted from agrarian history and, despite a significant infiltration and examples of hybridisation with social history, it has remained mostly involved with crops, forests and material flows. The impermeability of environmental history to topics such as the impacts of Spanish Civil War on socioenvironmental systems or the Francoist dictatorship views on nature – to name two possible environmental explorations of these historical periods – could maybe be attributed to the comfort of the “green ghetto” (Armiero 2016:47-48).

This is by no means to belittle the great value of the contributions made by Spanish environmental history during the last twenty years. On the contrary, it underlines the urge to apply the approaches of environmental history, the theoretical insights and the analytical concepts and tools developed by social metabolism to new spaces and scenarios, and to combine them with more narrative styles. The risk of not doing so is to become irrelevant to the rest of historians, or a simple curiosity, as in the “sidebar” image suggested by Armiero. There is a lot of space for Spanish environmental history to expand and develop farther from its origins in agrarian history, exploring new research questions and themes that have already rendered rich results in other historiographic traditions. Along these lines, in the following two sections I review the international production of environmental history literature that has explored armed conflicts and fascist regimes and practices, and I attempt to draw connections with the blossoming Spanish historiography about war and the Francoist dictatorship.

### 2.3 New avenues for environmental history: war

Around the start of the new century, between the 1999 NATO bombing campaign in Serbia and the 2001 onset of the US “war on terror”, the interest in the topic of war started emerging in the work of several environmental historians. Following the studies of botanist and forest ecologist Arthur H. Westing on the environmental consequences of war (see Westing 2013 for a compilation of his texts since the 1960s), John McNeill devoted some space to the topic in his widely disseminated book about the environmental history of the twentieth century, *Something New Under the Sun* (McNeill 2001). The very same year, Edmund Russell published a path-breaking work, *War and Nature*, which examined the history of pest control and chemical warfare in the United States and showed the intimate connections between war and control of nature throughout the 20<sup>th</sup> century. From an environmental history approach, Russell explored history of science and technology, connecting scientific discourses about pest control with military and industrial projects of chemical warfare (Russell 2001).

Few publications have matched the sophistication of Edward Russell’s approach. But these pioneering works gave way to a stream of articles published mostly in the pages of the journal *Environmental History*, which soon expanded into edited collections and monographs. John McNeill explored the use of woods in warfare throughout history (2004). In her study of nature and wilderness during the American Civil War, Lisa M. Brady showed how this armed conflict changed not only the American natural environment, but the very ways its citizens thought about war and wilderness (Brady 2012; 2005). Chris Pearson exposed the different ways in which the French resistance but also the collaborationist Vichy Regime mobilised forests during the Second World War (Pearson 2008; 2006). The study of militarised landscapes – “sites that are partially or fully mobilised to achieve military aims” (Pearson 2012b:115) – has attracted special attention in the literature (Dudley 2012; Pearson 2012a; Coates et al. 2011; Pearson et al. 2010). Case studies such as the demilitarised zone between North and South Korea, which has become a safe haven for some animal and plant species, have been used to explore the indirect disruptions caused by militarisation (Brady 2008).

As if these studies were not enough, during the past few years, environmental history conferences have been inundated with sessions about war, adding different historical periods and geographies, and leading to the creation of a specific network of researchers.<sup>7</sup> After the first edited collection about the topic, *Natural Enemy, Natural Ally* (Tucker & Russell 2004)

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<sup>7</sup> See <http://environmentandwar.com/>

others have followed focusing on the Cold War (McNeill & Unger 2010) or, most recently, on the Second World War (Laakkonen et al. 2017). Interestingly, however, the impact of war in urban spaces remains mostly unaddressed in this subfield of environmental history.

Moreover, this growing expansion of environmental history towards war has not included Spain. Very few publications in Spanish or Catalan have dealt with the general topic. McNeill's *Something New Under the Sun* was translated into Spanish in 2003 and enjoyed a relatively wide circulation. His interest in war was also patent in Spanish-speaking publications such as *Ecología Política*, where McNeill wrote about the history of the environmental impact of the US army since 1789 (McNeill & Painter 2002). A few years later, he contributed to a collection of Latin American and Caribbean environmental history with a study about the relation between war and yellow fever in the Caribbean region between the 17<sup>th</sup> and 19<sup>th</sup> centuries, which was also translated to Catalan for a special issue of the journal *Recerques* (McNeill 2008a; McNeill 2008b). No publication, however, adopted a similar approach in the Spanish context. As recently as 2012, in reviewing the literature about militarised landscapes, Chris Pearson explicitly pointed towards the Spanish Civil War: “research is also needed on the environmental history and geographies of conflicts, such as the Spanish Civil War, whose landscapes have been largely overlooked” (Pearson 2012b:126).

However, one may question why the Spanish Civil War constitutes an interesting case of study from the perspective of environmental history. First and foremost, the Spanish Civil War is part of the Interwar Period and is usually considered the prelude to World War II. As such, it testifies to the growing targeting of civilians between the two world wars (Rodrigo 2009b; Kramer 2007). Cities, in particular, became for the first time military targets, and the bombing of civilian populations in Madrid, Gernika and Mediterranean cities had significant international impact. For some, the war represented the culmination of the fierce opposition between rural and urban Spanish regions. Most of the cities and industrial regions were in the hands of the Republican loyalists at the beginning, while the military coup that started the war was successful and rapidly expanded in rural regions. In fact, some of the conservative supporters of General Franco saw embodied in cities many of the moral values they despised, and represented them as “material and moral predators of the products produced in a virtuous rural land” (Alares López 2010:66). From such fierce anti-urban discourse – shared by the Nazi-fascist regimes of Germany and Italy during their first years – it follows that once the war was over with the defeat of the Republicans, the regeneration of Spain through the promotion of ruralisation was the natural path to follow. This configures a clear entry for an urban

environmental history interested in war and fascism, yet firmly anchored to agrarian topics and ruralist ideas about nature. Through two cases of urban water supply under war, I explore these and other issues in research **articles I and II**, in the second part of this thesis.

Secondly, as suggested by Pearson (2012b), the settings and characteristics of some of the crucial battles of the Spanish Civil War – for instance the long siege of Madrid, or the last Republican offensive, crossing the Ebro River – represent excellent case studies from the perspective of landscape militarisation. In fact, although military operations finished in 1939, the Francoist dictatorship maintained the state of war in force until 1948, thus warranting the total control of the army over civil authorities (Rodrigo 2008). This perspective expands the timeline of the Spanish Civil War between 1936 and 1948 and blurs the borders between war and dictatorship. It better encompasses the study of armed resistance against Franco, which continued in the form of the guerrilla until the late 1940s and was especially active in the Pyrenees and other regions, usually making use of remote spaces – forests, mountains – as a refuge (see for instance Martínez de Baños Carrillo 2002). In research **articles II and III** I contribute to address this gap. Additionally, the impact of war and militarisation can be much wider than simply on specific militarised sites. As pointed by John McNeill, by halting economic activity military wars can also temporally contribute to decrease human pressure on certain ecosystems (McNeill 2001). This was a useful insight that motivated the first steps of the investigation I present in research **article VII**.

Finally, and perhaps more importantly, the Spanish Civil War is also known because its outbreak set in motion in certain regions under the control of the Spanish Republic a social and political revolution that collectivised industries, urban services and agriculture (Castells Durán 1993; Adín et al. 1989). As the war progressed, these collective regimes of management were sometimes cancelled or substituted by nationalisations – in research **article I**, I examine one of these experiences. They constitute unique case studies which can be linked with the interest of Spanish environmental history on the different socioenvironmental impacts of different property and management regimes.

From this perspective, the socioenvironmental disruption caused by the conflict adopts a much wider scope, which also concerns the Francoist side. Under the influence of its Italian and German allies, Francoist factions adopted economic guidelines that bestowed great prominence to the notion of autarky. The goal of national economic self-sufficiency, throughout the proper exploitation of its natural resources, took central stage even before the end of the war. “Spain



is a privileged country that can meet its own needs”, declared Franco in 1938, “...We have no need to import anything” (quoted in Fontana 1986:29). On the model of the Italian *Istituto per la Ricostruzione Industriale* (“Institute for Industrial Reconstruction”), the Francoist dictatorship planned the creation of the National Institute of Autarky, which saw the light after the end of the war, in 1941, with a last-minute name change: National Institute of Industry (Gómez Mendoza 2000). Military officials and engineers predominated in the top ranking positions of the new Institute, aimed to become the national military-industrial complex to supply the army. The autarkic project was, after all, basically a military project (San Román López 1999). During the 1940s, military expenditure in Spain usually consumed one third of the state budget, reaching its peak in 1945 with 40.3% (Cazorla Sánchez 2000).

But industrialisation was not the only manifestation of the national project for self-sufficiency launched during the first years of Francoism. Reforestation, dam-building, agricultural colonisation, synthetic fuel production or the expansion of the fishing fleet – the topic of research **article IV** – to name a few, were interwoven with the aim to foster a rebirth of the national glory and reach “economic independence”. These views materialised in Spanish landscapes and also in its colonies (Spanish Guinea, the Spanish Protectorate of Morocco and the so-called Spanish West-Africa), which were conceived as the complements to the Spanish economy. The key role that engineers and scientists had to play in these transformations has received increasing attention in recent years in the field of history of science and technology (Camprubí 2010; Presas i Puig 2010; Saraiva & Wise 2010; Saraiva 2010). This literature has pointed to the notion of autarky as a common thread between European fascist states, and underlined how the limitations of autarky “were openly referred to by fascist leaders to justify territorial expansion” (Saraiva & Wise 2010:425), thus reinforcing the connections with war. In contrast to this perspective, the abundant literature on the environmental history of fascism has focused mostly on the nature conservation policies carried out in Germany and Italy. In the next section, after discussing these debates, I return to the focus on autarky as discussed by historians of science Tiago Saraiva and Norton M. Wise (2010), explain the approach of these authors with more detail and argue that it configures an stimulating approach that can be applied to environmental history as well.

## 2.4 New avenues for environmental history: fascism

### *2.4.1 Histories of conservation*

Starting in the 1980s, the environmental politics of the German National-Socialist regime have received a great deal of research attention. The extensive literature devoted to the German case can be very much explained in contemporary terms by the growing importance of the German Green party (*Die Grünen*), which first obtained representation in the *Bundestag* in 1983. Only two years later, Anna Bramwell authored a controversial biography of Walther Darré, Minister of Agriculture in Germany between 1933 and 1942 (*Blood and Soil: Walther Darré and Hitler's Green Party*, 1985). Bramwell explicitly connected 1980s Green thought to a supposed Nazi environmentalism, and claimed that Green advocates had constituted a significant sector of the Nazi state (Bramwell 1989; 1985). The controversy spurred by Bramwell's work contributed to the explosion of a new research field in the 1990s: research on nature conservation during the National-Socialist regime (Motadel 2008). In contrast, the environmental politics of other dictatorships during the Interwar Period or the Second World War remained less studied.

Despite the fact that Bramwell's work is considered to be well refuted (Motadel 2008), recent research on the environmental history of Nazi Germany has continued to place major focus on the conservation policies of the state and the inner clashes between different sectors of German administration and the National-Socialist party. Based on the current literature, the existing environmental history of Nazi Germany can be regarded mostly as a history of nature conservation. Such prominence of the conservation approach is clear in the title of the work of Frank Uekotter (*The Green and the Brown: A History of Conservation in Nazi Germany*, 2006). We also find it – along with the long shade of Bramwell's controversy – in several chapters of the work edited by Franz-Josef Brüggemeier, Mark Cioc and Thomas Zeller (*How Green were the Nazis? Nature, Environment, and Nation in the Third Reich*, 2005).

While more recent research on Nazi Germany has widened the range of topics (see for instance Moss 2016a; Moss 2016b), the distinguishing approach of conservation history –focused on the inner conflicts between different groups of influence– is pervading. The work of Staudenmaier (2013) on organic farming, for example, reproduces a point of view focused on the institutional basis backing this specific type of agriculture, and discusses the support that such views had in Nazi institutions. Such an approach risks leaving aside the more general relevance of Nazi's national policies on agriculture – that is, a project focus on reaching

national self-sufficiency in food production, feeding the nation with the products of the national soil – and the role that biodynamic agriculture might play in it. Moreover, it shows again the long-living influence of Bramwell’s work, since it focuses on the controversies related to the role of Walther Darré as agriculture minister and makes an effort to scrutinise if and how the support for organic farming was distinctly Nazi. In contrast, the fact that self-sufficient (autarkic) policies regarding food production or wood extraction from forests were directly against conservation efforts is usually dealt with briefly in works about conservation. Published literature has acknowledged that autarkic policies and preparations for war weakened the applicability of conservation legislation in Germany (Motadel 2008) and impacted German forests severely (Uekotter 2006).

The environmental policies of other fascist regimes like the Italian or Spanish ones have received significant less attention than the German case. However, this body of literature is growing and shows the influence of research devoted to conservation issues in the German case. In the case of Italy, early research focusing on conservation history already paid some attention to the attitudes of the fascist regime regarding natural parks (Sievert 1999). Recent contributions, however, have started shifting away the focus from conservation to the more general relation between the visions of nation and nature in fascist regimes. Marco Armiero and Wilko Graf von Hardenberg (2013) have crucially argued that the fact that a fascist regime did not have an explicit environmental discourse does not mean that the environment was not present in its narratives and policies. Along these lines, they have fruitfully explored the blend of nature and people in fascist narratives about reclamation and improvement of nature in Italian national parks (Armiero & Graf von Hardenberg 2013). Marco Armiero has shown how fascist narratives about the “new Italian” people to be shaped made use of Italian mountains as the repository of the “true” Italian, brought up in an environment that made its people stronger and more pure (Armiero 2014). The work of Graf von Hardenberg (2014) on Italian national parks has underlined its propagandistic use and has stated that nature conservation was not a priority within the fascist regime, despite the four parks established during the 1920s and 1930s. The use of these spaces by national associations of organised leisure is nevertheless an excellent standpoint to analyse the fascist conception of the relation between humans and nature, as studied by Patrizia Dogliani (2014). Finally, the work related to the fascist vision of the nature in the African colonies such as Somalia and Ethiopia, and the Italian mission to conquer it and transform it, is particularly innovative (Caprotti 2014; Polezzi 2014).

The politics of the Francoist dictatorship in Spain in relation to the environment remain less studied. Exploring the topic of nature conservation, however, Ramos Gorostiza (2006) highlights that during the first years of the dictatorship nature conservation policies were emptied and continuity with the conservation projects launched in the first decades of the 20<sup>th</sup> century broken. Following Bramwell (1989), Ramos Gorostiza (2006) points out that no new national parks were created until the 1950s and argues that neither the Francoist regime nor the fascist party (Falange) showed a particular interest in nature. However, rejecting possible similarities between Francoism and other fascist regimes regarding the role of the national environment on the base of Francoism's "lack of interest" on conservation might prevent a deeper approach to the discourses and practices of the regime towards nature, resources and landscapes. As pointed out before, Armiero and Graf von Hardenberg (2013) have argued that the environment can be central in the discourses and policies of fascist regimes even if those didn't have an explicit environmental discourse or implemented conservation policies.

In summary, one of the consequences of the controversy spurred by Anna Bramwell during the 1980s and the wide range of studies devoted to conservation during the Nazi regime may have been an approach to environmental history of fascism that focuses excessively on the issue of nature conservation. Such unbalance might have prevented a more general attention to other defining features of fascist politics and practices that mobilised "nature" and can be misleading when starting comparative research. In other words, maybe environmental historians should care less about how much nature conservation was implemented by the Nazi-fascists. Focusing on questions such as "how green were..." involves the assumption that being "green" means the same thing in very different contexts. An alternative entry for comparative approaches to fascist environmental politics and the circulation of environmental ideas and policies among fascist regimes may lay in other approaches or concepts, such as ruralism, autarkic ideas and practices, or the experiences and trajectories of scientists and engineers.

#### *2.4.2 Ruralism and socioenvironmental conflict*

In this direction, several of the issues raised by Armiero and Graf von Hardenberg (2013) for the environmental history of fascist Italy point to other possible entry points for comparative analysis. One of them is the importance assigned to rural ideology by fascist regimes, which configured a narrative that blended in nature and people (Armiero & Graf von Hardenberg 2013). Although disregarded by Ramos Gorostiza (2006) as an empty propaganda discourse,

ruralism has also been successfully explored in the Spanish historiography for comparative purposes between fascist regimes. Alares López (2010; 2011) has highlighted that one of the shared features of fascism was its scorn for cities, conceived as corrupt and morally degraded. Such attention to the rural areas of the country and for the peasant figure was shared by Spain and other regimes like Italy, Germany or Austria (Lanero Táboas 2011b; Alares López 2010; Arco Blanco 2007). In 2011, the Spanish journal *Ayer* devoted a special issue to the agrarian policies of fascism in comparative perspective. Significantly, despite the topic, a review of the reference lists of all the authors, whose case studies range from Spain to France, Portugal and Germany, shows little presence of environmental history studies (Lanero Táboas 2011a).

The Italian experience, as in many other fields, was particularly an object of the Spanish fascists' attention and a source of inspiration for the Francoist projects. Central to the materialisation of ruralist ideals in Spain was the creation of the *Instituto Nacional de Colonización* (National Institute of Colonisation, INC) immediately after the end of the war. The characteristics of the "inner crusade" for opening new arable lands in Spain and the establishment of specific settler profiles to be supported by the INC, as discussed by Alares López (2010), confirm that "in fascist discourses and politics, reclamation was not only about land and water; it also included humans, who needed to be redeemed as well" (Armiero & von Hardenberg 2013:291). Ideas of self-sufficiency and localism were very present in INC projects. The new rural towns promoted by the INC were conceived as "semi-closed units", and Alares López argued that such ideas were close to "a pre-industrial capitalism, adapted to autarkic needs and oriented to the constitution of closed and self-sufficient economies" (Alares López 2010:73).

An idealisation of the rural world and peasant work operated at the base of all these projects, where local and regional cultures were conceived as uncontaminated and the peasant connection with the land was glorified. Such ruralist images of social consensus and support for the regime have been challenged by the research on the impacts of autarkic reforms and social conflict – where Spanish environmental history, as previously presented, has left its footprint in social history. Miguel Ángel del Arco Blanco has painted a dark picture of daily repression during the autarkic years of hunger (Arco Blanco 2010; 2006). Starting in the 1950s, Pablo Corral has examined the variety of socioenvironmental conflicts arising in the region of Aragón (Corral Broto 2015; 2014). Other studies have dealt with the conflicts generated by reforestation projects since 1939, as well as within the wood industry (Arco Blanco & Martínez Espinar 2009; Rico 2000).

In summary, ruralist ideology has been regarded as a defining element of fascist ideology (Alares López 2011) and successfully studied in comparative perspective. It is, however, deeply intertwined with autarkic policies, and played a relevant role in laying the ideological foundations of the autarkic project in rural regions. Beyond the fascist idealisation of the rural world and its balance with cities lays a deeper endeavour: a quest for political and economic independence throughout (national) policies towards self-sufficiency.

#### 2.4.3 *Autarky/autarchy and the contribution of history of science*

In 2010, Tiago Saraiva and Norton M. Wise edited a special issue of the journal of *Historical Studies in the Natural Sciences* addressing the relation between fascism and history of science. The authors' aim was to "to place science at the heart of our understanding of fascism" and in this way to overcome the exclusive focus on Nazi Germany and fascist Italy which had predominated in previous studies (Saraiva & Wise 2010:420). In order to carry out this comparative project and bring in case studies from Portugal, Spain and France, in their introductory article to the special issue Saraiva and Wise underlined the commonalities between the different European regimes under fascism. As a characteristic feature of fascist states, they pointed to the intimate relation between the notions of autarky and autarchy. In other words, they claimed that the word 'autarky' had actually conflated two ideas "in usage, spelling and meaning": autarky (self-sufficiency, from Greek *autarkeia*) and autarchy (self-rule, from Greek *autarchia*); and that this conflation was fundamental to understand fascist regimes (Saraiva & Wise 2010:424).<sup>8</sup> In terms of interpretation, the notion of "autarky" focused on political economy and the improvement and exploitation of the nation's resources, while the idea of "autarchy" kept the focus on repression and authoritarian control. Its combination could be applied to examining the role of scientists within fascist regimes to attain improvements in self-sufficiency policies while keeping in mind how their scientific mission was carried out within the structures of repressive regimes that had dire consequences for significant parts of the population.

Tiago Saraiva applied this approach to the study of self-sufficiency policies related to food production. He examined wheat genetics research, analysing the Wheat Campaign (*Campanha do Trigo*) and the Battle of Wheat (*Battaglia del Grano*) in fascist Portugal and Italy

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<sup>8</sup> This conflation is even stronger in Spanish, where "autarquía" encompasses both meanings. See for instance the online dictionary of the Real Academia de la Lengua, <http://dle.rae.es/?id=4QWqnm4QbtkL>, last accessed August 10 2017.

respectively (Saraiva 2010). By taking the connection between the national soil and the nourishment of the nation as an object of study, Saraiva was focusing on the interrelation between nation and nature from the perspective of the history of science. A few years later, from an environmental history standpoint, Marco Armiero and Wilko Graf von Hardenberg made explicit a comparable aim in their introduction to a special issue of *Environment and History* about nation and nature (Armiero & Graf von Hardenberg 2014). Saraiva's focus on the efforts to feed the nation with the products of the national soil showed precisely that fascist regimes without explicit environmental discourses or conservation projects had nonetheless the environment very present in their narratives and policies (Armiero & Graf von Hardenberg 2013; Saraiva 2010). Interestingly, as he would articulate in a later paper, his focus on the role of engineers and scientists between nation and nature came easier in the case of Portugal, a country where no national parks were established until 1971. This circumstance certainly made it difficult to apply directly the approach of German studies in environmental history, that had focused on nature conservation (Saraiva 2016a). From this perspective, the work on the history of science in fascist regimes contributes to overcome the German-focused debate about the importance of conservation policies. Exploring the approach of Saraiva and Wise in comparative terms faces, nonetheless, an additional difficulty in countries like Portugal, Spain, Hungary or Greece: finding the adequate theoretical footing in studies that interpret these regimes as fascist or "fascisticized" (Kallis 2003).<sup>9</sup>

The duality of the notion of "autarky/autarchy" had also been noted by historians working on the social history of the Spanish dictatorship. In his interpretation of the Francoist dictatorship, Michael Richards (1998) embarked in the same etymologic discussion. Although he had no

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<sup>9</sup> Saraiva and Wise (2010) acknowledged that there was no historiographical consensus on the typology of the regimes of Franco in Spain, Salazar in Portugal, Metaxas in Greece or Horthy in Hungary. However, they used the notion of "fascistization" (Kallis 2003) to adopt a comparative approach. Focusing on the "impureness" of fascist regimes, but emphasising the presence of a fascist continuum during the interwar period allows to align not only Italy and Germany under the "fascist" category, but several more countries. Kallis (2003) challenged the differentiation between the allegedly "authentic" fascist regimes (Italy and Germany) and other categories such as "authoritarian" or "parafascist", finding in the concept of "fascistization" a way to compare them. In later works, Saraiva relied on the work of Loff (2008), among others, to substantiate the connections of the Salazar Estado Novo with a continuum of fascist regimes in Europe. In the Spanish case, Javier Rodrigo (2009a) has argued that two different interpretations concerning the nature of the Francoist regime have traditionally clashed in the Spanish historiography. The first, emerging in the 1960s in the context of the Cold War, defines Francoism as an authoritarian regime, and highlights the differences with fascist regimes, allowing an alignment of Francoism with other authoritarian countries against international communism. The work of Linz (1964) is considered the beginning of this historiographical trend. In sharp contrast with this interpretation, several scholars have categorised Francoism as a fascist regime, focusing on its foundational years and promoting comparative approaches with other countries. Examples of this trend are the work of Preston (1997) and Richards (1998), among others. These authors reject the existence of an ideal type of fascism, and underline its impureness and heterogeneity (Rodrigo 2009a). The approach of this thesis concurs with the latter, while acknowledging the controversial nature of this ongoing debate.

specific interest in the notion of self-sufficiency or national improvement, Richards (1998) underlined that social control and repression were embedded in the notion of ‘autarchy’ and therefore intertwined in the autarkic project of Francoism. In his interpretation, the ‘autarchic’ project involved sealing Spain off the outside world and treating it as if “under conditions of quarantine” (Richards 1998:174). Richards regarded autarkic/autarchic policies and efforts towards self-sufficiency as a fundamental part of the formation of the Francoist regime. In other words, as also underlined by Saraiva and Wise, the impossibility of total self-sufficiency should not be an argument to play down the importance of this notion in the formation of the “new state”, since the intertwined policies of self-sufficiency and social repression were the basis of the state-building efforts of the Francoist dictatorship and other fascist regimes (Saraiva & Wise 2010; Richards 1998). This is further discussed in research **article IV**, where my aim is to combine these approaches about autarky/autarchy to examine fishing expansion between the war and the first decade of the Spanish dictatorship. Similarly, in research **articles V and VI** I delve in the notions of autarky and self-sufficiency and explore its circulation in space and time. Throughout the thesis, I use the word ‘autarky’ to refer to the dual concept, turning only occasionally to ‘autarchy’ when I explicitly intend to emphasise its socio-political and repressive dimension.

Among the articles of the special issue edited by Tiago Saraiva and Norton M. Wise in 2010, one dealt with the Francoist regime. Through the example of rice genetics during the Francoist autarky, Lino Camprubí examined the active role that scientists took both in the formation of the Francoist state and in the transformation of the Spanish landscape (Camprubí 2010). A few years later, an expanded version of this article became one of the chapters of Camprubí’s book, *Engineers and the Making of the Francoist Regime* (Camprubí 2014). Using five different and independent microhistories, Camprubí illustrates the importance of science and technology in the construction of the dictatorship. Through dams, rice genetics, concrete, churches and laboratories, he shows the importance of science and technology for the redeeming mission that Francoism attributed to itself. Camprubí recounts Saraiva and Wise’s notion of autarky/autarchy and fascist regimes (2010), but does not explicitly adhere to it. He is not concerned with giving a definition of fascism or with the political character of the Francoist regime. Instead, he underlines the wider international dimension of economic nationalism during the Interwar Period but also after the Second World War. The book does not, however, privilege comparative approaches, but succeeds in substantiating its main argument about the central role of engineers and scientists. It constitutes a novel and carefully researched work



about the Francoist transformation of Spanish environment that is not concerned with the politics of nature conservation. It is the notion of redemption, instead, what emerges as central, and the highly political character of the “reconstruction” project of Francoism.

In summary, both literature from the fields of history of science and the strand of Spanish contemporary history that regards Francoism as a fascist regime have highlighted the duality of autarky/autarchy as a distinguishing feature of fascist regimes. Recent research on the history of science, even when not strictly adhering to this approach, has proved the great potential of studying self-sufficiency policies and its main actors in the Francoist dictatorship: engineers and scientists. Exploring the dual notion of autarky/autarchy combines the attention to economic/environmental concerns (self-sufficiency, “autarky”) with the socio-political dimension of repression (“autarchy”), and could be applied to several cases studies, either national or international, in comparative perspective. Ruralism and militarisation are the other central features of the autarkic period. Finally, the notion of scale (local, national, international) is also fundamental to discuss the materialisations of autarkic projects. In the name of autarkic needs, after all, countries like Spain, Portugal or Italy intensified their activity in the colonies, which Clarence-Smith described as a “conscious policy of imperial autarky” (Clarence-Smith 1985). The international circulation of ideas about autarky, as well as the very circulation of scientists and engineers between fascist regimes, is a potential field to explore. Researchers in history of science have started exploring the exchanges and circulation of scientists as a form of “Axis Internationalism” (Brydan 2016; Clara & Ninhos 2016). These research interests are both manifest in **articles IV, V and VI**.

Lastly, the potential connections of environmental history and political ecology with research on history of science, as already underlined by Davis (2009), are of course not limited to research on fascism or the circulation of engineers and scientists within fascist regimes. The conference “Living in a Toxic World 1800–2000”, organised in 2015 by the Catalan Society for the History of Science and Technology, is a good example of the possible cross-fertilization between these disciplines. Despite focused in history of science, the resulting studies from the conference were “inspired by the growing social concern over the thousands of new products deposited every year into the atmosphere, rivers, sea, ground, our food and our bodies”. (Guillem-Llobat & Bertomeu Sánchez 2016:67). These words could well be applied to political ecology research, and express well my motivation behind research **article VII**.

## 2.5 Research gap and contributions

In the previous sections of this chapter I have identified three major thematic gaps in Spanish environmental history. In first place, both the agrarian roots of the discipline and the focus of social metabolism in agroecological systems have left the study of cities largely unaddressed. Moreover, the methodology of social metabolism privileges flow analysis over more narrative accounts. Urban environmental history remains a pending task for Spanish historiography, as acknowledged by recent literature reviews (Martín Torres 2016; Ortega & González de Molina 2009).

Secondly, the growing subfield of studies about environmental histories of war has not dealt with any Spanish case. This is surprising, not only because since the early 2000s this has been one of the more active subfields of environmental history, but also because this development has coincided with a great expansion of the literature about the Spanish Civil War, mostly – but not only – produced in Spain. The most recent literature reviews also mention the potential of environmental history to contribute to debates about the Spanish Civil War (Gómez Bravo & Pérez-Olivares 2017). An environmental history approach to the conflict can examine not only cases of landscape militarisation but also how the conflict revolutionised property and management regimes. As a major socioeconomic disruption, war also altered socioecological systems. Both on the Republican and Francoist sides, the war and its consequences transformed agriculture, industry and services. Therefore, it constitutes a window of opportunity which can be used for many case studies and that is key to interpret the early state-building efforts of the Francoist dictatorship.

Thirdly, comparative studies about the environmental history of fascism and the intimate connections between nationalistic ideologies and ideas of nature have left Spain aside. This is perhaps explained by the focus on nature conservation of many of those studies, which is difficult to apply to the first twenty years of Francoism. However, research about Italy and Portugal has proved that fascist regimes with little or no explicit conservation policies did nonetheless grant a great importance to their national environment in discourses and policies (Saraiva 2016a; Armiero & Graf von Hardenberg 2013). Additionally, this comparative perspective also requires an adequate theoretical footing in the research that conceives the Francoist dictatorship as fascist or “fascisticized”, which the last twenty years of historiographic research in Spain provide. Contributions from the history of science have underlined the potential of the dual notion of autarky/autarchy for a comparative approach

between fascist practices about the environment and showed the critical role of scientists and engineers in the transformation of Spain during the first period of the dictatorship (Camprubí 2014; Saraiva & Wise 2010). Additionally, researchers on fascism have underlined how the notion of Europe has been mobilised by fascist movements since the 1920s (Griffin 2008b). Therefore, an environmental history approach to the post-war period in Spain –the ‘autarkic years’– can provide opportunities to examine the mobilisation of Spanish nature and the transformation of the national landscape, as well as the circulation and uses of the idea of self-sufficiency, or the importance of ruralist discourses, from local to national and international scales. War and autarky are particularly interrelated, given the military character of the autarkic project and the central role of military engineers in Spanish institutions during the first decades of the dictatorship. But the link between war and autarky also extends to social relations: in the post-war years, those who had been defeated at the Spanish Civil War suffered ‘autarchy’, as repression and social control, as a prolongation of the conflict.

In order to address these gaps, the present thesis provides in its second part seven research articles. War, autarky and its legacies are the underlying themes. Firstly, three research papers mainly focused on the environmental history of the Spanish Civil War and its aftermath, two of which bestow great attention to the role of cities. And secondly, four research articles which deal largely with the environmental history of Francoist autarky and its legacies. This division is not meant as a clear-cut separation between the articles presented. Rather, war and its intimate connection with autarky is used as an entry point to gain a wider perspective of Spanish environmental history. Moreover, an effort has been carried out in all the research articles to draw connections to present day issues, and therefore to bring history in dialogue with political ecology. Together, they are conceived as a dialogue with international historiographic trends little explored in the literature and an attempt to open up Spanish environmental history, embracing the public interest in the Civil War and its consequences. **Table I** relates the main research gaps identified in this chapter to the seven research articles presented in the second part of the thesis. The following chapter now turns to look at the methods and sources used to delve into these research gaps and presents the approaches of each research article.

| <b>Research gap 1</b>                                       | <b>Research gap 2</b>  | <b>Article number</b> | <b>Research article topic</b>   |
|---|--|-----------------------|---|
| Environmental history of war                                | Urban environmental history                                  | <b>I</b>              | Barcelona water supply during 1936-1939   |
|   |  | <b>II</b>             | Madrid water supply during 1936-1939  |
|   | Environmental history of fascism                             | <b>III</b>            | Landscape militarisation of the Pyrenees mountains during 1939-1959                       |
| Environmental history of fascism                            | Intersection of environmental history and history of science | <b>IV</b>             | The transformation of the fishing sector during 1939-1951                                 |
|   |  | <b>V</b>              | “European autarky”: Nazi-fascist discourses about continental self-sufficiency, 1940-1943 |
|   |  | <b>VI</b>             | Problematizing self-sufficiency   |
| Intersection of environmental history and political ecology | Urban environmental history                                  | <b>VII</b>            | Environmental history of water pollution in Barcelona, 1930s - today                      |

**Table I:** Research gaps of the PhD thesis connected to the article topics. Source: Own elaboration.

### 3. Methods and sources

#### 3.1 Introduction: Historians as recyclers

Upon being asked about the role and methods of activist researchers collecting data about socioenvironmental conflicts as part of the international project EJOLT (Environmental Justice Organisations, Liabilities and Trade<sup>10</sup>), Joan Martínez Alier recently stated that

“We are amanuensis, as Nettlau was. We are like recyclers of waste, a very useful profession: we gather environmental conflicts, we classify them, improve and polish the information, we map them in the web, in books or in articles, so that they are not lost and so that they feed the movement.”<sup>11</sup> (Gorostiza 2015b:23).

Martínez Alier’s reference to Max Nettlau (1865-1944) –the historian of anarchism that travelled throughout Europe collecting information about contemporary social movements and whose work largely contributed to the creation of the International Institute for Social History (IISH)– is revealing. By mapping the thousands of ongoing socioenvironmental conflicts worldwide, Martínez Alier certainly aims at unveiling the connections between them and exposing the injustices in the access to natural resources and services that fuel them. But – crucially – he conceives such an endeavour as a historical project. Although the monumental Environmental Justice map, launched by the EJOLT project and now featuring more than 2000 conflicts, does not aim at collecting *historical* conflicts, as the years pass by it becomes a geo-archival tool.<sup>12</sup> Even if the herculean task of completing it and updating it comes to a halt, it will stand as a massive archive of the socioenvironmental struggles of the late 20<sup>th</sup> and early 21<sup>st</sup> century.

Unlike present day research activists accompanying movements, historians can’t take the risk of simply acting as amanuensis. Historical sources demand to be contextualised, critically examined and verified. Nonetheless, following Martínez Alier’s allegory, one could certainly see the work of historians – particularly those concerned with social and environmental history, but not only – as similar to the one of recyclers or scavengers, a word also used by Martínez Alier. While historians do not directly recycle the stories of struggles, they try to make sense

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<sup>10</sup> Participants of these project are documenting socioenvironmental conflicts throughout the world and forming an Environmental Justice Atlas, see <https://ejatlas.org/>

<sup>11</sup> Translated by the author. In the original: “Nosotros somos amanuenses, como lo fue Nettlau. Somos como recicladoras de basuras, una profesión muy útil: recogemos los conflictos ambientales, los clasificamos, mejoramos y limpiamos la información, los mapeamos, los ponemos ordenadamente en la web, en libros o artículos, para que no se pierdan y para que alimenten el movimiento.” (Gorostiza 2015b:23).

<sup>12</sup> Environmental Justice Atlas: <https://ejatlas.org/>

of it by collecting some pieces from the bin, and exhuming others. Ted Steinberg (2002) used the metaphor of the strata in an excavation to call attention to the field of environmental history. As he put it, new social historians had dug down to unearth stories about gender relations, race, work or sexual orientation, which they had introduced into historical narratives. But they had failed to do so with the environment; they had, in Steinberg's words, "put away their shovels when they reached the land and soil itself" (Steinberg 2002:ix).

Marco Armiero has criticised this metaphor because the image of the different strata ("social" and, underneath, "environmental") reinforces the dichotomy between society and nature. Instead, he argues that the environment is mixed with social formations and actors. Therefore, practicing environmental history is not so much about "reaching the layer of the environment", but to "recognise the environment throughout the whole of the core sampling we are examining". (Armiero 2016:52). In other words, it is not that the stories unearthed or recycled by environmental historians are mixed with waste and dirt and need to be cleaned out to emerge as shiny gold nuggets. It is that the very substance they are made of is often waste, dirt and carrion, and (environmental) historians need to make sense out of it. This is no simple task, and – back to the archives and away from metaphors – it is one certainly limited by the walls and rules that institutions such as private companies, political parties or states set to the access to their own archival records. Departing from their research questions, and based on the critical analysis of the materials they amass, their nuances and contradictions, historians craft works that often take the form of stories and continue, renew, or challenge the previous research of their peers. These narratives, published in academic journals, books or disseminated in other ways, are given back to the public and can be appropriated by different groups. The analogy of recyclers is also appropriate to prevent historians from adopting a position of superiority in relation to those whom they are writing about, and to acknowledge the limitations and nuances of their work. Finally, the notion of recycling also reconnects to the idea that historians dive into the past because they believe in its value today, and thus that their motivations or present-day interests can be made explicit without "spilling over into [their] methods" (Oreskes 2013:604). As put it by environmental historian William Cronon in his presidential address to the American Historical Association, "we need to keep telling stories about why the past matters and why all of us should care about it" (Cronon 2013:19).

The results of my research about the environmental history of the Spanish Civil War and the early Francoist regime are presented in the second part of this thesis in the form of research articles. Mostly, these results are presented in a narrative form, acknowledging the limitations

underlined by Cronon (1992). Tackling the challenges that postmodernism represented for the exercise of narrative, Cronon underlined that narratives about “nature” produced by historians are bounded by at least three constraints (Cronon 1992:1372-1373). First, they simply cannot contravene or ignore established facts from the past. Second, they must make sense in ecological terms: geological and biological processes constrain the very plausibility of the narratives about “nature” that historians tell. And third, and maybe most important, unlike the stories produced by journalists or writers, historians write as part of an academic community, being aware that they are going to be evaluated by their peers, and that their narratives must resist the scrutiny of colleagues and stand as non-fiction. This is why historians advance criticism acknowledging counter-narratives in their very texts. As put by Cronon, “We tell stories *with* each other and *against* each other in order to speak *to* each other” (Cronon 1992:1373).

After this long introduction, in the following section I discuss the choice of case studies reflected in my research papers and summarise the main sources used in each. Then I move to discuss the different methodological approaches encompassed in the thesis. This is followed by a discussion of the importance of the archive as a site for political ecology research, which I argue remains mostly under-addressed in the literature. This section also includes an overview of the press sources used in the research articles. A more detailed and nuanced explanation about methods and sources is provided in **Chapter 4**, which includes a summary of each research paper and interconnects them. I have decided to do so in order to provide a better account of the research stories, the problems experienced during the investigation and the methods and sources applied in each article.

### 3.2 Choice of case studies and approach

In **Section 2.5** I identified three main research gaps in the environmental history literature about contemporary Spain. Firstly, urban environmental history. Secondly, environmental histories of war, in particular the Spanish Civil War. Thirdly, an analysis of the Francoist regime from the perspective of the environmental history of fascist regimes and practices.

The research articles presented in part II of this thesis are conceived as a contribution to address these gaps, focusing on war and post-war as an entry point to the transformations experienced by Spanish landscapes and natural resource property regimes and management. War, autarky and its legacies are the underlying themes of the compilation of articles. The first three articles

have a more direct focus on the impact of war in the cities of Barcelona and Madrid (research **article I and II**) and the Pyrenees mountains (**III**). The following three articles (**IV, V and VI**) examine the use of the notion of autarky and self-sufficiency within fascist discourses and regimes and its intimate connection with militarisation. Finally, **article VII** unfolds an environmental history of the Llobregat River from a political-ecological perspective where the importance of both the war and the autarkic years emerges as central and reaches the present day.

The first two articles explore the critical importance of certain environmental resources – water – in cities under war. By examining the performance of the water companies of the two main Spanish cities, Barcelona and Madrid, during the Spanish Civil War, I illuminate a key element of its urban environmental history (**articles I and II**). In both articles I aim at unveiling the complex workings of city's metabolism and the (hidden) power relations that sustain it, using a moment of stress – war – as an entry point. I adopt an urban political ecology approach to water management (Kaika 2005; Swyngedouw 2004), and address debates about urban property regimes (Bakker 2007) and hazard geography (Pelling 2003) from a historical perspective.

The article about Barcelona is inspired by the work of Eduard Masjuan about environmental history of anarchism and water history (Masjuan et al. 2008; Masjuan 2000). I use archival research, historical press and two interviews with former workers of the Barcelona water company to tell the story of the anarcho-syndicalist collectivisation of Barcelona's private water company. In the second article, about Madrid, I employ archival research, historical press and the personal collections of one of the main engineers of the Madrid water company to show the critical role played by the public water company of Madrid and its workers during the siege of the city. Field visits to the former battlefronts were also key to inform the narrative. In both papers the scorn that the enemies of the Spanish Republic showed for cities also emerges. The water infrastructures of both Barcelona and Madrid suffered the consequences of the first systematic aerial bombings over civilian population before the Second World War. Their distinct resistance and resilience to the effects of these attacks illustrate also their different urban environmental histories.

In the third article about the environmental history of war I examine how the post-war years militarisation of the Pyrenees mountain range transformed the border region (article **III**). Together with research **article II**, this paper aims to fill the research gap about landscape



militarisation and the Spanish Civil War, pointed out by Chris Pearson (2012b). Particularly after the collapse of the Axis forces in Europe, the Francoist regime launched a serious military effort to fortify the border with France, a region where guerrilla remained active until the late 1940s. Especially between 1944 and 1947, several military units carried out fortification works and planned the region conceiving it as a potential battlefield in case of an invasion. This has left a traceable footprint in the landscape, in the form of hundreds of fortifications, slowly devoured by the growing forests. Apart from field visits in different parts of the border which informed this research, this article relies on a wide range of national and international archives to tell the story of the militarisation of the region. The difficulties to access some military collections still classified as secret by Spanish authorities, however, motivated a wide effort to find oral sources. By exploring in detail the militarisation of the border, this paper aims at showing the role of the Pyrenees mountain range in the national(ist) discourse of Francoism and beyond – the emphasis on the idea of a “natural wall” separating Spain “from Europe”. Franco’s “Maginot Line” was an ‘autarchic’ materialisation of the diplomatic isolation of the regime after 1945: an attempt to fortify the nation through nature.

The attention to the militarisation of the Pyrenees during the first decade of the dictatorship marks the transition to a second block of research papers (**IV, V and VI**), whose underlying theme is the environmental history of autarky, its circulation and its legacies. The dual concept of autarky/autarchy as discussed by historians of science Tiago Saraiva and Norton M. Wise (2010) is key here. First, I apply it in the analysis of the transformation and expansion of the fishing sector between 1939 and 1951 – the fourth paper of the thesis (article **IV**). This article employs the rich collections of the *Instituto Nacional de Industria* and other archival sources, together with historical press, to explore the efforts of the Francoist regime to boost the contribution of fishing to feed the nation. In order to do so I examine the social repression and institutional reorganisation in the fishing sector (‘autarchy’) along with the economic reforms to increase self-sufficiency in foodstuff (‘autarky’). This involved fishing more and fishing further, in the waters of the Spanish colonies and overseas, and materialised the autarkic project into an expansive endeavour.

Along these lines, research **articles V and VI** explore the circulation of the idea of autarky through space and time. In both cases, a close reading of the 1940s historical press and publications has been key to develop the arguments. By identifying and examining a wide propaganda campaign in the Spanish press of the early 1940s, article **V** discusses the Nazi-Fascist “New Europe” discourses about “continental autarky” and the projects to reorganise

continental economy towards self-sufficiency. The virtues of the coming “New Europe” enjoyed great attention in the Spanish press before the decline of the Axis forces, and the way in which autarky was conceived and celebrated underlines the affinity of this concept with fascist regimes. From these perspective, **article V** aims at opening a dialogue with the flourishing literature that explores the Nazi-Fascist “New Europe” from the approaches of cultural history (Martin 2016) or history of science (Clara & Ninhos 2016). A glance to the “New Europe” from an environmental history perspective may be another way to overcome the focus on national stories about nature conservation in fascist regimes.

More than seventy years later, research **article VI** starts by pointing to the historical legacy of the notion of autarky, celebrated by neofascist factions today. This article deals with the current uses of the concept of self-sufficiency, and is the only one of the thesis where I did not use archival sources. It aims to contributing to a reflection on the distinction between fascist autarky and projects of democratic/emancipatory self-sufficiency, not only historically but in the present.

Finally, research **article VII** provides a political-ecological examination of the 20<sup>th</sup> history story of water pollution in Barcelona that visualises both the legacies of the Spanish Civil War and of the Francoist autarky. Following the tradition of Spanish environmental history and political ecology about environmental conflicts, this research article departs from the socioenvironmental analysis of the impacts of potash mining and attempts to provide a detailed interpretation of the history of pollution in the Llobregat River, combining environmental history, political ecology and history of science. It employs a wide review of archival sources and historical press, and benefits from a detailed interview with a worker of the Barcelona water company laboratory. This research also involved several field visits to different points of the Llobregat River. The disruptive action of the Spanish Civil War in the socioecological system of the river plays a central role in the narrative, and so does the autarkic reforms towards self-sufficiency and the repression and silencing that accompanied them. It thus stands as an example of how nuanced historical research about the socioenvironmental impacts and transformations spurred by the war and the autarkic period can contribute to a better understanding of today’s socioenvironmental controversies and challenges.

Following this introduction to the research papers, next section provides an overview of the methodologies used throughout the thesis.

### 3.3 Methodological overview

Throughout the research articles I apply an environmental history approach to examine “socio-ecological formations in a historical perspective” (Armiero 2016:49). Environmental history includes a wide range of methodologies and borrows also from other disciplines (Myllyntaus 2011). Those of historical geography, in particular, interrogating scale and space, are present in all research articles. **Table II** summarises the methodological approaches presented in relation to the research papers.

Methods vary throughout the research papers, but qualitative documentary analysis of sources – particularly archives and historical press – predominates (Aróstegui 2001). Julio Aróstegui understood “documentary analysis” as a process that goes beyond the critical analysis of the sources. It is the “set of principles and technical operations which allow to establish the reliability and adequacy of certain sources of information for the study and explanation of a determinate historical process” (2001:198).

In all research articles presented in part II of the thesis I combine the documentary analysis of sources together with other qualitative methods, such as oral history or content analysis of texts (Aróstegui 2001). When possible, I have used different archival sources or a combination of methodologies to triangulate the data (Arksey & Knight 1999), for instance by cross-referencing documentary analysis of archival data with historical press, and both with oral history.

| RESEARCH ARTICLES |   | METHODS              |                                 |              |                      |  |                                      |
|-------------------|---|----------------------|---------------------------------|--------------|----------------------|--|--------------------------------------|
| Article number    | Research article topic  | QUALITATIVE          |                                 |              |                      | QUANTITATIVE                             |                                      |
|                   |   | Documentary analysis |                                 | Oral history | Field reconnaissance | Quantitative analysis of digitized texts | Geographic information systems (GIS) |
|                   |   | Archival sources     | Press and bibliographic sources |              |                      |  |                                      |
| I                 | Barcelona water supply during 1936-1939   |                      |                                 |              |                      |  |                                      |
| II                | Madrid water supply during 1936-1939  |                      |                                 |              |                      |  |                                      |
| III               | Landscape militarisation of the Pyrenees mountains during 1939-1959                       |                      |                                 |              |                      |  |                                      |
| IV                | The transformation of the fishing sector during 1939-1951                                 |                      |                                 |              |                      |  |                                      |
| V                 | “European autarky”: Nazi-fascist discourses about continental self-sufficiency, 1940-1943 |                      |                                 |              |                      |  |                                      |
| VI                | Problematising self-sufficiency today   |                      |                                 |              |                      |  |                                      |
| VII               | Environmental history of water pollution in Barcelona, 1930s - today                      |                      |                                 |              |                      |  |                                      |

**Table II:** Overview of the methods used in the research articles. Source: Own elaboration.

Following an environmental history approach, I have applied the analytical lens to those social institutions that could be identified as hybrid components of the “socio-ecological formations” I aimed at studying (Armiero 2016:49). This, in turn, marked the direction towards the archival collections of these institutions. In some cases this election was easier than in other. For research **articles I, II and VII**, for instance, water companies were the logical institutions to explore, with its different features and power relations sedimented in time. From the approach of institutional history, I searched for and located internal company bulletins and publications which were not catalogued nor available in national libraries. In research **article III**, the Spanish army was the obvious choice, for it was the institution in charge of modelling the border landscape for war. In research **article IV**, which explores fishing within the autarkic national project, I focused on the Francoist state and particularly in the initiative of the *Instituto Nacional de Industria*. Several times, by resorting to a biographic analysis approach, I obtained key insights about some of the military officers and engineers which are central characters in these papers.

The analysis of national discourses and propaganda mobilising nature plays a central role in research **articles III, IV and V**. The Pyrenees as a natural/national border, the seas as the natural/national expansive space of Spain, or the European continent as the adequate scale for a Nazi-Fascist reorganization of the economy are often present in books and leaflets published during those years, as well as in the press. For each respective paper, the documentary analysis has focused both in the discursive dimension of these projects and its materialisation in space. This interest in space and scale is an overlap between the methodological approaches of environmental history and historical geography.

Oral history methodology (Aróstegui 2001; Fraser 1992) has also been key in several of the research papers. However, excepting for one case, its function has been to triangulate and complement critical documentary analysis of archival and press sources. By interviewing former workers of water companies, for instance, I aimed to refine my own critical analysis of the documentary evidence. Interviewing former workers in the accounting or distribution department of the Barcelona water company (research **article I**) or its laboratory (research **article VII**) improved the understanding and critical gaze at the sources of the period. In research **article II**, an interview opened the door to the correspondence of an engineer of Canales del Lozoya, Madrid Water Company during the war, and provided the necessary context for these documents. In all these cases, semi-structured interviews were carried out (Arksey & Knight 1999)

In research **article III**, however, oral sources take a more central position. When attempting to unveil the transformation of the Pyrenees landscape caused by its militarisation, the descriptive and sober character of diplomatic and military archival sources was not enough, and required to document the lived experience of soldiers and officers. Through an extended effort to find testimonies, detailed in **Subsection 4.2.3**, I was finally able to identify, locate and interview five former soldiers and three officers that had been appointed in the Pyrenees region during the 1940s and 1950s. Prior to the personal interview, I sent them a brief survey about their service in the army.

In methodological terms, research **articles II and III** –both concerned with landscape militarisation – share some features. First, in both cases I conducted fieldwork in the combat and fortification areas. In Madrid, with the support of archival sources, I surveyed the urban scenarios of the war as they stand today, and I also explored the archaeological remains of battlefields and fortifications near the water reservoirs north of the city. In the Pyrenees, with the support of archival materials and of local historians, I visited the abandoned fortifications built by the Francoist army. Maps and field visits sometimes generated new questions and hypothesis. In none of the two cases this fieldwork is particularly acknowledged in the research articles, but it greatly contributed to a more rich use and understanding of the archival sources. Secondly, in both cases the biographical reconstruction of the trajectory of two engineers involved in the war and militarisation efforts provided unexpected entries to key archival and press sources. Finally, Geographic Information Systems (GIS) were used in both research papers. While in the case of Madrid the use of GIS only involved the analysis and preparation of maps, in the Pyrenees they were useful to assess the different intensity of the fortification efforts throughout the border. In this regard, the use of GIS constituted a quantitative methodology, aggregating the number of fortifications built in different regions and visualizing it through maps (see **Annex I**).

Research **articles V and VI** are less grounded in the documentary analysis of archival sources than the rest of papers and neither employ oral history methodology. Most of the critical analysis of sources focuses on historical press and bibliographical work. Unlike the previous research articles, the contribution of these two papers partly relies also on quantitative methods (see Aróstegui 2001). Firstly, in research **article V** I present and discuss a propaganda campaign in the Spanish press. I document a total of 67 different advertisements and its publication in 15 different journals and newspapers (circa 140 impacts) between 1940 and 1943 (see **Annex II**). Secondly, in research **article VI** I discuss the emergence of the concept of

autarky in the 1930s and I problematise the concept of self-sufficiency today. In tracing the use of both words during the 20<sup>th</sup> century, I use the tools offered by the massive digitization of written sources (Google Books Ngram Viewer,<sup>13</sup> discussed in Michel et al. 2011). Last, but not least, the investigation leading to research **article VII** contributed to reconstructing the statistical data series of water quality in the Llobregat River.

Next section now turns to underline the potential of archives as sites for political ecology research, and details the archives and press collections used in the research articles.

### 3.4 Archival research, press and films review

#### *3.4.1 Archives as sites for political ecology research*

It is surprising that political ecology – a field of research that examines power relations in society-environment interactions (Greenberg & Park 1994) – has not paid more attention to the role of archives as depositories of knowledge and necessary embodiments of political power and violence (in this direction, see Derrida 1997). Scholars working at the crossroads of environmental history and political ecology have of course underlined the importance of archival research, as presented in **Chapter 2**. Recently, Paulo E. Guimarães and Inês Amorim have underlined how the variety of sources required by environmental history approaches challenge the traditional divisions between archives, libraries and documentation centres (Guimarães & Amorim 2016). But a political ecology focusing on the archive, one that explores how political power is embedded in historical records about “nature”, and manifests in its classification, conservation and digitisation, is still to be written.

A political ecologist looking for power relations will certainly find it in the interstices of the records kept at the archive. Power is inscribed in the archival categories of classification, in its order. Power is manifested in what documents are at the disposition of the public and which ones remain secret; or in the press collections that are funded to be digitised using optical character recognition software and later made available online, versus the ones that remain packed and are left aside, more prone to be affected by fungi or chewed by rats. When archives are private, power is reflected in the choice of those who are nonetheless allowed to consult collections, but also in the limits set to their curiosity. Even when archives are public, power manifests in the availability of documents – for some collections remain classified – and also

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<sup>13</sup> See <https://books.google.com/ngrams>

in how public collections have been purged in the past. All these circumstances are especially manifest in a country like Spain, which has undergone almost 40 years of dictatorship after three years of civil war.

For an historian exploring political ecology, walking into the archive is entering the field. In making sense of the categories of classification and its very organisation, in understanding what documents were produced and conserved and which others were destroyed, we are interpreting the decisions taken by past officials, managers or activists – and those of archivists as well. Maybe more than anywhere else, diving in archives reminds us that, as written by L.P. Hartley in the first lines of his novel *The Go-Between*, “the past is a foreign country: they do things differently there”.<sup>14</sup> In other words, in order to figure out where certain information may have been conserved, “one needs in some way to understand the social and epistemological organisation of the archive” (Watts 2001:10). This requires an effort to get inside the mind of those who initially produced – and catalogued – the documents. This may for instance involve working through the logics of colonial administrators, or the officials cataloguing information about individuals with repressive ends. Different research questions will necessarily lead to different sources and involve different archives (Watts 2001). “X” rarely, if ever, marks the spot.

This is why “nature” may be found in archives through precise questions and sometimes unexpected sources. As I will present in **Chapter 4**, the growth of the forest may be found in the bureaucratic military reports about the maintenance of fortifications. The critical uses of water in a city under attack emerge in the dozens of complaints received by water company managers. The strategic role of dams and reservoirs is explicit in the writings of the governmental delegate in charge of defending them, censored by the Republican Government. And the value assigned to the colonies’ fishing waters is evident in the dull minutes of technical committees of the Ministry of Industry.

If these examples are not enough, the interstices between nature and culture at the archive may be also examined from a more intimate – but no less political – perspective. In the book *Patterned Ground*, Miles Ogborn (2004) writes a beautiful entry about the archive as a place of entanglement between nature and culture. Ogborn describes the fungi, book lice, silverfish and 160 species of beetle larvae that are included with what we usually call “book worm”.

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<sup>14</sup> The first lines of the prologue of Hartley’s novel (1958) would later also act as a title to the famous book by David Lowenthal, *The past is a foreign country* (1985).



They all thrive among the pages of books and manuscripts and the surfaces of photographs and have been fought with different types of techniques throughout time. Ogborn makes clear that “the ecology of archiving is a matter of heat, light, and most of all, water”. But he also underlines that, as shown by the advanced technologies designed by NASA and applied to conserving and protecting the most valued national documents of the United States (such as the Declaration of Independence, the Constitution and the Bill of Rights), archives and conservation also embody relations of power, for “it is only the rich and powerful that can afford to remake nature to defy time and decay” (Ogborn 2004:242). Archives are, from different perspectives, very rich sites for political ecology research.

#### *3.4.2 Overview of archives and historical press sources used*

As presented in the previous section, the documentary analysis of archival sources is the main methodology employed in the research articles. Although research stories for each of the articles are developed in more detail in **Chapter 4**, **table III** provides an overview of the archives cited in each of the research articles. National libraries are not included unless original primary materials have been consulted in it, excluding press collections. A total of 18 archives are cited in the seven research papers – this is not the total of archives visited or consulted, which would amount to at least thirty. Most of the archives cited (15) are located in Spain, and three are abroad (one in England, two in the United States). They constitute the main source of documentary evidence of all research articles, except number **V** and number **VI**.

| <b>LIST OF ARCHIVES CITED</b>  | <b>Article I<br/>(Barcelona)</b> | <b>Article II<br/>(Madrid)</b> | <b>Article III<br/>(Pyrenees)</b> | <b>Article IV<br/>(Autarkic<br/>fishing)</b> | <b>Article V<br/>(European<br/>Autarky)</b> | <b>Article VI<br/>(Self-<br/>sufficiency)</b> | <b>Article VII<br/>(Water<br/>pollution )</b> |
|--|----------------------------------|--------------------------------|-----------------------------------|--|---|---|---|
| <i>Arxiu General Aigiües de Barcelona</i>                                  |                                  |                                |                                   |  |   |   |   |
| <i>Arxiu Municipal Contemporani de<br/>l'Ajuntament de Barcelona (AMC)</i> |                                  |                                |                                   |  |   |   |   |
| <i>Archivo General Militar de Ávila</i>                                    |                                  |                                |                                   |  |   |   |   |
| <i>Archivo General Militar de Segovia</i>                                  |                                  |                                |                                   |  |   |   |   |
| <i>Archivo de la Fundación Pablo Iglesias,<br/>Madrid</i>                  |                                  |                                |                                   |  |   |   |   |
| <i>Archivo del Canal de Isabel II, Madrid</i>                              |                                  |                                |                                   |  |   |   |   |
| <i>Archivo Histórico del Partido Comunista<br/>de España, Madrid</i>       |                                  |                                |                                   |  |   |   |   |
| <i>Archivo Intermedio Militar Pirenaico<br/>(AIMP), Barcelona</i>          |                                  |                                |                                   |  |   |   |   |
| <i>Archivo General de la Administración,<br/>Alcalá de Henares</i>         |                                  |                                |                                   |  |   |   |   |
| <i>Archivo del Servicio Militar de<br/>Construcciones, Madrid</i>          |                                  |                                |                                   |  |   |   |   |
| <i>United Nations Archives, New York (US)</i>                              |                                  |                                |                                   |  |   |   |   |
| <i>The National Archives, Kew (UK)</i>                                     |                                  |                                |                                   |  |   |   |   |
| <i>Library of Congress, Washington DC (US)</i>                             |                                  |                                |                                   |  |   |   |   |
| <i>Archive of Instituto Nacional de Industria,<br/>Madrid</i>              |                                  |                                |                                   |  |   |   |   |
| <i>Navarra University General Archive</i>                                  |                                  |                                |                                   |  |   |   |   |
| <i>Pavelló de la República (UB, Barcelona)</i>                             |                                  |                                |                                   |  |   |   |   |
| <i>Arxiu de la Subdelegació del Govern a<br/>Barcelona</i>                 |                                  |                                |                                   |  |   |   |   |
| <i>Arxiu Central de l'Agència Catalana de<br/>l'Aigua, Barcelona</i>       |                                  |                                |                                   |  |   |   |   |

**Table III:** Overview of the archival sources cited in the research articles. Source: Own elaboration.

Historical press has been reviewed and cited in each of the research articles, but only in research papers number **V** and **VI** constitutes the main source. In the rest of the papers, historical press complements the use of archival sources. The current trend of press digitalisation and improved searches through optical character recognition (OCR) technology permits researchers to carry out systematic searches that were unconceivable only fifteen years ago (see **table IV** for a list of the digitised press databases used throughout the research articles). Certain newspaper collections such as those belonging to technical, professional or scientific groups (e.g. unions, engineers associations, military, scientists, etc.) provided very relevant insights for the research papers. Public administration official diaries and publications were used as ancillary sources. Additional non-digitised sources have been consulted at the Pavelló de la República (Universitat de Barcelona, Barcelona), Biblioteca de Catalunya (Barcelona) and Biblioteca Nacional Española (Madrid). Bibliographical references for press sources do not include the library where they were consulted.

| <b>Database</b>   | <b>Website</b>  |
|---|---|
| <i>Biblioteca Virtual de Prensa Histórica</i>             | <a href="http://prensahistorica.mcu.es/es/consulta/busqueda.cmd">http://prensahistorica.mcu.es/es/consulta/busqueda.cmd</a>       |
| <i>Hemeroteca Digital – Biblioteca Nacional de España</i> | <a href="http://www.bne.es/es/Catalogos/HemerotecaDigital/">http://www.bne.es/es/Catalogos/HemerotecaDigital/</a>                 |
| <i>Arxiu de Revistes Catalanes Antiques</i>               | <a href="http://www.bnc.cat/digital/arca/">http://www.bnc.cat/digital/arca/</a>   |
| <i>Boletín Oficial del Estado: Colección Histórica</i>    | <a href="http://www.boe.es/legislacion/gazeta.php">http://www.boe.es/legislacion/gazeta.php</a>                                   |
| <i>Diari Oficial de la Generalitat de Catalunya</i>       | <a href="http://dogc.genocat.cat/ca/pdogc_serveis/cerca-republica/">http://dogc.genocat.cat/ca/pdogc_serveis/cerca-republica/</a> |
| <i>La Vanguardia</i>                                      | <a href="http://www.lavanguardia.com/hemeroteca">http://www.lavanguardia.com/hemeroteca</a>                                       |
| <i>ABC</i>  | <a href="http://hemeroteca.abc.es/">http://hemeroteca.abc.es/</a>   |
| <i>Revista de Obras Públicas</i>                          | <a href="http://ropdigital.ciccp.es/">http://ropdigital.ciccp.es/</a>   |

**Table IV:** Digital press databases used throughout the thesis. Source: Own elaboration.

Along these lines, the digitisation of all Spanish official newsreels starting in 1943 (*Noticiarios y documentales cinematográficos*, 1943 – 1981), commonly known as No-Do,<sup>15</sup> made easier the use of this key source in research **articles IV and V**, mostly focused in the autarkic years. Until the beginning of public television broadcasts in Spain in 1956, No-Do newsreels, shown at cinemas, were the only source of video images in the country.

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<sup>15</sup> See <http://www.rtve.es/filmoteca/no-do/>.

## 4. Summary of the research articles

### 4.1 Research stories

This chapter summarises each of the research articles presented in the second part of the thesis. Besides adding details about sources and methods, my main objective is to make visible the research effort and the motivations behind each of the papers and to contextualise their contributions connecting it to the discussions presented in the previous chapters.

Historians' books and articles often remain silent about the vicissitudes faced by their authors in order to obtain the materials from which they build their narratives, but these difficulties may actually be very telling about the social and political subject the work deals with. The research articles presented in the second part of this thesis are no exception. They follow the academic guidelines of different journals, address specific debates and devote relatively little space to discuss methods or sources. The whole research story behind each of them becomes unreachable for the reader. Throughout the following sections of this chapter, I intend to partially remedy this by making accessible some of these stories, which did not reach the final and sterilised version of the articles offered in the second part of the thesis.

Stories about sources rarely adventure further than the footnotes of texts. In footnotes, historians offer the traceability of their work and exhibit the authority that sustains their narrative. When judging the originality and overall effort of a research, many historians will do so bestowing great importance to the variety of sources included and verified.<sup>16</sup> But even when discussed or debated, it doesn't happen often that historians open their toolbox and explain how they gained access to the sources they have used in their work, the path they took from one to the other, the comings and goings between archives or the intuitions that led to the documents that sustain the main narrative of a paper. Although we want to tell good stories (Cronon 2013), we keep to ourselves some of the best: the ones about fieldwork. We tell stories based on what we find in archives – and other places – but we hardly tell stories about how we managed to find them in the first place. To some extent, this may be related to the way that most historians do their research and publish their work: alone (McNeill 2003). Additionally, unlike a scientific experiment, the deductive process to locate a historical source – along with the importance that a certain archival *instinct* and pure luck may play in it – is not always easy

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<sup>16</sup> On the history of footnotes, see Grafton (1997) and Zerby (2002).

to rationalise as a methodological insight and thus may be silenced and left aside for fear of being regarded as “unprofessional”.

At any rate, in the following sections I summarise research papers along with motivations, obstacles encountered in the investigation and solutions adopted to face them. In each summary, I have included a text box entitled “Postcards from the field”, which narrates a story that I regard as particularly significant or as a stimulating reflection about historical research. Additionally, I trace some of the connections between papers, so the following sections have been written to be read one after the other. On the other hand, each of them is also conceived to enrich the reading of the respective research papers included in the second part of the thesis, so the reader may also opt for reading each of these papers after each of the summaries.

## 4.2 Summary of research articles

### *4.2.1 Summary of research article I*

#### **Servicing Customers in Revolutionary Times: The Experience of the Collectivized Barcelona Water Company during the Spanish Civil War (1936-1939)**

Wars profoundly shake social structures. After the failure of the military putsch in Barcelona in July 1936, revolutionary forces seized power in the city. Throughout significant parts of the Republican territory, the beginning of the Spanish Civil War was also a revolutionary outbreak that turned social order upside down and collectivised industries, agriculture and services. In this context, the private water company of Barcelona – Sociedad General de Aguas de Barcelona (SGAB) – was taken over by its workers, who carried out several reforms aimed at promoting both efficiency in water supply and social justice criteria.

In this research article I excavate the story of this quite unique example of a collective property regime for water supply with the aim of contributing to current debates about urban property regimes. By exploring how anarcho-syndicalists managed a company formed by more than 800 workers, I aim to challenge the axioms that associate ideas of rationality and efficiency to private management and leave equity to the sphere of public action. This research follows the work of Eduard Masjuan and the interest of Spanish environmental history and political ecology in property regimes (Masjuan et al. 2008; Masjuan 2000; Martínez Alier 1993). A crucial motivation was also my interest in debates about municipalisation of water supply. These debates have received great attention in the fields of geography and

#### ***Postcards from the field (I)*** “The Red Period”, or thinking with the Francoist mind

Sociedad General de Aguas de Barcelona (SGAB) is currently part of the transnational conglomerate AGBAR (“Aigües de Barcelona”), with more than 120 subsidiary companies in Europe, Africa, Latin America and Asia. SGAB’s general archive is formed by 15,000 boxes, and at the time I was carrying out my research its management was subcontracted, with no specific person or space designated for archival inquires. Collections lacked a table of contents and database searches had to be conducted under supervision from a company’s worker.

In this context, the first attempts to find archival materials dealing directly with the war were unsuccessful. None of the usual keywords led to the desired boxes. Moreover, the company denied access to the minutes of the management meetings. Therefore I decided to carry out a systematic review of the company’s correspondence between 1936 and 1940, which included hundreds of complaint letters by ordinary citizens (12 boxes, some 8000 documents). This unveiled very rich materials about the grassroots impact of the war years in the city. Eventually, the review of the 1940s letters brought to my mind the Francoist expression used to refer to the war years: “the red period” – a catch-all term for the varied forces that supported the Second Republic during the conflict.

In the last stages of the research, an archival inquiry using this expression (“red period”) led immediately to the location of the key boxes I had searched for in vain at the beginning.

political ecology, hence the choice of the journal *Antipode* for publishing this research.

By exploring the history of water management during the three intense years of the war in Barcelona – the only period of the last 150 years where urban water supply has not been in the hands of a private company – I also aimed at gaining new insights about the urban environmental history of the city. Examining a moment of stress (war) exposes the weaknesses of the supply system, which lacked reservoirs and whose waters had been repeatedly accused of bad quality. This stands in high contrast with the case of Madrid (research **article II**). Both cities, however, as symbols of urban life and pennants of the Second Republic, were fiercely bombed by the Francoist forces. In the case of Barcelona, a rear-guard city, the protracted attacks of Mussolini’s aviation, deployed in Mallorca, exposed the weaknesses of the shaky urban infrastructure. Although the collectivised water company continued distributing water until the end of the war, it also faced economic and political difficulties, and by the time Francoist’ soldiers occupied Barcelona the sanitary situation of the city had become precarious.

The documentary analysis of archival sources was the main method I applied in this paper (see “Postcards from the field (I)”). The rich archive of the water company, combined with Barcelona administrative archive and certain press sources, provided the main elements of the narrative. Despite the fact that most of the archival collections of the anarchist union CNT ended up at the International Institute of Social History (Amsterdam), no information about the water company was located there. The few published accounts about the company’s performance (reports from the anarchist press, later published as a book, on the one hand; and a volume published by the company in the 1960s, on the other) proved misleading. The company publication underrated the war period and portrayed the workers’ management as naïve and contradictory. In fact, the review of archival sources determined how this account made very partial use of certain reports and documents to build its story. Not so differently, some anarchist accounts celebrated an epic narrative of the collectivisation efforts that left aside some of the prosaic but serious problems that workers confronted – for instance, the fact that most of the city inhabitants just stopped paying their bills as soon as the war started. In order to better understand certain of these issues (e.g. typologies of water contracts), I interviewed two retired workers of the company.

Some of the legacies of the collectivisation of Barcelona’s water company remain in place today. Grateful to the Francoist army for defeating the Republicans and returning collectivised companies to their former owners, in 1939 the manager of SGAB donated a significant sum of



money and a piece of land to Franco in the main avenue entering the city (the Diagonal). Using these funds, a residence for military officers was built as a proof of gratitude and homage to the military occupiers of the city. Today, it remains in the same place and continues to function as a residence for military families. This story had to be accommodated in a few lines of the research paper, but I have explained it in detail elsewhere (Gorostiza 2013a; Gorostiza 2013b). In the context of debates about municipalisation and privatisation of water supply, I also published some articles disseminating this research (Gorostiza & March 2015; Gorostiza 2014).

#### 4.2.2 Summary of research article II

### “Urban Ecology Under Fire”: Water Supply in Madrid During the Spanish Civil War (1936–1939)

Some of the stories about water supply in Barcelona during the war pointed intensely towards the city of Madrid, under siege by the Francoist troops since October 1936. The water trucks that the Barcelona city council sent to the capital as a gift; the firemen relocated to Madrid to help out in the urban fires caused by the incendiary bombings, or the workers that volunteered to fight in the battlefronts around the capital are some of them. Madrid was – unlike Barcelona – a fierce battlefront since the early days of the war, and maybe the most symbolic of the whole conflict.

The second research paper moves to investigate the environmental history of the Spanish Civil War in the capital of the Republic. The analytic focus moves slightly from property regimes to devote more attention to militarised landscapes. The water supply company of the capital –Canal de Isabel II, known in the 1930s as Canales del Lozoya – was owned by the state, and so remained; workers already had representatives in the direction and they earned more after the beginning of the war.

Examining the city’s metabolism through the approach of urban political ecology (Kaika 2005; Swyngedouw 2004) I argue that water was key in the Battle of Madrid, both in the first weeks of the war – when Republican troops successfully protected the reservoirs north of the city – and later in November 1936, when combat reached the city streets in the southwest and defenders used the urban infrastructure (sanitation and water supply systems) in their favour. The knowledge of workers helped sustain the city’s urban

#### *Postcards from the field (II)*

##### A letter from Moscow

Early in the research about the urban environmental history of Madrid during the war, one name that kept appearing in the secondary sources about the city defense caught my attention. Federico Molero (1908-1969) was one of the Canales del Lozoya engineers and the main organiser of the underground battalion, which used sewers and water distribution infrastructure to strike back against the Francoist besiegers. However, none of the references to him published in different books was backed by archival sources.

After the archive of Canal de Isabel II confirmed that they kept no records of the war period, I frantically searched for alternatives. In parallel to other archival inquiries, I decided to carry out a biographic study about Federico Molero in order to unearth primary sources that could be useful for my research.

Unexpectedly, this took me to the door of José Manuel Naredo – one of the founding fathers of environmental history in Spain (Martínez Alier 2008). Federico Molero happened to be his father-in-law. Naredo kindly shared his memories about him and granted access to some of Molero’s personal documents.

Exiled to the Soviet Union in 1939, Molero emerged as a fascinating character, not only because of his key role in the defense of Madrid, but also for his pioneering research in solar energy (Ruiz Hernández 2010). Among the documents conserved by Naredo, there was a long letter signed in Moscow, where Molero detailed his role in the defense of Madrid. This became a key source for the narrative presented in the research paper.

metabolism and was key to push back the invaders. Throughout the paper I also devote attention to the besieging forces and their vision of the city. For many in the Francoist factions, besieged Madrid was “Madridgrad”, a “red” city that represented the decadent features associated with urban life.

The successful resistance posed by Madrid and the resilience of its infrastructure indicates the robustness of its supply system. The reservoirs, the different channels supplying the city, the quality of the waters, are all a result of the consistent efforts and investments carried out by the state for more than half a century before the war – ensuring the water supply of the country’s capital. Madrid’s water infrastructure overcame the challenge of the first systematic bombings of civilian cities scarred, but mostly safe. Despite the difficulties, water supply did not stop, and typhoid fever rates by the end of the war remained among the lowest of the country. The contrast with Barcelona –subject to lesser pressure– tells about their different political and socioenvironmental history.

The article – published again in the geography journal *Antipode* – contributes to the literature at the crossroads between environmental history of war and urban political ecology. Critical geographical literature about infrastructures and hazard geography is also crucial for the article’s framework. My motivation in relation to this research emerged partly from following the partial process of privatisation of Canal de Isabel II, approved in 2012 in the midst of protests, but still highly controversial today.<sup>17</sup> By exploring the performance of the company during the Spanish Civil War, one of my aims was to uncover the historical significance that public management had had under an extreme episode of stress.

Again, the documentary analysis of archival sources was the main method I used in this research. As in Barcelona, however, I found a major obstacle. The archive of Canal de Isabel II replied to my inquiries explaining that they did not hold a single archival document from the period of study. The only available materials were the monthly bulletins of the company and several reports published between 1935 and 1938. Despite a detailed review of the historical press, these materials were not enough to build a critical narrative of the war years. However, one of these reports, authored by the governmental delegate in Canales del Lozoya, had been censored by the Republican military (Torres Campañá 1937). Therefore, the publication lacked its crucial chapter – the one dealing with the defence of the dams and the city reservoirs – but

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<sup>17</sup> See for instance “El Canal de Isabel II, la ciénaga que ahoga al PP de Aguirre”, *El Periódico*, 19 April 2017, <http://www.elperiodico.com/es/politica/20170419/canal-isabel-ii-cienaga-que-ahoga-pp-esperanza-aguirre-historia-corrupcion-5982033>

also indicated that five typewritten copies of it had been produced and distributed. After ample efforts I located one of these copies among the collections of the delegate's widow, donated to the archive of Fundación Pablo Iglesias. Together with the documents about Canales del Lozoya engineer Federico Molero, provided by José Manuel Naredo (see "Postcards from the field (II)"), as well as additional materials from the military archives in Ávila and Segovia, it was possible to craft a narrative that challenged the public accounts of the period and exposed the importance that water supply, infrastructure and workers had in the besieged city.

Last, but not least, field reconnaissance both in Madrid urban environments where the combats took place and in the battlefronts near the reservoirs of El Villar and Puentes Viejas, north of Madrid, proved greatly rewarding. Several field defences (bunkers) and remains of mortar shells were located. Personal contact with archaeologists working on the battlefronts near the reservoirs provided key insights that helped to interpret the archival materials and breathed new life into the old documents. Besides research paper II, the investigation about Madrid resulted in other academic and non-academic publications (Gorostiza & March 2015; Gorostiza & Saurí 2013) and I provided information for a piece about Federico Molero published in the national Spanish newspaper *El País*.<sup>18</sup>

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<sup>18</sup> "El ingeniero que domó el sol", *El País*, 30 August 2013.  
[https://elpais.com/cultura/2013/08/30/actualidad/1377879972\\_969661.html](https://elpais.com/cultura/2013/08/30/actualidad/1377879972_969661.html)

#### 4.2.3 Summary of research article III

### “Africa Begins at the Pyrenees”: Fortifying the Nation in Fascist Spain (1939-1959)”

In research article III I keep the focus on landscape militarisation but turn the attention from the Republican side to the Francoist army, and from cities to mountains. As soon as they started occupying the border with France in 1937, Francoist military units devoted great attention to the control of the Pyrenees. The liberation of France during 1944 rang the alarms of the Francoist regime and gave way to an ambitious project of border fortification, which only intensified as the collapse of the Axis forces approached. These efforts took several units of military engineers to the region and have left hundreds of fortifications scattered throughout peaks, hills and slopes.

In research article III I examine the fortification of the Pyrenees as a late example of the static fortification systems much in vogue throughout the Interwar Period. I provide a significant case study to the literature about environmental history of war. I chose *Environmental History* as a publishing outlet because most of the debate about environmental histories of war has taken place in its pages. The construction of the so-called “Pyrenees line” inextricably combined discourses on the spiritual and natural force of the Spanish mountains with the material work of the prisoners, draft animals and conscript soldiers that built the fortifications. Social control and repression, most of all, were central in the militarisation of the border region. Between 1939 and 1955, travelling through the border region – which extended 80 km south of the border – required safe-conducts and was subject to tight control.

#### *Postcards from the field (III)*

##### Searching for oral sources

The closing of the main archival collection about the militarisation of the Pyrenees forced a major turnaround in the research. Aiming at finding oral sources, I used the collections of the Military Library in Madrid to compile a list of military engineers deployed near the border between 1945 and 1953. These only included lieutenants or higher ranks, so I reviewed other sources such as internal publications of the military regiments to add conscripted soldiers to the list.

Following this, I searched for their addresses using public telephone databases and sent them a letter, including a brief survey. Out of the 215 names identified I sent 39 letters, which I followed up by phone. This led to 8 personal interviews (3 retired officers and 5 former conscript soldiers), mostly in Barcelona and Girona but also in Madrid and Palma.

This slow research had surprising results. Besides exploring oral sources, I consulted the military records of the senior officers of military units deployed in the border at the Segovia military archive. This led to Juan Petirena Aurrecochea (1885-1956), who acted as the head of military engineers for the fortification of the Pyrenees. Contact with his family in Madrid, as well as his military record, revealed that between 1936 and 1939 he had been in charge of the underground Francoist units in Madrid, and thus the antagonist of Federico Molero (see research article II). But perhaps more importantly, it also exposed that Petirena was the organiser and supervisor of the vast system of forced labour put in place throughout Spain after 1940. This gave a new perspective to the project of fortifying the Spanish border.

This research tells the story of the militarisation of the border as an attempt to fortify nation through nature. It examines the preparations to confront a large-scale invasion; an invasion that never took place. But, perhaps more importantly, it also addresses the Francoist discourses about the role of the Pyrenees both as the nation's "spiritual wall" to the decadence of European liberal democracies and its representation as a "natural border" – a notion that is discussed and problematised in this article. The Francoist fortification of the border region relied on "nature" as an obstacle but also aimed to improve it through labour. Concrete, steel and animal and human work were to be deployed to build fortifications where geographical obstacles were not deemed powerful enough. Therefore, this research contributes to the environmental history of war literature while focusing on the materialisation of the fascist national project in the landscape. In other words, it engages a crucial dimension of the 'autarchic' project: militarisation and isolation, inscribed in the borders of the nation. The growth of forests, regularly recorded in the maintenance military reports, slowly devoured fortifications and the lands over its firing range during the 1950s and 1960s. The ruins of bunkers never used are material legacies that testify to the origins and building years of the Francoist regime.

Documenting these research interests and topics with archival sources has required wide efforts. The initial access to the full military collections about the fortification of the Pyrenees was thwarted by the application of a political decision taken by the Spanish socialist government, which starting in 2012 (re)classified as "secret" a wide collection of archival sources about the international relations of the Spanish state. Throughout Spain, this political decision of the same Socialist government that had approved the Spanish Law of Historical Memory (2007/57) threw overboard already funded projects and ongoing PhDs and remains an impenetrable obstacle for certain investigations (Pereira & Sanz Díaz 2015). I have participated in different demands to open the access to these collections.<sup>19</sup>

This political barrier became a stimulation to find alternative approaches to the research, based on oral history methods (see "Postcards from the field (III)"). Moreover, international archives provided rich information about the militarisation efforts of the Francoist regime and its international impact at the time (such as the Subcommittee established by the United Nations

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<sup>19</sup> See for instance "Exteriores blindará todos sus documentos", *El País*, June 3 2012, [https://politica.elpais.com/politica/2012/06/03/actualidad/1338750887\\_077908.html](https://politica.elpais.com/politica/2012/06/03/actualidad/1338750887_077908.html). More information about the consequences that this had for undergoing PhD research or already funded research projects, in Pereira & Sanz Díaz 2015. For recent update on the situation of this archival sources, see "Cientos de historiadores urgen a desbloquear la reforma Ley de Secretos Oficiales", *El País*, May 24 2017, [https://politica.elpais.com/politica/2017/05/24/actualidad/1495624786\\_977923.html](https://politica.elpais.com/politica/2017/05/24/actualidad/1495624786_977923.html)

to deal with the “Spanish Question” in 1946, whose documents are kept at the UN archives in New York). Other valuable reports, such as the English and US vision of the importance of the Pyrenees, were located at The National Archives (Kew, UK) and the Library of Congress (Washington DC, US). The anarchist and communist guerrillas also witnessed the development of the fortifications and left reports about them, some of which I found at the Historical Archive of the Spanish Communist Party (Madrid). Traces of the Francoist field fortifications also appeared through the files of the Catalan Government Archaeological Service, which recorded the characteristics of several bunkers demolished in order to make space for building the high velocity railway linking Barcelona and Paris.

Finally, I used Geographical Information Systems (GIS) to process the spatial information about the distribution and location of fortifications throughout the Pyrenees mountain range (see **Annex I**). I visited several regions and carried out field reconnaissance of the remaining fortifications (Pallars Sobirà, Cerdanya and Figueres, among others). The Spanish army never expropriated any lands to build fortifications, so these visits helped to confirm that many of these spaces had been reconditioned by locals as shelters for animals and other uses.

#### 4.2.4 Summary of research article IV

### **‘The unclaimed latifundium’: The configuration of the Spanish fishing sector under Francoist autarky, 1939-1951**

While research article III is about fortifying the nation, article IV deals with feeding it. However, instead of focusing in the agrarian sector, as previously done by a significant part of the historiography, I focus on another source of nourishment for the Spanish population: fish. By 1953, with the Cold War in full swing, one article published in the Spanish military main magazine, *Ejército*, pondered the importance of fishing for the army’s food supply in case of war in the following terms: “Facing a possible world conflict and the probability of having the Russian army at the Pyrenees, Spain can only regard [fishing] as a limited source to meet the country’s supply” (Ferreiro Rodríguez 1953:38). Immediately after the end of the Spanish Civil War, the Francoist state had set in motion great efforts to expand its marine and fishing fleet. In research article IV I argue that the political-ecological legacies of these reforms are still visible today.

Using the case of the fishing sector, I apply an approach to the environmental history of the Francoist regime that puts the dual concept of autarky/autarchy (Saraiva & Wise 2010) at its core. On the one hand I examine the impact of public policies on the marine fishing fleet, and on the other I scrutinise how repression transformed fishing social institutions. As with the previous research article, paper IV follows the work of military engineers – in this case, the first president of the National Institute of Industry (Instituto Nacional de Industria, INI), Juan Antonio Suanzes.

#### *Postcards from the field (IV)* Words for victory

In 1995, the National Institute of Industry disappeared and gave way to the Sociedad Estatal de Participaciones Industriales (SEPI). Today, its archive in Madrid holds the collections of the dozens of companies that were linked to INI, but also the personal collections that Juan Antonio Suanzes, its first president, originally took with him after he was dismissed in 1963.

Suanzes personal collection includes a valuable source to interpret the autarkic project as it stood in June 1942. Back from a visit to Germany, Suanzes gave three speeches to a small circle of high-ranking military officials. In these exclusive sessions he reviewed one by one the economic sectors where INI aimed at intervening and gave details about his views on autarky. Its private character and the care taken by Suanzes to prepare the sessions – with handwritten annotations in the margins of the typewritten text – underline the value of the document.

The transcript of these sessions also illuminates, as do many other documents in Suanzes collections, the intimate links between the Spanish autarkic project and those of Italy and Germany. Writing a few months before the beginning of the Battle of Stalingrad, Suanzes acknowledged that a victory of the Axis would be a victory of “our ideals” and detailed his conversations with his German counterparts, comparing the autarkic plans of both countries.

*(see Texto taquigráfico de la conferencia pronunciada por el presidente del INI Excmo. Sr. Don Juan Antonio Suanzes Fernández en la Escuela Superior del Ejército sobre el tema Autarquía, June 1942, Suanzes Collections, Archive of Instituto Nacional de Industria.)*



In research article IV I discuss the notions of autarky in Spain in the 1940s (see “Postcards from the field (IV)”) and also in relation to the economic nationalism of the Interwar Period. By exploring the autarkic/autarchic reforms of the fishing sector I aim to show that some of the present characteristics of the Spanish fishing fleet – such as its fishing overcapacity or the low level of union activities in small-scale fisheries – have their roots in 1940s and 1950s reforms. Throughout the research, the militaristic dimension of the autarkic project – ‘autarky as a weapon’ – clearly emerges.

Unlike the border marked by Pyrenees mountain range, the seas had no clear limits. The idea of ‘national’ resources could not be clearly applied to fishing at a time when Exclusive Economic Zones had not yet been established. Increasing captures was a matter of developing a bigger and more powerful fleet. As reflected in the title of the paper, the open seas remained, in the words of a Francoist official, an ‘unclaimed latifundium’. In this expansion, the Spanish colonial territories in Guinea and North Africa hold a great value, as reflected by the minutes of the Ministry of Industry fishing committees. Ultimately, by showing the unrestricted expansion of the fishing fleet in the name of autarky, research article IV problematises the ‘national’ scale of self-sufficiency. The following two research papers, V and VI, continue this line of inquiry. These discussions on scale, together with the explicit interest of the *Journal of Historical Geography* in environmental history, motivated the choice of the journal.

The documentary analysis of archival and press sources was again the main method I used in this research. *Industrias Pesqueras*, the main press magazine of the fishing sector, was consulted at Pavelló de la República and Biblioteca Nacional de España. Besides INI’s archival sources, I also gained access to the personal collections of Luis Carrero Blanco (1904-1973), kept at the Archive of the University of Navarra. Carrero Blanco, member of the Navy, was a close collaborator of Franco and for a short time before his assassination in 1973 he was the Spanish Prime Minister. His writings and reports to Franco during the 1940s illustrate the importance bestowed to sea geopolitics (Reguera 1991). His personal collections were for a long time kept – and controlled – by his descendants, but in 2015 the Archive of the University of Navarra made a digital copy of the documents.

#### 4.2.5 Summary of research article V

### **“European Autarky”: Fascist discourses of continental self-sufficiency in Francoist Spain (1940-1943)**

In research article V, as in research article IV, I aim at exploring the expansive nature of autarkic ‘national’ discourses and projects. Research article V is conceived as an environmental history gaze at the Nazi-fascist “New Europe” project, which has recently attracted considerable attention in the literature about cultural history and history of science (Clara & Ninhos 2016; Martin 2016). This article examines a collection of propaganda disseminated in the Spanish press during the early 1940s, which announces a discursive rescaling of the autarkic project from the national to the continental dimension.

The central feature of the collection of advertisements discussed is its Europeanist discourse, in which (continental) self-sufficiency occupies a central space. I assert that the German Chamber of Commerce and the Spanish single-party – Falange – are its main promoters. The advertisements celebrate German industrial products together with Spanish raw materials as part and parcel of “New Europe” self-sufficient economy.

This research finds inspiration in literature on the history of science and technology that has underlined the circulation of scientists and technicians within fascist regimes in the 1940s (Brydan 2016; Dafinger 2016). Similarly, in this article I aim at showing the circulation of ideas about national environments and “nature” throughout Fascist Europe: soil, self-sufficiency and spring, for instance. The method I apply is a documentary analysis of the discourse of a propaganda collection,

#### *Postcards from the field (V)*

If it’s not online, does it exist?

As recently as the turn of the century, to review hundreds of press publications from the 1940s and identify a collection of advertisements would have required a colossal effort. Today, digitisation and optical character recognition (OCR) permit most of this work to be done online. Digging details out of old issues of (certain) press has never been faster.

Once I determined an appropriate set of keywords, digitised databases started producing results. As I categorised advertisements and thus refined and adjusted keywords, new searches rendered more accurate results. However, the accessibility and facility of historical press databases may be deceiving. In front of the computer, conceiving more refined search words, it is easy to forget that what gets digitised and what does not is also political. Who is to decide and upon which criteria? In Spain, *ABC* and *La Vanguardia* – both newspapers still active – digitised their collections years ago and are widely used by researchers and amateur historians. But this doesn’t mean that they were the most relevant press sources in the past.

The easy, immediate access to some sources obscures other. Fundamental newspapers like *Solidaridad Nacional* or *El Diario de Barcelona* remain in the libraries – with no current private owner, no one seems interested in making these sources available online. Only a few issues of *Solidaridad Obrera*, the main anarchist newspaper of the first third of the 20<sup>th</sup> century, have been digitised by the Spanish National Library. A local research center has completed the digitisation, but the poor scanning quality makes OCR – and therefore searches – highly imprecise.

formed by 67 advertisements published in 15 different newspapers and magazines, with a total 140 impacts (see **Annex II**).

To identify and put together this collection, I used quantitative methods: databases of historical press (see “Postcards from the field (V)”). However, I first identified these advertisements flipping through the pages of a 1940s magazine that to this date remains not available online. Several of the back covers of *Ion*, the Spanish magazine of applied chemistry, displayed in 1943 the advertisements that celebrated the importance of Spanish primary products (oranges, cork, olives, etc.). What drew my attention was its appealing design, together with the continental use of the notion of autarky, which at first sight seemed contradictory with the Francoist discourse about national independence I was familiar with. However, had it not been for the present day uses of the notion of autarky and self-sufficiency within neofascist movements, which are discussed in the following research paper, I may not have returned to the library neither resorted to the online search engines to track and document this propaganda collection. Connecting both was a key motivation of research papers V and VI.

I originally conceived research article V as a paper based only in images, for the section “gallery essays” of the journal *Environmental History*. However, as more and more images emerged, the significance of the notion of scale and space in the “New Europe” discourse became evident. This eventually led to the choice of *Journal of Historical Geography* as a possible publication outlet.

#### 4.2.6 Summary of research article VI

### **Problematising self-sufficiency: a historical exploration of the ‘autarky’ concept**

The motivation and writing process of research article V and VI were highly interwoven. The point of departure of research article VI is the ideological legacy of the notions of “autarky” today. Unlike the rest of the research articles, article VI did not involve archival research. It builds on the research and insights of articles IV and V. It is a reflection about the use of the notion of self-sufficiency, the way it was mobilised by fascist movements in the 1930s, and the ambivalent manner in which is often used in environmentalist literature since the 1970s. It aims at reflecting upon the distinction between fascist autarky and democratic/emancipatory self-sufficiency projects, not only historically but at present as well. This inquisitiveness first emerged from discussing my historical research with colleagues participating in the degrowth movement, which advocates for the downscaling of production and consumption (D’Alisa et al. 2014). Moreover, due to my interest in the uses of history, I found it challenging to examine how neofascist factions mobilised the notion of autarky today (see “Postcards from the field (VI)”).

During the 1960s and 1970s, self-sufficiency values were vindicated by the emerging environmental movements as part of their ethos and local practice, in line with the rejection of urban modernity and the return to rural life. To this day, the use of the notion of self-sufficiency in environmentalist literature remains ambivalent and is often understood as a synonym of self-reliance or

#### *Postcards from the field (VI)*

##### Uses of history

Around September 2014, a neofascist group occupied an abandoned building in Madrid. Soon they started distributing food and offering social assistance only to Spaniards. They adopted the name “Hogar Social Ramiro Ledesma”, one of the fascist intellectuals killed in the Spanish Civil War.

Hogar Social Ramiro Ledesma followed the example of the neofascist movement CasaPound in Italy. One of the actions of CasaPound powerfully captured my attention. In September 2012, a hundred of their members had protested in the headquarters of the European Commission in Rome against the withdrawal of national subsidies to coal mining. They held a banner which read “Defend Italian Coal – European Autarky”.

The use of the word “autarky” was an unequivocal reference to the 1930s fascist socioeconomic projects. Therefore its use in the present context constituted an undeniable attempt to mobilise history. CasaPound also talked about environmental protection (Castelli Gattinara et al. 2013) and new right intellectuals close to such initiatives used the concept of degrowth (de Benoist 2009). As I started to focus on the environmental history of autarkic practices and regimes, this reminded me something very simple: that the mobilisation of history was not necessarily a progressive endeavour.

Understanding history is key to unpack today’s politics, and the present use of the notion of autarky by neofascist factions was certainly a motivation – in similar terms as put by Oreskes (2013) – for the research that later took form in research articles IV, V and VI.

autonomy. As for degrowth, some authors establish connections between the notion of self-sufficiency and others are more reluctant to do so.

Throughout research article VI I argue that such ambivalences potentially enable an easier capture of these concepts by neo-fascist and conservative factions applying “green” and “local” practices while at the same time building restrictive ideas of community. I underline that uses of self-sufficiency require a critical examination and that scale and the way ‘community’ is defined are central features of the fascist visions of self-sufficiency.

In the first part of research article VI I discuss how the concept of autarky “emerged from dictionaries” in the 1930s (Heilperin 1947:155, cited in Nolan 2013). Later in the text I also examine the evolution in the use of the notion of “self-sufficiency”, particularly in the 1960s and 1970s. In outlining the use of both “autarky” and “self-sufficiency” during the 20<sup>th</sup> century, I draw upon the tools offered by quantitative analysis of texts. The massive digitization of written sources has opened the door to the quantitative exploration of cultural trends at scales previously unconceivable. Through Google Books Ngram viewer<sup>20</sup> it is possible to analyse a corpus of millions of digitalised books (about 4% of all books ever printed) (Michel et al. 2011). I use this tool to reinforce the validity of historical statements that pointed to the emergence of the concept of autarky in the 1930s and other that associated the emergence of the notion of self-sufficiency to the 1960s-1970s.

Finally, drawing on ecofeminist literature, I point out that masculinist values are intimately connected with the notion of self-sufficiency and with fascist ideology, and I suggest that notions of autonomy or eco-sufficiency may be more in line with the degrowth vocabulary (D’Alisa et al. 2014). Along these lines, this article has been submitted as part of a book proposal “The end of growth as we know it: Contributions to the political economy of degrowth” (Duke University Press). To comply with the guidelines of this publication, this article is significantly shorter than the rest of the papers.

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<sup>20</sup> See <https://books.google.com/ngrams>

#### 4.2.7 Summary of research article VII

### **Dangerous assemblages: Salts, trihalomethanes and endocrine disruptors in the water palimpsest of the Llobregat River, Catalonia**

The last research article of the thesis comes full circle by combining environmental history, political ecology and history of science to examine the water quality of Llobregat River (Catalonia) in the 20<sup>th</sup> century. Following the tradition of Spanish environmental history and political ecology about environmental conflicts, I focus on the struggle against the socioenvironmental impacts of potash mining, which started in the basin in the 1920s and continues today at full throttle. The legacies of the Spanish Civil War and the Francoist autarky are central in my interpretation of the present-day conflict, regarded as one of the most pressing environmental problems of Catalonia.

In 2014, the European Commission begun proceedings against the Catalan and Spanish state for infringing EU waste directives and endangering the environment and human health by permitting mining activities in the Bages region. The object of the European Commission inquiries were the impacts of potash mines of Súria, denounced by local grassroots movements for salinising the basin waters and particularly those of Llobregat River. In research article VII I show that a detailed excavation of the war and autarkic periods provides key insights for today's controversies, particularly about the notion of the naturalisation of pollution (see "Postcards from the field (VII)"). I used this case study to justify the importance of historical research in socioenvironmental conflicts in a policy brief which was part of the obligations of the Marie Curie-ITN European project ENTITLE ("Natural or

#### ***Postcards from the field (VII)*** Challenging the naturalisation of pollution with archival records

In the river Llobregat, the Spanish Civil War set in motion a non-replicable mass-scale experiment. The war years are the only period of the last century when the potash mines have not been active. How did this affect water quality and ecosystems? And how can we know it?

Despite the bombings of Barcelona, collectivised water company workers (see research article I) continued monitoring water quality, therefore registering a dramatic decline in salinity after potash mines stopped production. This challenged the mining companies' arguments, which attributed salinisation to the natural geology of the region.

The controversy about the origins of the waters' salinisation, however, continues today. The saline geology of the region is used by companies and governments to argue there is uncertainty about its causes. Modern isotopic techniques allowed elucidating the source of salinisation ("natural", or related to mine tailings or fertilizers), but 1930s laboratory workers had already distinguished it. Where are these archival records showing the sharp decline in salinisation during the war?

The copy of these materials conserved by the city municipal laboratory disappeared when this institution closed in 1992. The laboratory of the private water company, however, conserved its own copies. Interestingly, research showed the acute internal conflicts of this actor, particularly between the company managers and its laboratory. This also involved archival records: for years, the laboratory kept its own archive. Taking a water company as a single "socioeconomic actor" risks simplifying interpretations.

human-made? The causes of water salinization in Llobregat River, Catalonia. Policy implications of historical research on the environmental liabilities of potash mining”, Gorostiza 2016b).

Research article VII tops off a wider effort I carried out during my PhD thesis to document the history of the grassroots movement that denounced the impacts of potash mines in water quality and health since the 1930s. The parallelisms between the discourses of the 1930s movement and today struck me from the moment I learned about the history of this conflict, as did the similarities of the arguments offered by mining companies to downplay the importance of pollution. However, there was no awareness of the historical dimensions of this struggle among today’s activists. The Francoist dictatorship severed the historical memory of this struggle. My concern about it led to my collaboration in writing a short book in Catalan, *Rius de Sal* (“Rivers of Salt”), co-authored with Jordi-Honey Rosés and Roger Lloret, which aimed at narrating the history of the conflict in the 1930s and the trajectory of its main protagonists (Gorostiza et al. 2015). Later we presented and disseminated the book in Barcelona, Manresa and other towns of central Catalonia (Gorostiza 2016a). The collaboration with *Projecte Rius*, an association that coordinates volunteers to maintain a parallel system of water quality monitoring throughout the territory, was crucial.

The period of the Spanish Civil War is essential in this research because it constitutes the only years during the last century where potash mines halted their activity. Following the research opportunities outlined by literature about the environmental history of war, this constitutes a window of opportunity to explore a socioecological disruption of the river system; needless to say, asking the mines to stop their activity is an experiment impossible to envision today (see “Postcards from the field (VII)”). The decrease in salinity registered during the war didn’t last much. The Francoist victory turned round this situation in a matter of years. Under the autarkic model supporting national production, the activity of the mines returned to their previous levels within a short period of time and later expanded. Legal mechanisms to control salinisation were lifted. These policies towards national self-sufficiency were combined with repression and tight social control in the mining regions (‘autarchy’), which had been active part of the 1936 social revolution and also of previous upheavals. Many of the individuals involved in the protests against the mines took the path of exile. The references to the salinisation of the Llobregat River in the press vanish from the newspapers. The secret reports received by the Governor of Barcelona, however, located at the Archive of the Spanish Government delegation in the city, prove that the unease about the city waters did not remit. The dual notion of autarky/autarchy,

as used in research article IV, proves again suitable. And potash mines were, in the 1940s, part of the Spanish “mining products” celebrated by the “European autarky” propaganda campaign presented in research article V.

The documentary analysis of archival and press sources was the main method I used in this research, which also benefited from in-depth interviews with a former worker of the water company laboratory. Last, but not least, the overall investigation included quantitative analysis, since it contributed to the reconstruction of the statistical data series of water quality in the Llobregat River during the 20<sup>th</sup> century.

Research article VII was published in *Geoforum*, a geography journal that has hosted debates about the connections of environmental history and political ecology. Along these lines, in this academic paper I aimed at showing the contribution of historical research to political ecology approaches. To do so, I propose the concept of “water palimpsest” in order to illustrate the complex histories of chemical and metabolic alterations embodied in water flows, potentially disruptive for humans and other living beings. Drawing from archival and oral sources, I underline the value of the period of the war and the autarky for a better understanding of today’s socioenvironmental controversies and challenges.



## **5. Concluding discussion: Opening up Spanish environmental history**

### 5.1 Overview of the thesis contribution

This thesis deals with the Spanish Civil War and the post-war state-building efforts of the Francoist regime from an environmental history perspective, highly informed by political ecology, geography and history of science. The collection of research articles presented in this PhD thesis is intended as an integral contribution pushing forward environmental history research in three main interrelated subfields developed during the last two decades: urban environmental history, environmental history of war and environmental history of fascist regimes and practices. By examining the Spanish Civil War and the first period of the Francoist dictatorship, this collection of papers seeks to open up Spanish environmental history to new topics and approaches fruitfully explored in the international literature. It aims at resolving the tension between the public interest and the massive development of the historiography about the war and the dictatorship, on the one hand, and the lack of environmental history research about both, on the other.

War and militarisation can be followed as a guiding thread between the research articles of the PhD thesis. Not war understood simply as an armed conflict and its impact on the environment, but through an approach that encompasses the socioenvironmental and political transformations it spurred in landscapes, property regimes and conceptions about nature. In their struggle during the Spanish Civil War, both contenders mobilised nature and impacted and disrupted socioecological systems such as rivers or cities. The collectivisation of agriculture, industries and services is a noteworthy feature of the Republican side. The focus on national self-sufficiency and the influence of fascist regimes in Italy and Germany stands out among the Francoist side already during the war, and much more after the formal end of the hostilities on April 1 1939. Francoist state-building efforts through autarkic political, social and economic reforms were carried out under a legal state of war until 1948. I consider that autarky/autarchy is best understood as a military and repressive project, at the heart of the fascist project of transformation of national nature.

Throughout the thesis, writing about revolution, war and Fascism is conceived as an attempt of breaking the “green ghetto” (Armiero 2016) and of telling stories that “other historians care about” (McNeill 2011:14). This is not meant to belittle other topics, but as an attempt to move forward the project of “mainstreaming environmental history” (Melosi 2011:31) and to dialogue with other historians. In other words, I look at war and revolution through urban water

metabolism; I scrutinise the building of Francoism, its idea of Spain and its legacies through fish in the seas, reinforced concrete in the mountains and potash residues in the rivers. Similarly, the focus on the spatial dimensions of the autarkic project and the attention to the notions of scale and circulation is both an attempt to shake off the national framework and a dialogue with geographers, political ecologists and historians of science and technology. Altogether, this thesis contributes to strengthen the historical dimensions of political ecology and geography, while reinforcing the spatial and political aspects of environmental history.

The contribution of the research in this thesis is conceived both as a development of the rich Spanish case study and as different interventions in subfields of research within environmental history. I discuss how the contribution of the thesis unfolds in the following two sections of the chapter. First, I underline that this thesis traces the first steps towards an environmental history of the Spanish Civil War as a critical point of the Interwar Period and a prelude to the Second World War. This encompasses an excavation into the urban environmental history of the two main Spanish cities, Barcelona and Madrid, using the war as an entry point. Second, I discuss how this thesis provides a comparative approach to examine the environmental history of the Francoist regime as part of the environmental history of fascist regimes and practices, focusing on transformation rather than conservation. I comment this contribution in relation to very recent publications from the history of science. In the last two sections of this chapter, I underline the connections of my investigation to the present day and I sketch the future research lines that are opened by this thesis.

## 5.2 Towards an environmental history of the Spanish Civil War (1936-1948)

War and militarisation impregnate all the research articles of this thesis, but its contribution appears more explicit in papers **I, II, III and VII**. An environmental history approach to the Spanish Civil War breaks ground in Spanish historiography and at the same time contributes to fill two gaps in the international historiography about environmental history of war, which has focused on the two world wars, leaving the Interwar Period aside. Furthermore, it has not explored cities as sites and scenarios of military conflict.

First, research about Barcelona's collectivised water supply under the Francoist bombs and the strategic value of water infrastructure in besieged Madrid examine the urban environmental history of the two main Spanish cities through the experience of war (research **articles I and II**). At the same time, these cases illustrate how Spanish cities became military targets, as

would later become the norm in the Second World War. For many among the Francoist supporters, cities embodied corruption, liberalism and decadence. The Francoist coup did not manage to take over the main Spanish cities, and therefore had to assault and occupy them one by one.

Throughout the Spanish Civil War, cities and civilians became military targets for the first time in contemporary war. The Basque town of Gernika has become its symbol through Picasso's painting, but the effects of war on civilians and urban infrastructures were patent in Madrid already in the first months of the conflict. Air raids and shelling impacted the urban fabric in severe ways, putting the urban water supply of Barcelona and Madrid to the test. In doing so, an urban political ecology approach contributes to reveal distinct (political) characteristics of the history of each city's supply system. Madrid's water infrastructure, organised by a state company since the 19<sup>th</sup> century, and the crucial knowledge amassed by its workers, not only resisted the attacks of the besieger troops and the German air raids. It also became a tactical resort exploited by the defenders against an enemy little used to urban warfare. In doing so, it anticipated combats in Warsaw or Stalingrad years later. In Barcelona, the private company in charge of supply was collectivised by its workers and a new form of management, under anarcho-sindicalist principles, was implemented until 1939. The impact of war, however, exposed the precarious infrastructure of the city, which lacked reservoirs and used water of dubious quality. The performance of both companies under the complicated conditions brought about by the war tells about its formation and history, while the reforms and improvements that they attempted to carry out also throw light on their later development during the dictatorship. These case studies show that war can be an illuminating entry point for urban environmental history.

The historiographic concern with the environmental history of the Interwar Period applies also to the research about the militarisation of the Pyrenees during the 1940s (research **article III**). Fortification lines are usually acknowledged as a legacy of the First World War, static battlefronts and a feature of the tense Interwar years when France and Germany committed to the construction of military walls which were to reinforce and secure national boundaries (Maginot and Siegfried lines). The research about the Pyrenees examines a late example of these fortification lines and underlines the crucial role that the mobilisation of human labour played in it. The fortification of the Pyrenees mountain range is conceived as the creation of a militarised landscape through human work, preparing for a war that never took place.

Moreover, its construction connects with the symbolism of the Spanish border with France in the Francoist discourse of the early 1940s.

Finally, the fundamental empirical insight of research **article VII**, which examines the environmental history of water quality in the Llobregat River from a political ecological perspective, is drawn from looking at the disruptive impact of war in socioecological systems. The Spanish Civil War halted the activity of the Catalan potash mines, which have conditioned the water consumed in Barcelona and the whole organisation of the urban supply of the region for the last 100 years. The archival records of salinisation during the late 1930s and early 1940s document the sharp decrease resulting from this halt, and in doing so they question the set of arguments voiced by the administration and the mining company today – namely that artificial salinisation is not so significant and that it is too complex to be measured apart from natural salinisation.

In summary, this thesis contributes to the international literature about the environmental history of war by exploring different facets of the Spanish Civil War as a highly symbolic conflict of the Interwar Period. By doing so, it addresses a research gap that had been pointed out by Chris Pearson (2012b). Moreover, through the cases of Barcelona and Madrid it examines urban aspects of the environmental history of war, which had been mostly left aside in the literature, more concerned with other types of battlefields. This approach benefits from the urban political ecology literature. At the same time, it pushes Spanish historiography about environmental history, breaking the ice with the war while giving an entry point to the contemporary urban environmental history of its two main cities. It conceives war as a disruption shaking socioecological and political systems, and thus affecting rivers as well as property and management regimes. Complementarily, the anarcho-syndicalist takeover of industries, services and agriculture is arguably a unique feature of the Spanish Civil War, and one which could be developed further from an environmental history approach. Additionally, the periodisation of the state of war (1936-1948), crucial in the interpretation of the militarisation of the Pyrenees (research **article III**), opens the way to other studies. These contributions are complementary to other very recent works such as the PhD thesis of Alejandro Pérez-Olivares (2017), who fruitfully applies the notion of urban metabolism to examine social control and militarisation in Madrid under the state of war (1936-1948).

## 5.3 Transformation at the core of an environmental history of fascist regimes and practices

### *5.3.1 Autarky and militarisation as state-building*

When compared to other dictatorships of the period, one distinctive feature of the Francoist regime is the fact it established itself throughout a long and bloody civil war. Unlike Fascist Italy or Nazi Germany, the civil war marked for Spanish fascists the rebirth of the nation, its purification. The palingenesis (see Griffin 2008a) of the Spanish nation – the much-vaunted ‘New Spain’ – took form in the destruction of the democratic regime represented by the Second Republic and the repression and disciplining of its citizens. War is at the core of the new regime: it is the birth certificate of Francoism, and it remained its main memorial site throughout the whole dictatorship. It is from this perspective that I write about the war and the autarkic state-building efforts of early Francoism as interconnected phenomena, both of which required a great control and mobilisation of resources.

From this viewpoint, research **article III** bridges the contribution of environmental history of war with the environmental history of fascism. The end of the military operations in April 1 1939 did not mean the legal end of the war in Spain. The state of war remained until 1948 and involved fierce repression and social control, together with protracted preparations for a future conflict, as shown by the ambitious fortification program carried out in the Pyrenees mountain range. In fact, the periodisation of the state of war (1936-1948) illustrates better the importance of the autarkic social, political and economic reforms as state-building efforts. Through the dual notion of autarky/autarchy (Saraiva & Wise 2010), I put war at the core of the transformation of the national nature. War and military preparations certainly involve landscape militarisation, but this is only one of the materialisations of war in socioecological systems. Along these lines, in research **article IV** I show the militaristic dimension of the reforms supporting the expansion of fishing vessels by focusing on the autarkic reforms of the fishing sector. The experience of the Spanish Civil War left a clear mark on these reforms. Fishing was regarded as part of the sea geopolitics of Francoism, where colonial waters had to play an important role. The colonial territories are fundamental parts of the autarkic project.

This shows how the notion of space is central for the mobilisation of self-sufficiency within the autarkic project. Research **articles V and VI** explore this path of inquiry, examining historic and present-day examples where the notion of autarky is rescaled from the national to the continental. During the Second World War, the French defeat in 1940 and the initial victories of the Axis in the Eastern front paved the way for a Nazi-Fascist European discourse

to emerge. The “New Europe” project went little further than propaganda and economic planning, but made manifest the ductility of the autarkic discourse by shifting the national scale to the continental. At the same time, it showed the central stage of the notion of autarky within the Nazi-fascist project, and the colonial character of this discourse. It is not only the portrait of Africa as the “complement” to European autarky – the same role it occupied in the national autarkic discourses in Italy or Spain. It is the role blatantly assigned to Spain in its contribution to “self-sufficient Europe”, as presented in the propaganda collection discussed in research **article V**: the provision of oranges, olives, wine, cork and mining raw materials, which naturally complements the industrial power of Germany for the completion of “European autarky”. By exposing the imperialist character of the autarkic project, research **articles IV, V and VI** highlight the malleability of the notion of self-sufficiency and overcome the national scale. By focusing on autarky, we’re driven to the European scale and to fascist colonialism.

This thesis contributes to the environmental history of fascism by focusing on the relation of nation and nature throughout the notion of autarky / autarchy (Saraiva & Wise 2010). I adopt an approach of history of science to open new paths in environmental history. The autarkic project is interpreted as a military project and a state-building effort. It is about fortifying the nation with the mix of “nature” and human labour, as presented in research **article III**. It is about feeding the nation with fish while expanding it in these very sea routes, as presented in **article IV**. Following the reasoning of Armiero and Graf von Hardenberg (2013), who pointed out that the environment could be very important in the narratives and policies of a fascist regime even if it did not have an explicit environmental discourse, I place the notion of autarky/autarchy (Saraiva & Wise 2010) at the core of the fascist project of national transformation. In other words, I aim at overcoming conservation history accounts by focusing on the transformative project of autarky and its connection with war.

I examine the post-war years of the Francoist regime as a fascist dictatorship crucially shaped by the Spanish Civil War and the models of Italy and Germany, and I bring it into comparative perspective with other European fascist regimes. By placing the focus on autarky and its uses, I intend to overcome the national scale and scrutinise the continental discourses of self-sufficiency, as discussed in research **articles V and VI**. Here, the association of self-sufficiency with the rebirth of the nation – the ‘New Spain’, the ‘New Europe’ – points to the potential interest of an environmental history approach to the notion of palingenesis (rebirth) within fascism (see Griffin 2008a).

The approaches of history of science – particularly the analysis of autarky as a dual concept (Saraiva & Wise 2010) have been key for developing this research. Accordingly, the following subsection discusses the contributions of the thesis in relation to the most recent research in this field.

### *5.3.2 At the intersection of disciplines: History of science, political ecology and environmental history*

The approaches and methods of history of science have greatly informed this thesis. The insights of Tiago Saraiva and Norton M. Wise on autarky and fascism (Saraiva & Wise 2010), the publications of Lino Camprubí about the role of engineers in the Francoist dictatorship (Camprubí 2017; 2014; 2010) and the studies about the circulation of scientists in Nazi-fascist Europe (Brydan 2016; Clara & Ninhos 2016) have contributed to find an alternative environmental history approach to the focus on conservation as it had been set for the Spanish case (Ramos Gorostiza 2006). This influence is reflected in the list of references of each research article but also in the approach and methods followed. Both research papers **II** and **III**, for instance, followed militant and military engineers through the landscapes of besieged Madrid and the occupied Pyrenees. Excavating the biographies of these engineers lead sometimes to key findings for the papers.

Researchers from the history of science are engaging with environmental history of fascism, both shaping its perspectives and providing new interpretations. Two very recent papers in the main journal of the field, *Environmental History*, testify to this fact. Sarah Hamilton has explored the role of Spanish conservationists and environmentalists in relation to state policies during the Francoist dictatorship (Hamilton 2017). She considers that natural scientists occupied a similar role in the regime as did engineers, and she cites the work of Camprubí (2014) when stating that despite some constraints, “scientists and engineers found ways to work within and alongside the Franco regime to advance their own interests, not only carrying out but also contributing to the definition of the objectives of the Francoist state” (Hamilton 2017:261). She acknowledges the importance of repression during the 1940s, characterising the 1940s as the “years of hunger” and explicitly linking the autarkic strategy of Francoism with the regimes of Hitler and Mussolini. Her main interest, however, is tracing the emergence of the modern environmentalist movement in the 1970s.

On another note, historian of science Tiago Saraiva has continued his work on fascism and recently published an article in *Environmental History* (Saraiva 2016a) and a monograph by MIT press (Saraiva 2016b). Together, both works constitute a new step for the comparative approaches to environmental history of fascist regimes and their practices and, particularly, to overcome the focus on conservation policies, therefore joining forces with previous contributions already discussed (Armiero 2014; Armiero & Graf von Hardenberg 2014; 2013). Conservation certainly could not be the departure point for the Portuguese case; as reminded by Saraiva, the first Portuguese national park was created as late as 1971. Saraiva points out that “instead of taking fascism as a given and then seeing how it relates to the environment, deciding if it is more or less conservationist, I think it useful to engage directly with the historical dynamics of fascism” (Saraiva 2016a:2-3). In order to do so, he examines how the fascist “New Portugal” transformed the national landscapes. Significantly for the Spanish case, he does characterise the Salazar regime as fascist, relying on the work of Manuel Loff (2008) and others. Saraiva’s focus in the research paper lays in showing how “crops, dams and forests” were key elements in the institutionalisation of fascism in Portugal. Therefore, he explores national campaigns to increase the production of wheat, spread irrigation and develop afforestation, and underlines the importance of the fascist support of autarky. As an analytic proposal, he suggests to “place intensive environmental management at the core of fascist modernist experiments”. (Saraiva 2016a:18). Accordingly, in his book *Fascist Pigs: Technoscientific Organisms and the History of Fascism* (2016b), Saraiva develops this proposal by exploring Hitler’s Germany, Mussolini’s Italy and Salazar’s Portugal and their colonial projects through the circulation of “technoscientific organisms” such as pigs, cotton, sheep or rubber. At the intersection of history of science and environmental history, Saraiva suggests that the best way to understand fascism is not as a “reactionary modernism”, but as “alternative modernities” (Saraiva 2016b:12). The attempts of fascist regimes to advance towards self-sufficiency in food production – feeding the national community with the products of the national soil – are the case studies explored by Saraiva.

The case of Spain, not addressed by Saraiva, had been explored by historian of science Lino Camprubí in several papers that later became part of the monograph *Engineers and the Making of the Francoist Regime* (2014), which has been discussed in **Subsection 2.4.3**. Camprubí has very recently published a Spanish translation of this book with a few more additional and original chapters (Camprubí 2017). It stands as a compilation of well-researched articles that succeed in illustrating the importance of scientists and engineers in the political construction



of Francoism. The new cases expand the range of landscapes and scientific disciplines explored: the importance of oceanography in the Gibraltar strait, the phosphate mines in the former colonial territories of Spain in Northern Africa and the protection of the Doñana natural reserve enrich significantly the original contents of the original book. As pointed out before, however, the fact that Camprubí is not particularly interested in the nature of the Francoist regime reduces its application for comparative approaches, richly explored by Saraiva (2016b). Additionally, the repressive dimension of the autarkic project remains little visible. Although the importance of the Francoist repression is underlined in the introduction of Camprubí's first book (2014), it doesn't take a central role in its work – something that, on the other hand, may be understandable given the approach of Camprubí's research, focused on engineers and scientists.

By exploring the importance that the Francoist regime assigned to fishing in the feeding the Spanish nation, research **article IV** shares some features with Camprubí's work and, particularly, with Saraiva's concerns. However, I make a special effort to visualise repression and social control as an integral part of the transformations launched by the Francoist regime. While the role of military engineers and Francoist officials who designed and supervised the efforts to expand the fishing fleet and increase fish consumption is of course fundamental, this transformation could only operate through the violent remaking of fishing communities. This includes the hundreds of fishers assassinated without trial, including union leaders, and other mechanisms of repression enacted under the state of war. My concerns behind research **article III** are fairly similar. When exploring the first years of Francoism through the militarisation of its symbolic national border, I acknowledge the importance of military engineers in designing fortifications and planning the landscape for a future war. But most of all, I conceive military occupation of the border as social control, and examine the fortification and transformation of the border landscape as a process fuelled by the mobilisation of forced human labour. From my perspective, when examining the state-building efforts of fascist regimes and their control of "nature", the key contribution of the Spanish case study is the central role of violence and repression in the remaking of social institutions and landscapes. This is also a reason why the war, with the violent cleansing it involved, should not be left aside when analysing these transformations.

Finally, I envision research **articles V and VI** as first steps towards an environmental history of the notion of autarky, and therefore as a complementary work to Saraiva's more material exploration of the circulation of "technoscientific organisms" between Germany, Italy,

Portugal and their colonial territories (Saraiva 2016b). The Nazi-fascist “New Europe” project may have been short-lived and marked by war, but recent research is fruitfully exploring different aspects of it and environmental history can also provide significant contributions.

#### 5.4 Legacies and militant history: A new presentism?

Throughout the seven research articles that form the second part of this thesis, I explicitly attempt to connect my research in environmental history to political questions of today. This challenge, operating through the approach of political ecology, has continually pushed me out of my comfort zone as a historian. In previous chapters, particularly in the summaries of the research stories, I have exposed some of the motivations that have guided my work, intertwined with my trajectory in recent years, visualising part of my current political interests.

The research on Madrid and Barcelona unearthed stories about the workers sustaining urban metabolism in the face of war. In the case of Madrid, it highlighted the strength of its public water supply system. In the case of Barcelona, it illuminated a quite unique episode of collectivised property regime of urban water supply. Together with the accomplishments of the collectivised water management of Barcelona, I excavated critical knowledge about the disruptions that affected water quality during the Spanish Civil War. The sharp decline in salinity of the waters of Barcelona during the war, caused by the halt of the potash mines, is a valuable episode for today’s controversies. Both the current mining company and the Catalan government have downplayed the importance of pollution using the argument of the “natural” salinity of the region. The three stories therefore explore “the political” in environmental history (Barca 2016b) and highlight the value of history today. They can be seen as “axes of war to be unearthed”, in the expression used by Italian authors Wu Ming and Vitaliano Ravagli (quoted in Armiero 2011:58).

In a slightly different manner, in research **article IV** I strove to find the legacies of autarkic/autarchic reforms in the fishing sector *today*, explicitly linking it to the overcapacity of certain sectors of the fishing fleet or the slow re-emergence of small-scale fisheries. Other material legacies of ‘autarchy’ can be found in the Pyrenees, where the hundreds of bunkers that can still be found scattered through the border are slowly swallowed by forests or demolished by new roads. They stand as ruins, symbols of the Francoist autarky/autarchy and its mobilisation of forced labour. Finally, the historical exploration of the uses of self-sufficiency and its scales dialogues with debates about degrowth today and aims at contributing

to a reflection on the distinction between fascist autarky and democratic/emancipatory self-sufficiency projects, not only historically but at present as well.

The overall effort to speak to the present day through these articles and acknowledge some of my personal motivations is therefore in line with Naomi Oreskes' call for a "motivational presentism" that better connects the present day concerns with historical research and helps historians to re-occupy the public sphere and play a role in diagnosing the present day problems (Oreskes 2013). Throughout the thesis, I have also tried to avoid focusing only on academic publications and used other media – and languages – to communicate knowledge. Oreskes' reflection on the personal interests of historians and the connections with their research topics – where they see of the value in history – could benefit from a Gramscian framework (Nieto-Galán 2011). After all, our interests and concerns as historians are also the result of a historical process. As put it by Gramsci, "the starting-point of critical elaboration is the consciousness of what one really is, and is 'knowing thyself' as a product of the historical process to date which has deposited in you an infinity of traces, without leaving an inventory. Such an inventory must therefore be made at the outset." (Gramsci 1999 (1932):628). Acknowledging this inventory, however, requires an exercise of reflexivity, one that is not often undertaken by historians.

## 5.5 Limitations and future research

### *5.5.1 War, urban environmental history and military conservation*

This thesis has examined how the Spanish Civil War and the post-war years extended militarisation to a wide range of landscapes and greatly disrupted socio-economic organisation. It has explored some aspects of the environmental history of the war: the impacts in the urban fabric of Barcelona and Madrid, an example of collective property regime of urban water supply, the impacts to water quality or the militarisation and transformation of the Pyrenees mountain range. Many other aspects of environmental history of the Spanish Civil War could be explored through other case studies. The battle of Teruel (1937-1938), which took place under one of the harshest winters of the 20<sup>th</sup> century, could be used to examine to the agency of weather – and the emerging importance of weather forecasting – in war. Similarly, the final battle of the Spanish conflict, at the Ebro River (1938), could show the importance of the river as a natural obstacle, but also its mobilisation as a weapon through the regulation of dams, which the Francoist repeatedly opened to cause flash floods. By including new case studies

and encompassing the post-war years as well, I aim at writing a book proposal on the environmental history of the Spanish Civil War using this thesis as a base.

Other paths of inquiry remain open. The experience of the collectivised water management of Barcelona during the war could open the door to studying similar experiences in agriculture, industries and services. The case of Madrid is especially interesting, since it shows how urban environmental history can explore the intersections between nature, nation and the city. The example of Madrid water supply, managed by a state company, illustrates the importance bestowed by the national government to its capital. This connection could be an entry point for an urban environmental history of the Spanish capital that would bring together urban and national history. History of science could contribute here with a more nuanced analysis of the role of sanitary engineers in the building of modern water supply systems and the struggles of the social sectors that resisted urban reforms. Although several city “biographies” have been published in US environmental history, there are very few European examples of this genre.

Finally, I have not explored the importance of military conservation. The Spanish army holds a significant amount of property throughout the country: military bases, training camps and shooting ranges are some examples, as well as dozens of protected natural spaces. Many of these properties were acquired during the Francoist dictatorship, and its management and history could be studied from a political ecology approach. This would add to the current environmental history literature that has studied these properties in other countries of the world (Coates et al. 2011; Pearson et al. 2010).

### *5.5.2 Autarkic landscapes and the colonies*

Apart from war, the mobilisation of the notion of self-sufficiency is one of the central inquiries of this thesis. As David Harvey put it, all ecological projects are political-economic projects, and vice-versa (Harvey 1996:182). The Francoist autarky was no exception. Its manifestations in the mobilisation of nature are multiple, and could be explored beyond fishing, as Tiago Saraiva’s “fascist landscapes” of Portugal (Saraiva 2016a) illustrates. The variety of possible scenarios has been partly explored by Lino Camprubí (2017).

Certain aspects of the autarkic project, however, remain unaddressed. First, the role of engineers and the deployment of “science” in the territory could be intertwined with repression and with the narration of the resistances from below. Examining technological disasters during Francoism, such as dam failures, may illuminate the stories of the victims in contrast with the

privileged role of engineers. Along these lines, examining case studies that bring to light the violent contradictions between national autarkic projects and the destruction of local self-sufficient practices and communities could be particularly revealing. By exploring a form of environmental violence, it would contribute to the literature on environmental conflicts. Additionally, debates about autarky, protectionism and economic nationalism could be set in a wider history of these ideas, going beyond the Interwar Period and fascist regimes.

Such an approach could be fruitfully applied to examine how colonial territories have historically been conceived as “complements” to the national economy. In this thesis, I have attended to the expansion of fishing in relation to the colonial possessions of Spain in Africa, and I have also underlined the colonial character of the “New Europe” discourse in its portrait of Spain as a provider of raw materials to Germany. But research about the transformations spurred by the autarkic reforms in the Spanish colonies in Africa – Guinea, Morocco, Western Sahara – could be much more developed and would provide a new comparative scenario between fascist regimes. Studying the scientific expeditions interested in defining and controlling natural resources could combine the concerns of history of science with the interest of political ecology in the legacies of these projects. Moreover, the tradition of Spanish environmental history in agrarian and forest topics could provide a solid support to explore, for instance, the management of Guinean forests or its cacao plantations. Examining the institutionalisation of autarky in Guinea, particularly, along lines of race, could provide a rich case study to the environmental history of fascism in general and to the particular case of the Francoist dictatorship.



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## **PART II**

### **Research articles**





## **Introductory note**

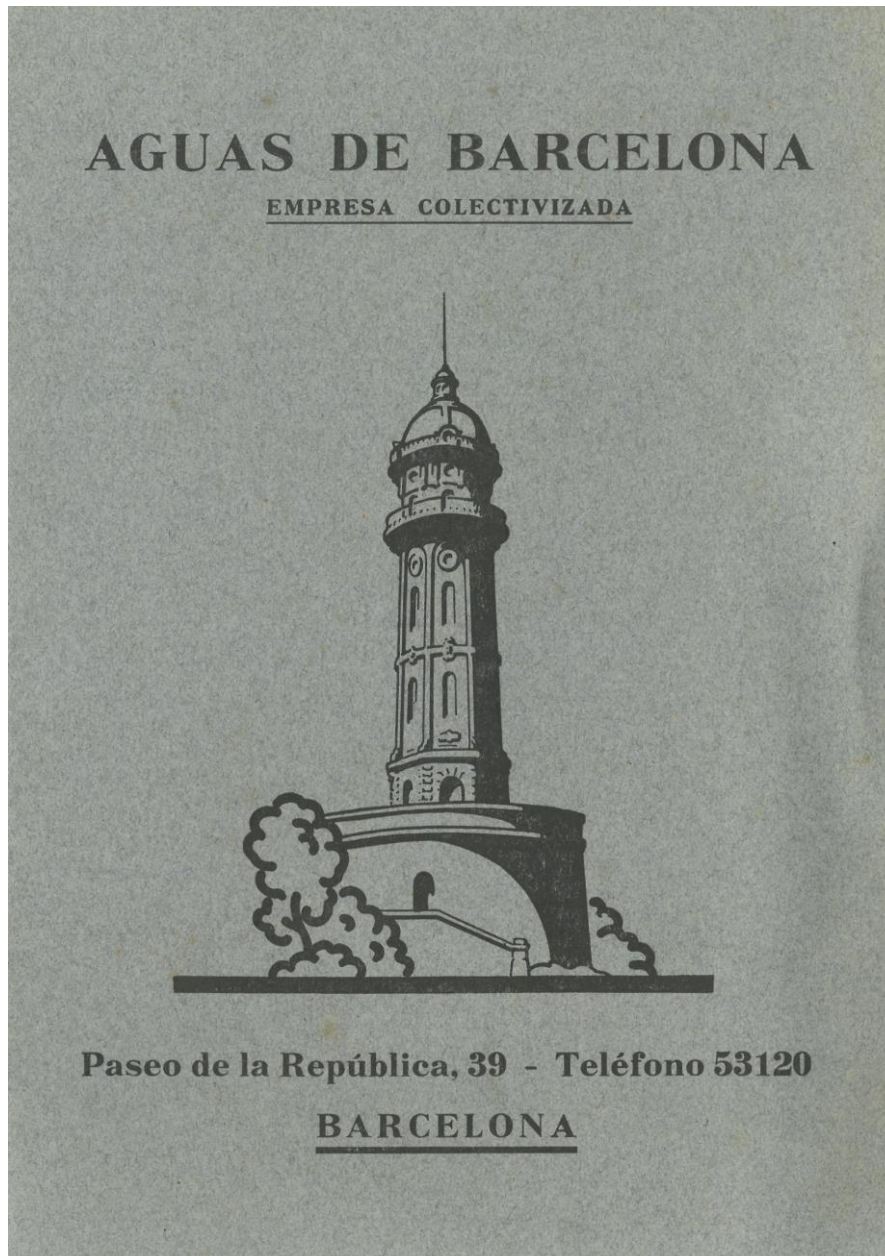
When preparing this section of the thesis I struggled between two options. Four of the following seven research articles are published, so one possibility was to simply include them in their final journal publication format. On the other extreme, I could have modified all the papers to regularise the format and the citation system. I considered this option because research articles III, IV and V use a citation system completely based in footnotes, with no reference list.

I decided upon a middle ground. I prioritised consistency, meaning that the following articles have the same format as the rest of the thesis and that the numeration is coherent. Each of them, however, has an independent list of references, footnotes and figures. I added a list of references in articles that did not have one. I indicate those articles that have been published by including their first page exactly as it appears in the journal.



## RESEARCH ARTICLE I

### “Servicing customers in revolutionary times: the experience of the collectivized Barcelona Water Company during the Spanish Civil War”



**Figure 1:** Water consumption notebook, Aguas de Barcelona, Empresa Colectivizada. 1937-1938. Source: Personal collection.

# Servicing Customers in Revolutionary Times: The Experience of the Collectivized Barcelona Water Company during the Spanish Civil War

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**Abstract:** Debates on the total or partial privatization of water usually follow the rationale that efficient and rational management is best left to the private sphere. In this paper and using a historical example, we attempt to assess critically this assumption arguing that efficiency and rationality in resource management are and have been an asset of collective management as well. We present the case of the Barcelona Water Company, run by its workers during the Spanish Civil War, to illustrate how in certain cases, gains in economic efficiency and rational management that had been impossible to accomplish under standard private management, were achieved by collective action. Workers management during this period not only improved efficiency and rationality but to a large extent did so also procuring equity and fairness in the provision of water to the citizens of Barcelona despite the harsh conditions brought about by the war.

**Keywords:** urban water management, collective action, anarchism, Spanish Civil War, Barcelona

## Introduction

In November 2010, while addressing a group of farmers in Lleida (Western Catalonia), one of the leaders of the conservative coalition *Convèrgència i Unió* protested against those that considered “birds more important than humans”. This admonishment was directed towards the Catalan Department of the Environment, then in the hands of a coalition of former communists and greens, for having pursued the compliance of several European Directives on the protection of habitats and species. The crux of the matter was the “Segarra-Garrigues” project which had to transform more than 200,000 ha of dryland farming into irrigated land. Besides the highly dubious economic and social profitability of this project, much of the cereal fields and olive orchards to be transformed had become an important habitat for threatened species included in European Directives. Hence, the amount of land that could be changed to irrigated land was curtailed by the Department of the Environment, raising the anger of farmers and landowners. Generous compensation packages and the fact that irrigation would not be prohibited but simply regulated and subject to maximum efficiencies did not deter protesters of their vociferous opposition to the “red–green” coalition in power.

**Servicing customers in revolutionary times: the experience of the collectivized Barcelona Water Company during the Spanish Civil War**

Paper published in *Antipode*, September 2013, Volume 45, Issue 4, pp. 908–925.

**Co-authored with Hug March and David Saurí.**

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## **1. Introduction**

In November 2010, while addressing a group of farmers in Lleida (Western Catalonia), one of the leaders of the conservative coalition *Convèrgencia i Unió*, protested against those that considered “birds more important than humans”. This admonishment was directed towards the Catalan Department of the Environment, then in the hands of a coalition of former communists and greens, for having pursued the compliance of several European Directives on the protection of habitats and species. The crux of the matter was the “Segarra- Garrigues” project which had to transform more than 200,000 hectares of dryland farming into irrigated land. Besides the highly dubious economic and social profitability of this project, much of the cereal fields and olive orchards to be transformed had become an important habitat for threatened species included in European Directives. Hence, the amount of land that could be changed to irrigated land was curtailed by the Department of the Environment raising the anger of farmers and landowners. Generous compensation packages and the fact that irrigation would not be prohibited but simply regulated and subject to maximum efficiencies did not deter protesters of their vociferous opposition to the “red-green” coalition in power.

This long paragraph encapsulates the main argument we wish to develop here, namely that, in certain cases, modest reformist policies can only be implemented when forces with presumably much more radical agendas take over management responsibilities. As we will attempt to show with the case of the Barcelona Water Company (SGAB) during the Spanish Civil War (1936 – 1939), it may take “radical” management (by anarchist unions in this case) to pursue and implement standard reformist policies such as the economic rationalization of water provision or the increase in the amount of water delivered to flats and houses in order to improve sanitary conditions. A related topic explored in the paper is the assessment of a private water supply system that, in the hands of a worker-controlled company, attempted to become more efficient introducing at the same time, equity concerns. Finally, the paper may also offer an interesting example of the performance of essential public services during wartime in a city not only affected by the scarcity of essential inputs for the delivery of water but also subject to frequent and damaging air raids.

One central point of this paper is that, as in other spheres of social life, ideas of (economic) rationality and efficiency in the management of natural resources have been successfully sequestered by neoliberal discourses with devastating consequences for the

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Left. Thus efficiency has been especially associated with the private realm while equity has been more a matter of public action. This distinction needs a deep rethinking since neoliberal approaches are penetrating more and more into the equity dimension while from the Left rationality and efficiency are sometimes viewed suspiciously as something irrelevant or, worse still, as pennants of Neoliberalism. Both concepts are powerful weapons to undermine public property and management of natural resources under common and uncontested axiom that, by definition, everything that comes from the private sphere is rational and efficient and everything that comes from the public sphere is the opposite. To take a recent example, the current proliferation of public-private partnerships in the management of key resources such as water finds an ideological justification in that the contribution of the private partner would ensure the rationality and economic efficiency of management decisions while the public partner would cover for the equity and distributional issues.

All these arguments need to be seriously questioned using the many examples existing both in the present and in the past. In what concerns the present and in the urban water field, for instance, there are numerous examples of successful public water companies able to deliver supply and sanitation services in efficient and equitable manners (Castro and Heller 2009; Delclòs 2009). However, in this paper we want to look at a little known example from the past in which rationality and efficiency management measures were rather successfully implemented not by a public company but by a private company taken over by its workers and collectivized in the years of the Spanish Civil War. In July 1936 and after the Franco putsch, the revolutionary forces seized power in Barcelona and the anarchist union *Confederación Nacional del Trabajo* (CNT) came to control a number of private companies including the *Sociedad General de Aguas de Barcelona* (SGAB). The company was subsequently collectivized and workers were in charge of management from 1936 until 1939 when the war finished with the victory of Franco and the company was returned to its original owners. The collectivized SGAB undertook a number of initiatives leading to the improvement of the access to water by the citizens such as the rationalization of water pricing or the increase of the amount of water available for flats after the application of hygienist principles. These management initiatives (that would probably fit well today under the “ecological modernization” framework) found growing difficulties as Barcelona was heavily bombed by Italian planes and the dams of the Pyrenees producing electricity for the city fell under

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Franco's hands. However, in 1939, the original owners silently acknowledged an important number of the management policies taken during the war. Despite mounting difficulties, the SGAB never ceased to provide water to the city and in 1939, when reappropriated, could soon operate again under normal conditions. After a number of takeovers and changes in ownership, the SGAB came to be the leading company in the corporate conglomerate known as AGBAR (*Grupo Corporativo Aguas de Barcelona*) including more than 120 subsidiary companies in Europe, Africa, Latin America and Asia, many of them in the water business. In Spain alone, AGBAR controls more than 50 percent of the private market with a special presence in the Mediterranean areas (Del Romero 2006). In October 2009, 70 percent of AGBAR shares were purchased by French giant utility company Suez Environnement.

This case study is interesting for a number of reasons. First, it provides an example of a relatively rare property regime for urban water supply not yet explored in the literature. Second, and by examining the performance of an essential public service during wartime, it may also contribute to the still relatively small literature on urban resource management under very stressful conditions. But perhaps more importantly, this case may question taken for granted axioms in the water and elsewhere in the environmental sectors such as the achievement of rationality and efficiency conditions is only possible under specific forms of corporate private management. Finally, it may reconnect current interests in Critical Geography for alternative resource management regimes with academic contributions of the past on the same topics. For instance, our interest in the collectivization of the Barcelona water company during the Spanish Civil War echoes the interest in exploring the geographical dimensions of agricultural or industrial collectivisations during the same period (see Breitbart 1978a).

To our knowledge, this article constitutes the first historical study on the Barcelona water company during the Spanish Civil War which uses primary sources as basic data. Although the collectivization process has been extensively studied (see, for instance, Adín et al 1989; Bernecker 1982; Bricall 1970; Castells 1993; Leval 1977; Mintz 2006 Peirats 1971; or Pérez Baró 1974), most of this work has focused on either the agricultural sector or in certain industrial activities while utility companies have not received a comparable level of attention. Gas and electricity were examined in Castells (1993) but we only find brief references to the SGAB collectivization in Amsden (1978) Bernecker (1982) and Leval (1977). A classic contemporary report on the work of the



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collectivizations (Souchy and Folgare [1937] 2007), often reprinted ever since the end of the war, included a valuable interview with workers of the collectivized SGAB extracted from *Solidaridad Obrera*, but a cross-checking exercise with the original source has revealed significant gaps (*Solidaridad Obrera* 1937). In broader contributions on the history of water in Catalonia, the collectivization period is only mentioned in a few sentences (Aldomà 2007; Latorre 1995). Only the work of Voltes Bou (1967), published by the SGAB, pays a little more attention to the reforms. Voltes Bou, however, described the workers management of the company as naive and contradictory, while obviating the difficult circumstances in which it developed. Considering all these facts, it comes as no surprise that in a recent exhibition of the Barcelona historical museum, under the title “Water Revolution in Barcelona: Running water and the modern city (1867-1967)”, the collectivization years of SGAB were totally ignored (MUHBA and Ajuntament de Barcelona, 2011).

Our research has been based on a partial access to SGAB archives, which permitted us to examine the company’s correspondence between 1936 and 1940 (12 boxes, some 8.000 documents). The SGAB annual reports, public administration official diaries and press clips from *La Vanguardia*, *Solidaridad Obrera* and *Luz y Fuerza* have been used as ancillary sources. Moreover, two interviews were conducted with workers in key positions of SGAB in order to clarify certain problematic issues.

The paper is organized as follows. In the first section we review the concepts of rationality and efficiency in the water management sector especially in the light of the debate on the merits and pitfalls of several property regimes. Second we present our case study as an example of a rare and previously unreported property regime that introduced important rationalization and efficient actions in the water supply of Barcelona during the Spanish Civil War. Third we discuss some of the most important management actions taken by the workers in order to improve water supply in the city and that included, among others, the creation of a single water tariff for the entire city; the creation of a “social” price for water, and the compromise of maintaining the service even under heavy bombing or massive electricity cut-offs. Finally, we offer some conclusions regarding the potential implications of this case study for improving the technical and economic performance of urban water supply systems for the benefit of all users under conditions of efficiency and fairness.

## **2. Rationality and efficiency in the debate about urban property regimes**

The privatization of water services in the United Kingdom at the end of the 1980s (Bakker 2003, 2005, 2007a; Finger and Allouche 2002; Fraser and Wilson 1988; Gómez-Ibáñez 2003; Hassan 1998) or Chile (Bauer 1997, 1998, 2004; Budds 2004) and other events such as the drought that threatened parts of Europe in the 1990s (see for instance Bakker 2000) stimulated research about the pros and cons of private versus public approaches to water management especially in urban areas (Chong et al 2006; Davis 2005; Hall and Lobina 2006; Johnstone and Wood 2001; Renzetti and Dupont 2004; Saal and Parker 2000, 2001; Shaoul 1997). These contributions coalesced with work in critical Human Geography about Neoliberalism and its impact on the environment to produce a lively debate on how water could express nature-society relations under the current phase of capitalism (for summaries on the most important points of this debate see Bakker 2007b; Budds and McGranahan 2003; Castro 2007, 2009; Swyngedouw 2004; Wilder and Romero Lankao 2006). The most promising and at the same time challenging result of this debate is that the dichotomy public-private no longer serves to encapsulate the many different situations found regarding this matter (Bakker 2010). On the one hand, assumptions on the relative merits of the private sphere in “producing” resources efficiently versus the inefficiency of the public sphere in doing the same, fare poorly in front of well managed public systems around the world, from Scandinavia to the US. On the other hand, the privatization wave supported among others by the World Bank that swept many cities in the 1990s has receded amidst situations of social conflict and even violence, especially in Latin America (Marvin and Laurie 1999; Morgan 2004). Private companies (and the World Bank, 1997) prefer now “Public Private Partnerships” (PPPs) at a moment when privatization of water services has been firmly refused in Italy by popular decision and some capitals such as Paris have remunicipalized (i.e. deprivatized) their water supply.

One of the possible shortcomings on the debate between public and private forms of managing urban water utilities has been perhaps the acknowledgement that these (or different combinations of the two) are the only possible options available. Likewise, and despite the rhetoric of privatization proponents, efficiency and social equity continue to be presented in antagonistic ways only to be reconciled through the joint action of the market (which would ensure efficiency) and the various levels of the State (which would ensure social equity) as in PPPs. As said before, however, one important question

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is whether efficiency is limited to the neoliberal logic or, on the contrary, can be mobilized by other political and economic paradigms. As Wilder and Romero Lankao argue (2006:1991): “privatization appears not so much an instrument aimed at improving efficiency as it does a channel for preferred treatment for capital accumulation by private entities as well as a legitimized way for the state to transfer the financial and politically charged burden of water management to non-state institutions”.

Currently the issue of efficiency is especially deployed in justifications for the corporatization of public companies (as a first step towards some form of privatization). Under corporatization, or what is the same “New Public Management”, the market is introduced into the State (Gamble 2006) so that the latter emulates private practices and private ethos (Smith 2004). Nevertheless, if efficiency is decoupled from its strict neoliberal interpretation (i.e. more monetary revenue per worker or per cubic meter of water to be seized by company owners and not by society at large) it may not only overcome the supposed contradiction with social equity but may help to improve the latter as well. This discussion may be framed also in the light of new proposals regarding water management in the developing world that attempt to transcend the public-private schism and ensure more efficient and just management systems. For instance, communal forms of management have been explored by authors such as Karen Bakker (2007b). Bakker argues that water users are increasingly pictured as individual customers with individual responsibilities following an economic logic rather than a collective of citizens receiving a public service.

The study of historical examples attempting to promote both efficiency and social justice criteria with the overall objective of supplying water at affordable prices for all urban households could be useful in helping to develop management strategies able to correct some of the more pressing problems that cities in the developing world may have regarding water supply and sanitation. However, it remains to be seen whether the pursuit of such objectives of conjuring up efficiency and equity matters is only possible in periods of radical reforms such as those of Barcelona during the Spanish Civil War. In the following sections we will develop our narrative of a private company under the collectivised management of its workers that attempted (and partially succeeded even after the defeat) to reconcile efficient water supply management with equity principles of water in enough quantities to satisfy basic needs, and this under the formidable constraint posed by war.

### **3. Water supply in Barcelona during the first decades of the 20<sup>th</sup> century**

Barcelona constitutes one of the earliest European examples of water supplied by a private company (Masjuan et al 2008). Urban and industrial growth from the mid 19<sup>th</sup> century onwards proved the inability of municipal authorities to provide water in sufficient amounts and opened the door to private interests eager to capture the benefits derived from the urban plan (*Eixample*) of 1859. By then a myriad of small water companies joined the city council in supplying water to the expanding neighborhoods and towns near Barcelona. Until 1878, two thirds of the supply came from a nearby spring through a municipal aqueduct. The rest was obtained from groundwater or from the ephemeral streams that circulated in the Barcelona plain. Conflicts with industrialists, closely allied to real estate businesses, prompted in 1888 the concession to the private water company *Compañía de Aguas de Barcelona* to excavate more wells in the Besòs River. At the end of the 19<sup>th</sup> century, the *Sociedad General de Aguas de Barcelona*, which had survived successfully the financial turmoil liquidating many of the private companies, consolidated its power and in 1905 began to pump water from the aquifer of the Llobregat Valley (Martín Pascual 2009). In 1913 the company resisted an attempt of municipalization, and at the beginning of the 1930s, after the acquisition of a number of smaller companies, controlled about 80 percent of the water supplied to Barcelona as well as that of neighboring municipalities (Claramunt 1933; Masjuan et al 2008).

During the 1920s, under the dictatorship of general Primo de Rivera, the city of Barcelona experienced another era of intense urban development. Attracted by the public works planned for the 1929 International Expo, thousands of workers from the rest of Catalonia and from Spain settled in the city and worked on several large public projects such as the paving of the main streets or the digging of the first underground line. The Expo was inaugurated in May 1929, featuring what was to become its symbol and is still today an important tourist attraction: the so-called *Font Màgica* of Montjuïc. This luxurious fountain was designed as a water garden, flanked by vast waterfalls. During the shows, water jets mingle with different shades of light, both fascinating and refreshing tourists in warm summer evenings. Eighty years ago, the *Font Màgica* showed the splendor and wealth of Barcelona to the world. The success of the Expo

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inauguration was also meant to be the success of the SGAB, which offered a public image of water abundance (Voltes Bou 1967).

Nevertheless the overly lavish fountains of Montjuïc could not hide for long the inequalities in access to water that existed in the city. Between 1914 and 1936, the population of Barcelona doubled from 600,000 to 1,200,000 inhabitants (Oyón 2008). During this period, lack of affordable housing led to an intense process of densification in the old downtown districts, and also to an increase of slums in several parts of the city (Oyón 2008; Tatjer 1998). In fact, in the early 1930s, some 20,000 homes (13 percent of the city buildings) had no running water, which meant that about 100,000 people did not have access to this basic service (Claramunt 1933; Martín Pascual 2009). In the old districts, population density could be ten times the average figure of the rest of Barcelona, and the number of people per building twice the city average. Several families were forced to share a single toilet and sanitary conditions were very poor. Furthermore, the extreme subdivision of flats into smaller apartments was accompanied by increase of rents, which only in the 1920s grew between 50 and 150 percent (Ealham 2010). Despite the benefits reaped landlords made few improvements in the houses (Tatjer 1998).

Protest by working class tenants had started in 1918, when the anarchist *Confederación Nacional del Trabajo* (CNT) established the Tenants Union, and demanded improvements in housing and a 50 percent discount in rents. Four years later, the CNT Tenants Union called a strike on the payment of rents which was quickly supported by the Builders Union (Ealham 2010). When in 1923 Primo de Rivera seized power and established a military dictatorship, the CNT was banned and the protests silenced for the rest of the decade. On January 15 1930 the International Expo closed its doors with an impressive economic deficit, creating a burden that would condition the municipal management of the following years. Barely one year later and amidst the international turbulences of the 1929 crash, the Spanish monarchy fell and the Second Republic was proclaimed.

The birth of the Second Republic marked the approach of progressive policies in several areas. Health policies would be slowly transferred to regional authorities, which began a hectic legislative effort (Serrallonga 2006). The recovered civil and political rights made resurface some of the urban conflicts repressed during the dictatorship of general Primo de Rivera. The so-called rent strike, supported by anarchist unions, reappeared in the

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spring and summer of 1931. Strikers asked again for a 50 percent reduction in rents as well as for improvements in flats. At the end of the summer there were some 100,000 strikers in the city (Ealham 2010). Water supply occupied a central role in this since, contrary to electricity and gas (arranged by tenants with the respective companies), it was contracted by landlords and included in the rent of thousands of houses of the city (Claramunt 1933).

As said before, in the 1930s, the SGAB supplied about 80 percent of water of Barcelona and other cities in the vicinity. Water was obtained from the aquifers of the Besòs and Llobregat river valleys as well as from springs and fountains. The second supplier was the Barcelona city council itself who took charge of the Montcada wells, also in the Besòs valley. The rest was supplied by smaller companies and individuals who held rights to certain local water sources (Claramunt 1933). Price varied according to use and elevation (Conillera 1991). In neighborhoods on higher terrain, it could go up to 2.5 pesetas/cubic meter whereas in those on the plain it oscillated between 35 cents and 1 peseta/cubic meter (*Luz y Fuerza* 1937a; *La Vanguardia* 1933). The installation of water meters progressed rapidly in the city although in the denser working class neighborhoods water was still mostly delivered from cisterns located in the roof of the buildings. These cisterns were filled with a constant flow of water that ensured a volume of 100 liters per day (Claramunt 1933; Oyón 2008).

In flats with ten or even fifteen occupants, water provision per capita could be as low as seven or eight liters per day, perhaps barely for very limited personal hygiene and cooking, but not for washing clothes and other household uses (Claramunt 1933; Oyón 2008). Moreover, water arrived many times in poor sanitary conditions which forced tenants to obtain the resource from public fountains and to use public baths for personal hygiene. For landlords, though, this system worked very well since water had a fixed and relatively small cost. However, during the 1930s some voices from public health services began to argue that more water was needed for households and that the main obstacles for this were the greed of landlords and the passivity of municipal authorities. For example, Doctor Lluís Claramunt, director of the Municipal Institute for Hygiene, argued that the cistern system and the fact that water was included in rents were the main obstacles towards a needed increase in the use of water for which he saw meters as essential tools. In addition, Claramunt observed that the lack of maintenance of cisterns (usually made of lead) turned them into infection foci. Hence, low supplies per capita

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and poor sanitary conditions contributed to the frequent episodes of typhoid fevers and other diseases, still present in the Barcelona of the 1930s (Claramunt 1933, 1934).

In 1930 and therefore still under the dictatorship of Primo de Rivera, a new Municipal Public Health decree had been approved in Barcelona (Ayuntamiento de Barcelona 1930; Martín Pascual 2009; Tatjer 2001). According to this regulation, if water was included in the rent, landlord had to guarantee a minimum of 250 liters per day, plus 100 liters more for each room larger than 9 square meters and 50 for each additional room smaller than 9 square meters. Moreover, if the flat had a bath, supply had to be increased in 100 liters, and if it had a facility for washing clothes, it had to augment in 200 liters more. New buildings had to be supplied through meters exclusively and costs would be paid directly by tenants.

These and other measures addressed to modernize the water delivery system looked good on paper but proved difficult to apply. Under the Republic, the new democratically elected municipal government pushed the Health Decree to come into effect under the conflictive context of the rent strike. In 1932 new articles were added to the regulations, including a provision by which landlords had to renovate the water supply facilities of rented flats (Martín Pascual 2009). Landlords rapidly objected to this mandate arguing economic difficulties caused by low rents, and by defaults in payments by tenants many of whom were accused of illegally re-renting their flats (Claramunt 1934; Tatjer 2001). Landlords explicitly resisted to the installation of individual meters per flat and supported instead the cistern system with a general meter per building, which implied that water was still included in the rent (*La Vanguardia* 1932). The new municipal order could not stop the existence of rents with low water provision. Tenants had to claim their rights to minimum supply during the first six months of the lease; otherwise the existing fixed quantity was maintained. Poorer households, in particular, could easily accept low water supplies if, at least, rents were not increased (Martín Pascual 2009). Hence, the municipal order of 1930 failed to fulfill many of its expectations. Besides, the municipality did not invest enough in supply mains and in sewer systems and left many of those in the hands of private companies which, in turn, tended to concentrate investments in the more affluent neighborhoods able to pay for the services provided (Tatjer 2001).

#### **4. Revolutionary times: The SGAB under the control of its workers**

On 18 July 1936, the military coup led by Francisco Franco marked the beginning of reactionary or revolutionary periods in Spain depending on whether the coup had succeeded or failed. In Catalonia, one of the strongholds of the Spanish left, anarchist and socialist trade unions and political parties came to control the regional government and engaged in a deep transformation of the economic and social life including the collectivization of agricultural, and industrial activities (Amsden 1978; Breitbart 1978b; Garcia-Ramon 1978). Spain was the only country in the world, in the twentieth century where “anarcho-communism and anarcho-syndicalism were adopted extensively as revolutionary theories and practices in urban and rural areas” (Breitbart 1978a:60).

On 24 July 1936, the SGAB became seized by its workers and soon thereafter new management actions addressed to improve the efficiency of the system were announced<sup>1</sup>. First, the water price was unified into a single tariff for the entire city (40 cents of a peseta per cubic meter). As said before, up until then, prices varied according to location, customs, historical reasons, etc. and oscillated between 35 cents and 1.5 pesetas. Second, the fixed payment per meter was abolished and owners of flats and houses would be forced to buy and install their own meters. This installation of meters can be seen as an example of increasing the efficiency of the system and had been insistently proposed by hygienists in the previous years. Third, the water bill was split between the landlord who would pay a fixed fee based on the minimum consumption set by the municipal health service, and the tenant who would pay consumption in excess of that minimum amount. All minimums were to be revised according to the number of rooms and water points. In those cases where the 1930 law was not complied with, the amount of water delivered to the flat was automatically increased. The economic logic behind this decision was that the increase in the amount of water sold would compensate for the lower prices both for housing depending on cisterns and housing already metered. The problem was that, with the revolution and the flight of many landowners, tenants stopped to pay the rents altogether and subsequently, company revenues declined sharply. Hence the renewed interest in collecting water fees separated from rents<sup>2</sup>.

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<sup>1</sup> Regional Government to SGAB workers committee, 24 September 1936, box 7.373, Arxiu General Aigües de Barcelona (AGAB).

<sup>2</sup> Workers committee to Regional Government, 31 May 1937, box 7.374, AGAB.



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Another important reform was the termination of all water contracts enjoyed by some households in perpetuity. These contracts had been established in the late 19<sup>th</sup> century after one-time payments that granted a fixed amount of water forever (Martín Pascual 2007). They represented not only an old privilege, symbol of previous times, but also an obstacle to hygienic modernization, because the fixed provision of water impeded further sanitation improvements. Some of these contracts were reestablished after the war but the company always insisted in cancelling them which it finally achieved in the 1980s<sup>3</sup>. This represents a perfect example of how the company tended to suppress (efficient) reforms made in the revolutionary period only if explicitly asked by customers.

The new SGAB also undertook some actions to increase its control of all water supplies in Barcelona. For example, in the working class neighborhood of the Trinitat (North-East of the city), a private water vendor sold water from a nearby spring. After the breakup of the war the anarchist neighborhood association took over the spring and transferred its ownership to the SGAB. In return the company installed piped water in many houses thus increasing the number of customers<sup>4</sup>.

Perhaps the most important objective of the collectivized company was to improve access to water in sufficient quantities and qualities. Hygienist discourses had been very influential in the urban expansion plan of 1859 or in the sanitary projects of Garcia Faria (1893) but they were also central to many anarchist thinkers (Masjuan 1998, 2000; Tatjer 2001). The collectivized SGAB reunited this tradition together with the aspirations in the improvement of living conditions that fueled the rent strike. It is interesting to contrast this interest in hygiene, one of many aspirations of the anarchist working class, with opinions on the Francoist side. Talking to the foreign press, Captain Aguilera, an aristocrat and big landowner from Salamanca, expressed very peculiar ideas about water sanitation and its influence in the origins of the Spanish Civil War (Preston 2006:219):

“Sewers caused all our troubles. The masses in this country are not like your Americans, nor even like the British. They are slave stock. They are good for nothing but slaves and only when

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<sup>3</sup> Interview B: 20 July 2011, Barcelona.

<sup>4</sup> Subcomité de Defensa Barriada “19 de Julio” to SGAB workers committee, 8 February 1937, and Dionisio Delso to SGAB workers committee, 2 November 1937, box 7375 AGAB.

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they are used as slaves are they happy. But we, the decent people, made the mistake of giving them modern housing in the cities where we have our factories. We put sewers in these cities, sewers which extend right down to the workers' quarters. Not content with the work of God, we thus interfere with His will. The result is that the slave stock increases. Had we no sewers in Madrid, Barcelona and Bilbao, all these Red leaders would have died in their infancy instead of exciting the rabble and causing good Spanish blood to flow. When the war is over, we should destroy the sewers. The perfect birth control for Spain is the birth control God intended us to have. Sewers are a luxury to be reserved for those who deserve them, the leaders of Spain, not the slave stock."

The workers committee of the SGAB openly pursued the unilateral implementation of the 1930 local ordinance mentioned before. In early 1937, they calculated that water consumption in Barcelona had already increased by some 10,000 cubic meters since the beginning of the war, and estimated that reserves were sufficient to double that figure (*Solidaridad Obrera* 1937). One particular objective was to improve water supply in certain working class neighborhoods that consumed as little as 30 liters per person per day. Nevertheless and despite the increase in water supplied, non-payments rose by 50 per cent in the early months of the war. When the Regional Government ruled the temporal suspension of rent payments, unpaid bills rose to more than 80 percent of the total<sup>5</sup>. In addition, company workers were increasingly drafted for the Republican army and those staying had to work longer hours. Still, later in 1937 works on the wells and pumps of the Llobregat aquifer were finished, implying an important increase in the water extracted (Ferret 1985). Other important tasks such as the salinity control of the Llobregat were also pursued at the same time that the company made donations to sustain the war effort, constructed air raid shelters and opened up a school for the children of its 800 workers (*La Vanguardia* 1936a, 1936b, 1937a, 1937b, 1937c, 1937d, 1937e, 1937f, 1938a, 1938b; Rivas 1997; Sociedad General de Aguas de Barcelona 1939). Many years before it was finally achieved, the workers committee also attempted to bring the city of Barcelona and neighboring industrial towns such as Sabadell and Terrassa into a single supply system. This way they explicitly aimed to intervene in the local conflicts that water provisions controlled by industrialists and landlords provoked in the region (Masjuan 2007; *Solidaridad Obrera* 1937; see also Otero et al 2011 for the historical analysis of an example of such conflicts in the town of Matadepera).

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<sup>5</sup> Workers committee to Regional Government, 31 May 1937, box 7.374, AGAB.

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The workers committee of the SGAB appealed for public support to their reform policies which also included the construction of public fountains and swimming pools. Again, hygienist discourses were central to Committee policy and served also to criticize religious attitudes towards water (*Solidaridad Obrera* 1937):

“During the last 20 centuries, the most terrible enemy of water has been Catholicism. Those admirable stubborn people from the Rome catacombs, conspiring against a world of pools and public baths, were the precursors of a sad civilization ruled by the pious and the prudish, who inoculated into people the hate towards physical contact of the human flesh with water, air and light, as the highest moral idea” (our translation)

In fact, in many of the churches reconverted into warehouses and parking places a water meter was installed. Also many of the newly collectivized companies devoted themselves to the improvement of the working conditions. Among other actions, this included the installation of showers and other water-using facilities which in turn meant an increase in water consumption<sup>6</sup> (Serra and Serra 2003).

### 5. Very difficult years: 1938 and early 1939

*I do not at all underrate the severity of the ordeal which lies before us; but I believe our countrymen will show themselves capable of standing up to it, like the brave men of Barcelona*

Winston Churchill, speech to the House of Commons, 18 June 1940<sup>7</sup>

Between March and April 1938, Francoist troops entered Catalonia from the West and captured the Pyrenean reservoirs that supplied electricity to Barcelona. The effects of this interruption in supply were devastating for the Catalan industry (Bricall 1970). The old power plants generating electricity from coal had to reopen again under very precarious conditions. First electricity, and then water, became more and more scarce. The city council even had to put armed guards near the public fountains in order to avoid excessive withdrawals addressed to irrigate private orchards growing around the

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<sup>6</sup> See Anglo-Española de Electricidad E.C. to Aguas de Barcelona E.C., 5 August 1937, box 7375, AGAB; Regional Government to Aguas de Barcelona E.C., 2 February 1938, box 7377, AGAB; Almacenes El Barato E.C. to SGAB workers committee, 3 June 1938, box 7377, AGAB.

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city<sup>8</sup>. The workers committee of the SGAB had warned the city council about the necessity of supplying electricity to several neighborhoods located in higher terrains in order to facilitate the pumping of water and thus the continuity of supply<sup>9</sup>. But the council proved unable to obtain the engines needed. Another important problem was the lack of chlorine needed to purify the water supply which could only be obtained through numerous appeals to the Republican Ministry of Defense and never in the appropriate quantities<sup>10</sup>.

The worst problem during these months, however, was the intensification of air raids over the city which in January 1938 alone caused more deaths and destruction than in all the year 1937 (Memorial Democràtic 2008). Such harassment in a rearguard city was unprecedented, and spread demoralization, causing the flight of part of the population (Solé and Villarroya 1986). As far as water supply was concerned, bombing implied a string of malfunctioning cases, water leaks, drops in water pressure, etc. that complicated enormously the continuity of supply and contributed to the deterioration of the network. The correspondence of the company shows also numerous petitions for cutting the supply in buildings that had been destroyed or evacuated; and a hectic activity related to the petitions of citizens committees asking for pipe diversions and installation of electrical equipment for many of the hundreds of underground shelters that were made. Some SGAB workers were injured while performing their duties under the air raids of 17-19 March 1938 that caused nearly a thousand dead in the city<sup>11</sup>. The company had also to fight hard to void electricity cutoffs at night and to obtain the necessary replacements for materials lost<sup>12</sup>. Moreover, as mentioned before, it had to reopen the old steam engines in the Cornellà aquifer which used expensive coal and were extremely inefficient. Finally, illegal tapping of the network had become such a

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<sup>7</sup> “War situation”, House of Commons Debate, 18 June 1940. [http://hansard.millbanksystems.com/commons/1940/jun/18/war-situation#column\\_51](http://hansard.millbanksystems.com/commons/1940/jun/18/war-situation#column_51) (last accessed 22 July 2011).

<sup>8</sup> Barcelona City Council proceedings, book 400, 6 April 1938, Arxiu Municipal Contemporani de l’Ajuntament de Barcelona (AMC).

<sup>9</sup> Barcelona City Council proceedings, book 400, 31 March 1938, AMC.

<sup>10</sup> Aguas de Barcelona E.C. to Regional Government, 25 October and 13 December 1937, box 7374, AGAB; Regional Government to Aguas de Barcelona E.C., 23 December 1937, box 7375, AGAB; Ministry of Defence to Aguas de Barcelona E.C. 16 January 1938, box 7378, AGAB; Aguas de Barcelona E.C. to Ministry of Defence, 3 February 1938, box 7378, AGAB; Regional Government to Aguas de Barcelona E.C., 17 February 1938, box 7377, AGAB; Aguas de Barcelona E.C. to Regional Government, 19 February 1938, box 7378, AGAB.

<sup>11</sup> Aguas de Barcelona E.C. to Mutua General de Seguros, 23 July 1938, box 7378, AGAB.

<sup>12</sup> Interview A: two-part interview. A-1: 5 March 2009, Barcelona.

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problem that the authorities had to intervene. Towards the end of April 1938 a ban was imposed on superfluous uses and water had to be reserved for personal hygiene and food preparation (Generalitat de Catalunya 1938a). Arguing the large increase in costs, the company was authorized in June to raise the price of water to 70 cents per cubic meter or almost twice the price set in September 1936 (Generalitat de Catalunya 1938b). Unlike energy companies, the SGAB was not nationalized by the Republican authorities and remained under workers management until the end of the war. It is true, however, that after the progressive loss of political influence by the CNT, workers meetings to decide management issues gave way to a permanent direction responsible for technical and administrative issues (Gorostiza 2009; *Luz y Fuerza* 1937b, 1938).

The company faced other problems such as the mandatory draft of many of their employees for the Republican Army which resulted in fewer staff available to perform repairs and maintenance of the old steam engines, which only a few experts had the skills to command. Moreover, more than 300,000 refugees roamed in the city suffering worsening living conditions as war progressed (Serrallonga 2004). As a result of all these circumstances, in 1939 deaths by typhoid fever would reach the highest numbers since the deadly epidemic of 1914 (Conillera 1991).

### 6. Defeat

On 26 January 1939, Francoist troops occupied Barcelona. The company was rapidly returned to its original owners who in turn thanked the Army by providing land and paying for a luxurious residence for single army officers (*La Vanguardia* 1939; Sociedad General de Aguas 1939). Its high cost was charged to the SGAB corporate accounts. The poor state of the machinery and the network was attributed to the incompetence and greed of the so-called “reds” (Sociedad General de Aguas 1939) with no mention of the heavy damages inflicted to the network by bombing.

Despite all problems, the company reassumed its activities and achieved very significant benefits already in its first year of operation after the war (Sociedad General de Aguas de Barcelona 1940). Soler Nolla, General Manager of SGAB between 1934 and 1960, privately claimed years later that “we were lucky that, overall, the red period

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only cost us a few million pesetas”<sup>13</sup>. For obvious political reasons, Soler Nolla could not admit that the company had pursued sound policies during the collectivization years that would prove adequate for the future. When retiring in 1960, Soler Nolla, also in a private letter, conceded that the unification of tariffs free of conflicts and protests implied an increase in revenue for the company of several million pesetas.

Nevertheless, perhaps the most important change, also quietly accepted after the war, was the general increase of minimum quantities of water per flat. Despite the dramatic circumstances of the period, by 1939 water supplied to the city increased by a significant 15 percent and the extractions from Cornellà wells by 30 percent<sup>14</sup> (Ferret 1985). The unilateral increase in supply decided by the workers committee obeyed to the inability by landlords and the local administration to ensure healthy conditions in working class households. After 1939, management complained about the disorder found, including many minimum provisions that had been increased by the “reds”; and landlords complained also that these minima were used as basis to calculate water bills. Despite the radical rhetoric of the company’s managers—for whom the revolutionary period “had not existed” and thus rejected to charge for bills previous to January 1939—the minimum compulsory thresholds of water supply set during the war were not changed after the conflict (unless being explicitly told to do so). Something similar can be argued about the perpetuity contracts. Their almost complete disappearance was not reached until the 1980s<sup>15</sup>. However, after the war, not all the contracts were to be claimed by its beneficiaries. And the SGAB, of course, had no interest in reestablishing contracts that granted no income. Finally, in 1939 the SGAB could also benefit from the takeover of smaller companies that still supplied water to certain city neighborhoods and that were not returned to their original owners. That the company was generally satisfied with the management of the revolutionary years is also proven by the rehabilitation (including retirement pensions) of some workers purged by fascist authorities (Rivas 1997)<sup>16</sup>.

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<sup>13</sup> Soler Nolla to Garí Gimeno, 31 December 1960. When he retired, Soler Nolla’s son brought a copy of this letter to the Associació de Treballadors d’Aigües de Barcelona, which kindly granted us a copy.

<sup>14</sup> Aguas de Barcelona E.C. to the City Council, 31 March 1938, box 7378, AGAB.

<sup>15</sup> Interview B: 20 July 2011, Barcelona.

<sup>16</sup> Interview A: two-part interview. A-2: 29 April 2009, Barcelona.

## **7. Conclusion**

*Water running through your pipes is like  
blood running through our veins: Life*

Advert by Aguas de Barcelona, Empresa Colectivizada (*Luz y Fuerza* 1937a)

Reformist policies, be these the implementation of European Directives or the rationalization of water supply in cities, may be sometimes difficult to implement because of the resistance of vested interests opposed to proposals that only attempt to improve the performance of socially and environmentally unsustainable systems. In this paper we have presented the case of the Barcelona Water Company (SGAB) and its collectivization during the Spanish Civil War. Our aim has been to show how favorable political and social conditions allowed for the adoption of certain policies that did not have any revolutionary content but that, in some cases, such as the Municipal Order on Public Health by the Barcelona City Council, had been approved in times of social and political conservatism. Thus water management in Barcelona during the war was primarily oriented to increase water consumption in the working class neighborhoods of Barcelona after the hygienist ideals so appreciated by Anarchism in the first third of the 20<sup>th</sup> century. The Workers Committee also sought to establish a unified tariff in order to increase efficiency in revenues, although it had to withdraw this decision because many defaults in payments. Most remarkably, under workers management, the company could satisfy the supply of water without major problems until April 1938 when the hydropower plants of the Pyrenees were taken by the Franco troops. The following months, however, saw a rapid deterioration of supply given the difficulties in finding basic inputs, the precariousness of alternative power sources, and the heavy damages inflicted by air raids over Barcelona. In January 1939 the revolutionary experiment came to an abrupt halt when Francoist troops entered Barcelona. The SGAB was rapidly returned to the original owners who saw how many of their management objectives that could not be reached before the war had been accomplished by the Workers Committee.

The control of the SGAB by its workers was a brief experience carried out initially in a context of weak state power. Despite these exceptional circumstances, it is significant that management reforms implemented during wartime were acknowledged by the former owners of the company and partly maintained after the war. Before becoming

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overshadowed by the proximity of the war fronts in 1938, these changes in management were more related to the previous fifty years of debates on water access than with wartime constraints, and many of the issues that had to be dealt with in 1936 reappear today under other circumstances. Thus problems such as the high salt content of the Llobregat River, the consideration of standards of minimum consumption at affordable prices, the penalties for excessive use or the definition of water as a “basic” good still remain at the core of current debates surrounding this resource in the Barcelona area.



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RESEARCH ARTICLE II

“Urban ecology under fire”: Water supply in Madrid during the  
Spanish Civil War (1936–1939)



Figure 1: Book cover of *Canales del Lozoya* (1937), *Aportación a la guerra*.

Source: Canal de Isabel II library.

Paper published in *Antipode*, March 2015, Volume 47, Issue 2, pp. 360–379.

## “Urban Ecology Under Fire”: Water Supply in Madrid During the Spanish Civil War (1936–1939)

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**Abstract:** This paper investigates the critical role of workers to enhance the resilience of water supply services in cities at war through analyzing the case of Madrid and the Madrid water company Canales del Lozoya during the Spanish Civil War (1936–1939). We argue that securing the protection of vital urban flows mediated through infrastructures is a key objective of cities under attack. In doing so we contend that examining how those affected by the interruption of these flows cope with the situation represents a valuable but largely neglected form of water management. We illustrate how quotidian knowledge about the urban geography of water flows may have important repercussions for the war effort itself. In a nutshell, the case of Madrid offers an early account of the critical role of water workers in sustaining “urban ecologies under fire” securing the complex urban metabolism while also contributing to the struggle against invading forces.

**Keywords:** urban water management, infrastructure disruptions, Urban Political Ecology, Spanish Civil War, Madrid

### Introduction

After Madrid’s terrorist attacks on 11 March 2004, Canal de Isabel II, the city’s public water company, ceased to hand out a detailed map of its water supply system included as part of educational materials. The fear of new attacks made apparent the relevance of information about water treatment plants, city reservoirs and pumping stations, and how critical this information could become in the case of terrorist threats. After the bombings, several military units were deployed next to Madrid’s reservoirs. Their mission was to watch the facilities and networks that guaranteed the water supply of the Spanish capital, as well as to control the water quality, as there were concerns that stored water could be poisoned (*La Razón* 2004). However, when some years later, during the hot summer of 2010, works to improve the Madrid water infrastructure unveiled an artillery shell buried near one of the city’s water reservoirs, this was not a recently planted explosive device but an unexploded projectile dating from the Spanish Civil War (1936–1939) (*ABC* 2010). The shell was

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## **1. Introduction**

After Madrid’s terrorist attacks on 11 March 2004, Canal de Isabel II, the city’s public water company, ceased to hand out a detailed map of its water supply system included as part of educational materials. The fear of new attacks made apparent the relevance of information about water treatment plants, city reservoirs and pumping stations, and how critical this information could become in the case of terrorist threats. After the bombings, several military units were deployed next to Madrid’s reservoirs. Their mission was to watch the facilities and networks that guaranteed the water supply of the Spanish capital, as well as to control the water quality, as there were concerns that stored water could be poisoned (*La Razón* 2004). However, when some years later, during the hot summer of 2010, works to improve the Madrid water infrastructure unveiled an artillery shell buried near one of the city’s water reservoirs, this was not a recently planted explosive device but an unexploded projectile dating from the Spanish Civil War (1936-1939) (*ABC* 2010). The shell was a harsh reminder of the difficult situation that the city had gone through during the conflict, when it experienced a siege of almost three years and became the first major city in Europe to suffer continuous aerial and artillery attacks. In both cases, news did not reach the front page of the press nor did they receive large attention from other media. Despite the 68 years between the Spanish Civil War and the 2004 Madrid terrorist bombings, both episodes suggest the central role of water companies and infrastructures in ensuring the continuity of the water flow to cities during terrorist incidents or periods of violent conflict. Along these lines, this article examines the provision of water in the besieged Madrid of the Spanish Civil War (1936-39) by Canales del Lozoya (historically known as Canal de Isabel II), the public utility company in charge of serving water to the city since the mid-1850s<sup>1</sup>.

Water is the lifeblood of cities and one of the basic flows circulating underneath and through the urban environment (Gandy 2002; Swyngedouw 2004). As Maria Kaika argues (2005), these flows, mediated through urban infrastructure (Graham, 2009a; Monstadt 2009), may narrate many interrelated tales of the city, unveiling the complex workings of city’s metabolism and the (hidden) power relations that sustain it. In that sense, the control of water in large human agglomerations represents a key for the

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control of city life and of citizen’s lives (Loftus 2012). Not surprisingly, in case of armed conflict, water becomes a precious resource coveted by all sides in order to gain advantage in the struggle for the final control of the urban environment. To take one of the most recent examples, in Syria, inadvertently or not, water supply mains and pipes of cities such as Aleppo and Homs have been heavily damaged in recent combats, while Syrian rebels celebrated in February 2013 the capture of the Al-Furat dam on the Euphrates River. This dam holds the largest reservoir in the country and stands as a key asset for water supply, irrigation, and electricity production as well as a symbol of power status for the Syrian elite (*Huffington Post* 2013).

Blocking access to water and interrupting this vital urban flow is an example of what Kenneth Hewitt calls “levels of damage that can overwhelm whole communities or cripple aspects of everyday life” (Hewitt 1997:5). Responsible for the edition of a book that marked a turning point in Hazard Geography (Hewitt 1983a) Hewitt also extended the hazard field from natural phenomena into the realms of armed conflict and genocide (Hewitt 1997). In particular he draws attention to the unique characteristic of cities as both “engines” of growth and innovation and at the same time especially vulnerable to destruction by natural, technological or armed forces (Hewitt 1997:293). He illustrates this assertion with a number of natural, technological and social ills including a very innovative geographical analysis of air warfare during World War II (Hewitt 1983b, 1987, 1994). As Hewitt put it, the metabolism of cities was heavily disrupted by air raids, turning cities into spaces of “urban ecology under fire” (Hewitt 1983b:272). Similarly, Mark Pelling (2003) has emphasized the vulnerability of cities to natural disasters but he has also argued that “civic resilience”, may upset disruption and loss.

The social geography of bombing illustrates how those suffering and indeed those already disadvantaged in everyday life (children, the elderly, and the poor) are the same that also suffer the most in any other calamity. But Hewitt is also adamant about the active actions undertaken by those experiencing the hazard. In this sense, examining how those affected by external menaces cope and respond to these threats merits attention. Coping usually involves individual and collective deployment of knowledge and resources to minimize the effects of the hazard, and it is interesting to study specific experiences of individuals, groups or institutions in this regard. The importance of

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<sup>1</sup> Historically the water company has been known as Canal de Isabel II. The name Canales del Lozoya

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cities’ complex response and adaptive capacity to urban disasters such as air raids has also been highlighted by Konvitz (1990). Analyzing the impact of bombings in urban agglomerations during World War II and the Vietnam War, Konvitz underlined that the socioeconomic disruption suffered by cities was not proportional to the rates of physical destruction experienced. War strategists had mistakenly considered cities and their infrastructures simply as technological systems, neglecting their social dimensions. Despite the importance of human agency, Konvitz asserted that the “myth of terrible urban vulnerability” continued alive (1990:62).

Following this perspective, in examining the city’s response to emergency situations such as those provoked by a major aerial attack the role of civil defense and of particular professionals such as firemen is indeed fundamental. However, individuals and neighborhood groups also contribute substantially to the coping effort. Perhaps less examined has been the role of the personnel of public or private utilities in the response to hazard. Water, gas and electricity companies, in particular, are also active participants in hazard management, ensuring the maximum possible robustness of their distribution systems as well as the rapid recovery of these systems in case of impairment or destruction. The technical characteristics of the utility as well as the organizational and managerial skills of utilities’ staff are therefore basic during periods of severe urban stress.

Another important contribution to be made by staff members of utility companies concerns a profound knowledge of the geography of cities also basic for hazard management. In the case of armed conflict, geographical knowledge has been long recognized as a fundamental asset not only to decide specific places for launching an attack or establishing a defense line but also to maximize damages to the enemy.

Geographical knowledge also acquires an especially relevant position when utility companies in besieged cities have to ensure the supply of vital resources such as water and energy in quantities and qualities amenable for human consumption. In the case of water, for instance, increasingly complex and distant supply storage points and network facilities require complex technical and managerial skills able to ensure security and quality of service. And this task is not possible without a deep knowledge of the

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was just adopted during the Second Spanish Republic (1931-1939).

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geography of the built environment (including the underground environment) and of the water supply areas. Again, managers and workers appear as key actors in this respect.

All the themes and issues mentioned deserve, in our opinion, more research efforts able to capture the complex resource and hazard geographies of cities under severe stress. Shedding more light on the provision of water by Canales del Lozoya in the besieged Madrid of the Spanish Civil War (1936-39) may contribute to such a task. Critical analyses on urban infrastructures, especially the work of Stephen Graham (see for instance Graham 2009a), suggest that in periods of crisis and disruption the modern fetishism of urban infrastructure is challenged (see also Kaika 2005 and Kaika and Swyngedouw 2000). Those analyses, however, may not emphasize enough the central role of human labor, and more specifically worker’s knowledge and practical acts, in sustaining and making resilient the complex urban metabolism. Thus, our main aim is to investigate how the water company and especially its personnel coped with aerial and artillery bombing of the city to avoid major disruptions in the water supply, especially during the early months of the war. To do so we briefly explore the sociopolitical aspects that shaped Madrid’s publicly owned water company and infrastructure since its establishment in the 19<sup>th</sup> century. All these aspects were of the utmost importance to explain the success in maintaining operational the water supply of the city during the war. Unlike Barcelona, which was never on the front line, Madrid was able to keep water-related epidemics under control and after some months could even rule out water restrictions. Moreover, the control of water supply by the skilled and committed staff of Canales del Lozoya produced the rather paradoxical situation of water scarcity among the attacking Francoist troops during the most critical moments of the conflict, and also a peculiar form of urban warfare using the underground water infrastructure of the city. Applying to war their knowledge and control of city’s water flows, Republican units were able to selectively cut water access to besieging units. Contrary to what would be the case of most besieged cities, in Madrid the water company played a leading role in using their mastery over water flows as a defensive element.

The Madrid case study may be relevant for political and hazard Geography as well as Urban Political Ecology in several ways. First it offers an account on the response to a major hazard focusing especially on the role of one agent, the utility company and its personnel, only occasionally present in studies on response to and management of major hazards. Second, it shows how well organized, well-staffed and well equipped

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organizations may cope with large disturbing events with relative success. By doing so we demonstrate how urban infrastructure, and more specifically the sustaining of “an urban ecology under fire” deeply relies on the acts and knowledge of workers, a theme rarely emphasized in Urban Political Ecology.

Our narrative relies on a document censored by the Republican authorities during the Spanish Civil War, originally a book chapter of *Gestión de la Delegación del Gobierno de la República durante 1936*<sup>2</sup> (Torres Campaña 1937). We combine this archival primary source with other primary sources from the *Archivo General Militar de Ávila* and concerning the leading characters involved in underground warfare – and water management – on both sides of the Battle of Madrid<sup>3</sup>. Additionally, we have consulted official annual reports and bulletins published by Madrid water company at the Canal de Isabel II library.

The article is organized as follows. In the first section we present the problematic of urban water supply in the context of armed conflict drawing mainly but not only on experiences of World War II. The second section provides some background on the history of water supply in Madrid before the war emphasizing the critical importance given to this resource to the point that water in Madrid was a state matter. This may also help explain the noteworthy competence of engineers and planners of the public company Canal de Isabel II (renamed Canales del Lozoya during the Republican period). In the third section we give an account of the struggle for the control of the reservoirs serving Madrid in the first days of the war. Subsequently we move to the so-called Battle of Madrid (November-December 1936) in which the main area of struggle with the rebel troops took place just hundreds of meters from the location of the urban water reservoirs. The Madrid front moved little from January 1937 to the final days of the Civil war in March 1939 but, despite the growing number of refugees in the city and

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<sup>2</sup> “Ante la sublevación. Capítulo III”, AAVV-AMTC-149-56, Fundación Pablo Iglesias Archive, Madrid. The book was published but stated openly that the first part of the third chapter, regarding the defense of the reservoirs, piping and city water reservoirs couldn’t be included because of military censorship (Torres Campaña 1937:445). It was also asserted that five typewritten copies had been produced and distributed. One of them is the copy conserved in Fundación Pablo Iglesias, belonging to the collections donated by Torres Campaña’s widow. References made to the book through the present paper refer to this previously unpublished chapter as well.

<sup>3</sup> On the Francoist side, we rely on the personal military record of General Juan Petirena Aurrecoechea, consulted at *Archivo General Militar de Segovia*. On the Republican side, access to personal documents of the Republican engineer of Canales del Lozoya, Federico Molero, was kindly granted by his son-in-law. More specifically, the document used is a letter by Federico Molero, signed in Moscow on 1 December 1966.



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the deterioration of the supply of food and energy, water continued to be provided. Moreover, during this time, the company undertook some managerial reforms that would prove relevant after the Francoist victory of 1939. Finally, in the conclusions we point at the relevance of the Madrid case for resource management practices under war conditions in the context of the current interest for the environmental consequences of war in a variety of geographical and historical settings.

### 2. War, water and cities: a brief account

Armed conflict, local or general, continues to attract a broad interest of resource and environmental historians and geographers (see for example Brady 2005; Clossman 2009; Gregory 2011; Hupy 2008; Le Billon 2001; McNeill 2008; McNeill and Unger 2010; Pearson 2008; Tucker and Russell 2004). Despite the growing literature assessing the environmental histories of war, in the case of conflicts with an important urban dimension specific practices of urban resource management remain insufficiently examined. These practices represent a unique opportunity to study and assess the complex relationships established between public services and large human agglomerations in periods of acute social and environmental stress. Moreover, critical geographical literature on infrastructures has emphasized that moments of infrastructure failure –water, in our case– are “perhaps the most powerful way of really penetrating and problematizing those very normalities of flow and circulation” (Graham 2009a:3). In other words, it is under periods of severe stress when the complex workings that sustain the functioning of the city are illuminated. However, critical scholarship on infrastructure, and more specifically Urban Political Ecology, may have not emphasized enough the critical role of workers in sustaining such a complex urban metabolism.

Writing in 1966, John Bowyer already emphasized the permanence of siege as a form of war (Bowyer 2006). Recent insights from infrastructure geography have highlighted the relevance of infrastructural siege examining the military action of Israel in Gaza, while in Iraq one of the long-lasting consequences of the US bombings was the deterioration of the sanitation infrastructure and an acute increase in waterborne diseases (Graham 2009b). Other recent examples of water scarcity during wars include the NATO bombing of Belgrade with graphite bombs in 1999 (*El País* 1999) or the siege of Grozni in the 1990s, the latter described by Anna Politkovskaya (2008).

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Although more in a rural than an urban context, in the mid-1970s, strategic air raids also raised the attention of the geographer Yves Lacoste. In contact with the Russell Tribunal on war crimes committed by the American military in Vietnam, Lacoste investigated the bombing of the dykes of the Red River in North Vietnam by American B-52s. He concluded that the bombing concentrated on the most exposed areas of the dyke system with the objective of flooding the densely occupied alluvial plain of the river and thus creating serious social and environmental disruption in North Vietnam (Lacoste 1973). From this specific case, Lacoste later developed his famous motto “Geography serves above all to make war” (Lacoste 1976, 2012), arguing that the knowledge at the disposal of the American Air Force of the peculiar geomorphology of the Red River fluvial plain became paramount in targeting specific locations for bombing. Lacoste’s contribution can be seen as a seminal precedent in the contemporary understanding of geography as operational and active component of war (Bowd and Clayton 2013).

World War II was the first major conflict in which urban water services in bombed cities suffered severe stress. The blitz over London and other large British cities, the terrible siege of Leningrad (with the systematic destruction of water and energy networks by German forces), and the capture by the Japanese army of reservoirs supplying Singapore forcing the surrender of the city in 1942 stand as early examples of the critical role of water flows for the citizens of these urban agglomerations. Later in the war and especially after the decision by Anglo-American forces to use massive bombing to demoralize urban populations in Germany and Japan, damages to urban infrastructure increased with devastating effects in places such as Hamburg, Dresden, Berlin or Tokyo. But water infrastructures were also the target and the scenario of direct fighting (as in Stalingrad or Warsaw) and knowledge about their networks and flows became thus critical for the control of the fighting grounds (Bowyer 2006, Hewitt 1983b, Jones 2008).

Kenneth Hewitt drew attention to the massive Allied bombings of German and Japanese cities during World War II (Hewitt 1983b). In the case of Germany, authorities had realized that air raids would damage water supply systems, and therefore constructed additional water tanks in order to facilitate the work of firefighters. Such preparations, however, were of relatively little use in front of the colossal bombing capacity deployed by Allied planes (Taylor 2004; US Department of Defense 1950). In the case of Japanese cities, the careful mapping preparation of the bombing took into account the

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infrastructures of water and energy supply (Fedman and Karacas 2012). The water storage capacity of Japanese cities was low and its water supply systems were considered weak and highly dependent on electrical pumping systems. Despite some exceptions, Japanese urban water supply was ill-prepared to confront a massive fire-bombing, and once electric power was knocked out, cities were left without defense against fires (US Department of Defense 1950).

All these episodes had a clear precedent in the Spanish Civil War. Even since the beginning of the conflict in July 1936, many international observers considered the Spanish conflict as the prelude of the global confrontation that would follow, and many facts seem to support such views. For instance and uncharacteristically with respect to previous conflicts, more than 50 per cent of the deceased during the Spanish Civil War were non-combatants whereas in World War I, for instance, only about a third (at the most) of the dead were civilians (Kramer 2007; Rodrigo 2009). Increasing civil casualties are explained to a large extent by the use of new weapons and strategic and tactical decisions regarding air warfare, especially the more or less indiscriminate bombing of cities. The destruction of the built environment became therefore an objective as the attacks on Madrid, Barcelona and other cities demonstrate. The case of Barcelona, shows also that when war stimulates sociopolitical change, urban services may change accordingly. During the conflict the Barcelona private water company serving the city was collectivized and management handed over the workers, who in turn introduced several important reforms in the line of enhancing equity but also efficiency in service (Gorostiza et al 2013). However, the destruction of the water supply networks in particular stood as especially problematic given the health effects of scarce and poor quality water on the urban population.

Although the episodes of London, Leningrad, Dresden or Tokyo, among many others, are much greater in magnitude, Madrid was the first city in Europe to suffer both continuous aerial and artillery attacks with tremendous impacts on the urban fabric (Bowyer 2006; Solé i Sabaté and Villarroya 2003). Madrid was also an early example of how workers and managers of the utility company responsible for water management acknowledged the strategic importance of the geography of the city's water supply and acted accordingly not only protecting sources and networks but also engaging in a particular form of underground war that would announce future episodes.

### **3. A matter of the National State. Madrid’s water supply between 1858 and 1936**

By the mid-19<sup>th</sup> century, the role of Madrid as the capital of Spain and the necessity to improve its water supply pushed the government to set in motion a Special Commission in charge of evaluating different options to increase the amount of water supplied to the city (Observatorio de los Servicios Públicos 2005). The creation of the Canal de Isabel II in 1851 marked the beginning of a new era for the water supply of Madrid. The “Canal” was above all a direct creation of the Spanish state to ensure that the Spanish capital would have its water supply adequately provided, after the failure of several previous private initiatives. In no other major Spanish city did the national state commit itself to such an objective. Immediately after the creation of the company, ample state funding allowed for the construction in 1858 of a high dam (Pontón de la Oliva) in the mountains north of Madrid together with a 77 kilometer long aqueduct which permitted the arrival of water to the city in generous quantities (Bonet Correa 2001; Canal de Isabel II 1954; March 2013; Martí Font 1858; Martínez Vázquez de Parga 2001; Pinto 2001; Revista de Obras Públicas 1858).

To keep pace with population growth triggered by the development of the *Ensanche* (urban development plan following a grid pattern) and the increase of living standards, a second dam to further regulate the Lozoya River was built in 1882 (El Villar). According to Rueda Laffond (1994), consumption per capita soared from barely 7 liters per person per day (lpd) in 1858 (just before the arrival of water from the Lozoya) to 221 lpd in 1905.

During the first years of the 20<sup>th</sup> century, the Canal improved both its technical and managerial scope including the possibility of having an independent budget, since until then all economic matters remained in the hands of central state finances. The highest authority of the Canal de Isabel II was always someone named by the Spanish government. In 1907 the company began an ambitious program of expansion and modernization. A new large water conduct (*Canal Transversal*) was built in order to improve water quality, until then quite problematic. In parallel, three elevated storage points had been constructed in Madrid by 1916. All these improvements, which not only increased quantity but perhaps more importantly quality as well, help to explain why between 1900 and 1920 water consumption in Madrid doubled (Rueda Laffond 1994).

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The Canal de Isabel II enlargement continued in the 20<sup>th</sup> century. More channels were built, and in 1925 the Puentes Viejas dam was completed (Bonet Correa 2001). Such improvements were meant to overcome droughts and waterborne diseases such as typhus, while assuring the supply for the city development that took form in the Plan de Extensión (1933) and in the Plan Regional de Madrid (Regional plan of Madrid) (1939) (Gea Ortigas 2002; VVAA 2002).

To illustrate the argument that Madrid water supply was a Spanish national matter we can contrast the situation of this city with that of Barcelona. During the first decades of the 20<sup>th</sup> century the situation of the water supply of Madrid and Barcelona stood in sharp contrast. While experts regarded the capital’s water supply as excellent, Barcelona fared poorly in comparison (Maluquer i Salvador 1920). Between 1900 and 1930, the population of Madrid doubled to attain 900,000 people and the provision of water was able to match this rhythm, boosting from 171 liters/capita/day (lpd) of 1911 to 288 lpd in 1928. This much improved situation contrasted vividly with the case of Barcelona whose population had increased in a similar fashion. Around 1930, for instance, mortality rate from typhoid fever in Madrid was 13.7/100,000 people or half the rate recorded in Barcelona, which had a provision of only 107 lpd (Claramunt 1933; March 2010, 2013; Martínez Vázquez de Parga 2001; Pinto 2001; Rueda Laffond 1994).

With the proclamation of the Spanish Second Republic in 1931, the Canal de Isabel II was renamed Canales del Lozoya. The enhancement of water supply sources in the Sierra north of Madrid continued with the expansion of the Puentes Viejas dam and a new elevated urban reservoir in Plaza Castilla. In 1936, total water consumption in Madrid increased to 264,000 cubic meters per day –almost four times the quantity delivered in 1900– served and managed by an extremely competent organization. However, the technical and managerial skills responsible for the robustness of the Madrid water system would be tested after the beginning of the Spanish Civil War in July 1936 (Martínez Vázquez de Parga 2001; Pinto 2001; Torres Campañá 1937).

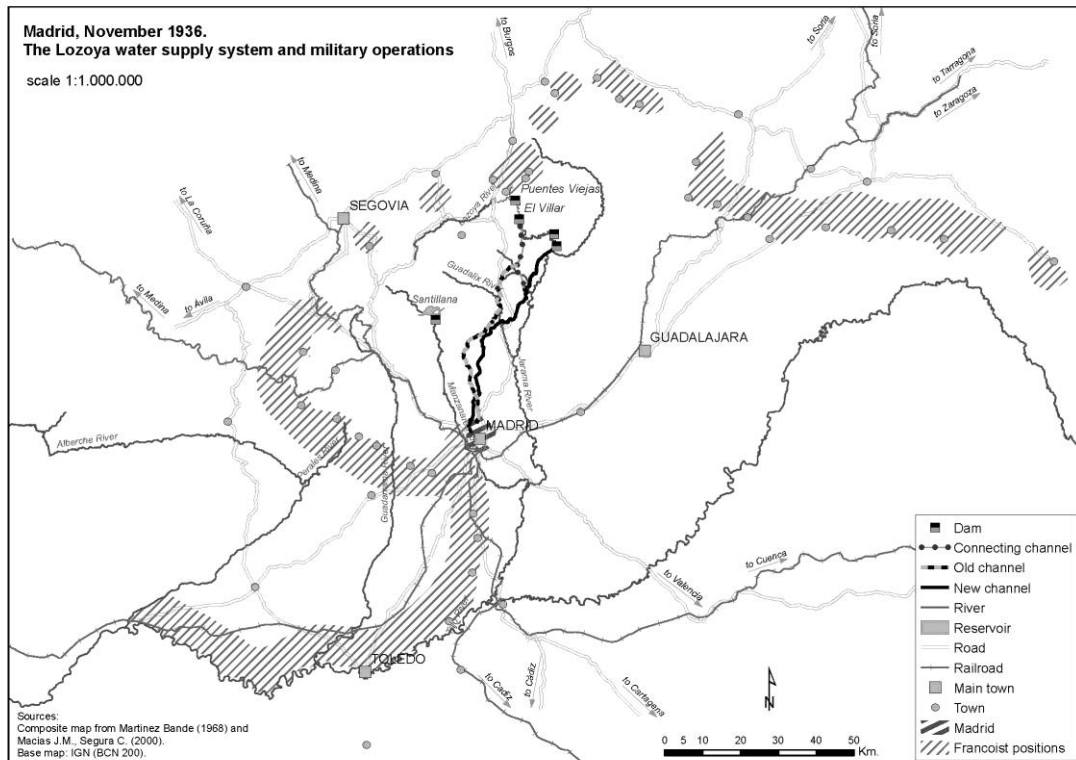
### **4. The outbreak of the war and the strategic role of the mountain reservoirs**

The 18 of July 1936 marks the beginning of the military revolt against the Spanish Republic which turned into a bloody civil war lasting until April 1939 with the victory of General Franco. The coup was originally designed for military units in the capital of

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each province to seize the power and eliminate all political resistance at whatever cost. In Madrid and due to poor coordination, the coup failed, but in the northern provinces of Castilla La Vieja, a right wing stronghold, the military seized the main cities without much struggle. Rebel troops were subsequently directed towards the mountain passes that led to Madrid and a fierce struggle took place between the 24 and 25 July 1936 in the Sierra north of the capital. Loyalist elements were forced to withdraw towards the city leaving unprotected the reservoirs in the Lozoya River (Puentes Viejas and El Villar). Both reservoirs were critical for the water supply of Madrid. A rapid reaction by the governmental delegate in Canales del Lozoya, urging Republican forces to move ahead of the reservoirs and establish a new defense perimeter, was successful and thwarted the insurrection plans (see Figure 2). This proved to be a providential decision because otherwise, with rebels gaining control of the reservoirs, Madrid’s water supply would have ended in the hands of Francoist troops. Fighting in the Sierra continued but the advance of the rebel army was contained. The Republican militias, with significant presence of workers from the water company, got hold of the reservoirs and the battlefronts became stable in the sector until the end of the war (Cortada 2012; Mera 2006; Montoliú 1999; Rojo 2010; Sanz García 2000; Salas Larrazábal 2006; Torres Campañá 1937).

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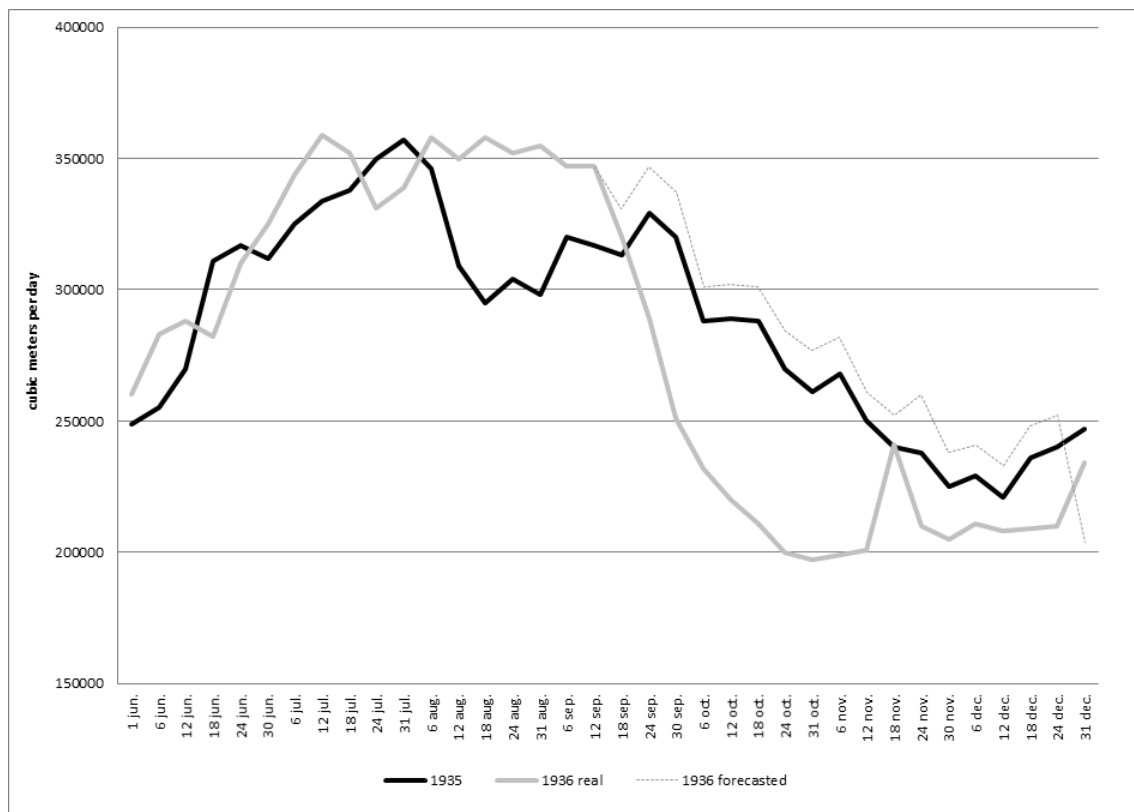


**Figure 2:** Madrid region, November 1936. The Lozoya water supply system and military operations. Sources: Own elaboration based on Macías and Segura 2000; Martínez Bande 1968.

As war approached Madrid, Canales del Lozoya underwent relevant organizational restructurings. Despite it was not collectivised, top down reform improved the workers' status in the company and granted them significant participation in the company board (*ABC* 1936c; *Boletín Oficial de los Canales del Lozoya* 1936). The renewed management soon had to deal with another pressing problem. The concentration of troops upstream of the Puentes Viejas reservoir increased pollution in this area and forced the shutdown of the transfer to El Villar. However this solution had to be temporary, otherwise Madrid would run out of water in a few weeks. Managers of the Canales del Lozoya were concerned by the vulnerability of the system and this concern grew when water consumption in Madrid rose in September, partly because of the influx of refugees arriving from the towns occupied by Franco's African army. Health authorities ordered a 500 percent increase in the chlorine doses used in water purification plants which helped to improve quality and prevent diseases. Moreover and in agreement with the city council of Madrid, restrictions were implemented and new plans for capturing water from other sources developed. Water restrictions consisted in

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interrupting street cleaning and public garden watering and the requirement to shut down water flows in private buildings at night. The company also launched press campaigns asking citizens to report leaks and other problems in the water conduits of Madrid (see for example *ABC* 1936a, 1936b, 1936d). All these actions succeeded in curtailing water consumption with respect to pre-war levels (see **Figure 3**). Little could be done however to fight rumors and the Francoist propaganda claiming that Madrid was running out of water very quickly (Bravo Morata 1985; Canales del Lozoya 1937; Sanz García 2000; Somoza 1944; Torres Campañá 1937; Vázquez and Valero 1978).



**Figure 3:** Water consumption and effects of water restrictions in Madrid, June – December 1935 and 1936. Source: Own elaboration based on Canales del Lozoya 1937.

By the end of October 1936, Madrid could look at their water supplies with some confidence. The reservoirs in the Sierra had been secured; the quality of their waters had improved after pollution was properly controlled, allowing for the reprisal of transfers and the use of water from all reservoirs. Chlorine was stored in large quantities and engineers developed proposals to bring water from the Manzanares and Jarama Rivers (south and west of the city) thus augmenting the supply sources (Bravo Morata 1985;



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Canales del Lozoya 1937; Sanz García 2000; Somoza 1944; Torres Campañá 1937). All these actions implied a partial lifting of the restrictions, but on the same day the decision was taken, an artillery shell killed a worker of Canales who was doing maintenance tasks in the center of Madrid (Boletín Oficial de los Canales del Lozoya 1936). Coming from the south of Spain, the Army of Africa had arrived and the siege of the Spanish capital was about to begin.

### 5. Urban warfare and water supply in the battle of Madrid (1936-37)

Aided by the planes provided by Italy and Germany, Franco’s African army set foot in Seville (Andalusia, south of Spain) in early August 1936, thus evading the Republican control of the strait of Gibraltar. During the following months the rebel army marched towards Madrid from Andalusia, making futile all attempts by loyalists’ troops to stop the progress towards the capital. By October Madrid was flooded with refugees and had begun to experience the first air raids. In early November, some 25,000 well equipped soldiers of the Spanish Foreign Legion and Moroccan troops (*Regulares*) reached the city from the South and started the assault, while the Republican government fled to eastern coastal city of Valencia. The arrival of Soviet military equipment and of volunteers of the International Brigades, however, boosted combat morale. Urban fighting in the city’s suburbs proved difficult for Francoist soldiers, who clashed with the dogged resistance of Republican militiamen. As Francoist attempts from the South did not succeed in breaking into Madrid, the following attacks concentrated in the Western sectors of the Casa de Campo and the new university campus (Ciudad Universitaria) where fierce fighting took place in November and December (see Figure 4) (Preston 2006).

The Battle of Madrid in late 1936 and early 1937, involved the mobilization of all the human and material resources the city could muster in order to resist the advancing Francoist troops. In this respect, with the fate of Madrid hanging on the balance, Canales del Lozoya contributed to the war effort in several ways. Human power and materials were mobilized as was critical logistic information about the sewer and water distribution networks of the city<sup>4</sup>. The control of such infrastructures was of tremendous importance in the urban fighting that ensued. Unable to penetrate Republican lines,

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<sup>4</sup> Letter signed by Federico Molero, Moscow, 1<sup>st</sup> December 1966.

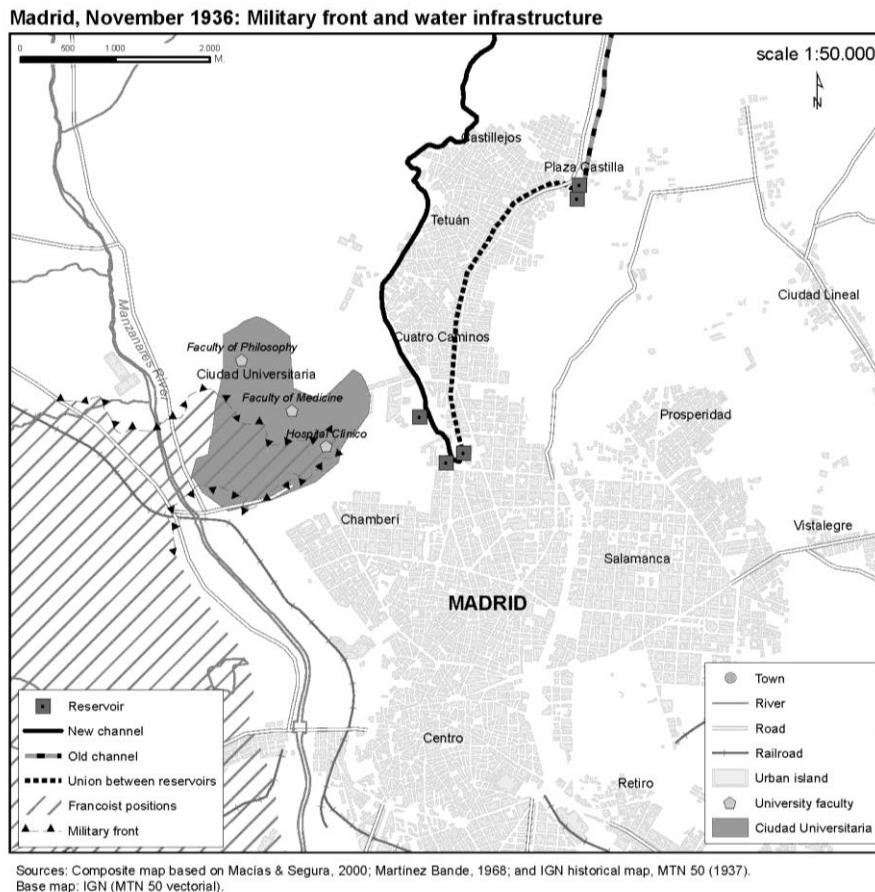
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Franco resorted to the newly established German Condor Legion to undertake systematic air raids on the capital. Fire-bombing techniques were used in the workers’ quarters and also damaged the Prado Museum, causing international outcry. Meanwhile Franco’s offensive from the west managed to cross the Manzanares River, set foot in the Ciudad Universitaria and captured the Hospital Clínico located on the top of a hill less than 1,000 meters from the urban water reservoirs of Canales del Lozoya. Bombing damaged gravely water supply pipes and leaks became widespread. Repair works by the Canales employees multiplied since water losses amounted to several thousands of cubic meters every day, drawing the water network close to collapse around November 18, coinciding with the major German air raid until the date (Bowyer 2006; Canales del Lozoya 1937; Preston 2006; Proctor 1983; Solé i Sabaté and Villarroya 2003; Torres Campañá 1937) (see Figure 3, note the increase around mid-November). Connection of Canales del Lozoya networks with other, smaller private networks such as Hidráulica Santillana were also made and the urban service reservoirs still under construction were filled up to maximize water reserves<sup>5</sup>. The proximity of urban reservoirs to the front line (occasionally impacted by shelling) obliged to take additional protection measures. However, several Canales workers, as well as firemen, were killed while they were trying to repair conduits and extinguish fires (Barragán and Trujillano 2006; Calvo 2012; Canales del Lozoya 1937; Torres Campañá 1937).

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<sup>5</sup> Letter signed by Federico Molero, Moscow, 1<sup>st</sup> December 1966.

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**Figure 4:** City of Madrid, November 1936. Urban military operations and Canales del Lozoya water supply system. Sources: Own elaboration based on Macías and Segura 2000; Martínez Bande 1968.

Coordination between the Military authority of Madrid and Canales produced immediate results and permitted the use of the city’s infrastructures against the aggressors. Using the subterranean networks, militias formed by company workers systematically cut water supply from buildings occupied by Francoist troops. Thus a group of workers reached the Hospital Clínico, captured by the rebels, through subterranean galleries and disconnected the building from the general water network. Similar actions were undertaken in the southern suburbs occupied by the invaders, and, in a rather paradoxical situation, the attacking troops began to feel the effects of the lack of water, which became an issue of concern for the rebels (Calvo 2012; Diamante 2011). Major Juan Petirena, a Francoist military engineer, was given the command of a unit working in the south of Madrid to repair leaks caused by Republican fire and to reestablish water service in that sector where Canales’ workers had successfully

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disconnected water pipes from the general network. After weeks, relief for the rebels would be provided by the construction of several wells and the installation of pumps, but the difficult conditions of such works implied several casualties to Franco’s men<sup>6</sup>.

The potential advantage that the command of urban infrastructures offered to the defendants was soon grasped by some of the militia members defending Madrid, and further exploited with the direct involvement of the water company. Led by Canales’ engineer Federico Molero, who had authored some of the plans to improve the city’s water supply, a unit devoted to underground warfare was created. The so-called “underground battalion” was formed largely by workers from Canales, experienced employees of the city council, and miners, and it engaged in a new form of underground struggle, anticipating combats in Warsaw or Stalingrad years later<sup>7</sup>. Taking advantage of the initial inability of the Francoist troops for subterranean warfare, these irregular troops sneaked into enemy land using sewer and supply networks in order to blow up enemy installations. One of such actions killed almost 40 legionnaires when a wing of the Hospital Clínico collapsed after a mine bomb had been planted by Molero’s men. Water mains were also blown in order to flood enemy trenches. Such actions were critical to offset the Francoist military superiority and push the experienced Francoist troops on the defensive. All in all this subterranean warfare caused concern and a certain psychosis among the invaders, and would develop in a continued urban underground warfare that lasted for the rest of the war<sup>8</sup> (Calvo 2012; Diamante 2011; Lister 2007; Reverte 2004; Servicio Histórico Militar 1948).

In the skies of Madrid, Soviet planes successfully disputed German domination as autumn advanced, making air raids to the city more and more difficult. In response, Franco resorted increasingly to artillery shelling from the nearer hills (Proctor 1983; Solé i Sabaté and Villarroya 2003). Franco, however, was well aware of the immense symbolic value of Madrid, and despite the failure to conquer it during the last months of 1936, continued the offensive. New attacks in December and January, this time in the open field, threatened the control of the vital channels delivering water to the city from

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<sup>6</sup> General Juan Petirena Aurrecochea, personal military record, *Archivo General Militar de Segovia*.

<sup>7</sup> Underground warfare had been characteristic of the static frontlines of World War I (see Barton et al 2007 or Jones 2010). During World War II it was used in different settings, usually in urban warfare. In the case of Madrid during the Spanish Civil War, while the Republican units initially used the underground urban networks to take the offensive, the Francoist army excavated tunnels in response and organized an underground unit made of sappers.

<sup>8</sup> Letter signed by Federico Molero, Moscow, 1<sup>st</sup> December 1966.

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El Villar (Colodny 1958; Martínez Bande 1968) and caused staggering casualties in both sides. Among the republicans, Canales managers urged specially to fortify the area around the urban reservoirs located close to the Hospital Clínico. The last Francoist attempts to encircle Madrid (battles of Jarama and Guadalajara) took place the first months of 1937 and brought the confrontation to a stalemate. During these offensives Canales staff worked closely with the Republican military command in order to protect reservoirs and channels, including the camouflage of critical water infrastructures (Canales del Lozoya 1937; Torres Campaña 1937). After the failure of these offensives, both sides devoted to the construction of fortifications and trenches. While in the Republican imaginary Madrid had become “The Tomb of Fascism”, among Francoist supporters, who seemed to have the capital within the arm’s reach but were repeatedly unable to seize it, Madrid became popularly known as *Madridgrad*. This successful nickname was first used by one of Franco’s generals and came to symbolize the obsessive relevance that the city had for the Francoists (Mainer 2008). For the rest of the war, however, the main battles would take place far from Madrid<sup>9</sup>.

### 6. Adaptation, reforms and the final defeat (1937-39)

From the onset of the Battle of Madrid, Republican authorities promoted the evacuation of non-combatants from the city. The high numbers of refugees that had arrived fleeing from the advance of Franco’s African Army pushed the sanitary situation of the city to its limits and increased the necessity of food, water and fuel. It is generally considered that the evacuation campaign succeeded in transferring refugees to other Republican cities, but failed in forcing the local population to abandon Madrid. However, it appears that the total population of the city decreased significantly, thus reducing the total requirements of water and other supplies (Aróstegui and Martínez 1984; Matos Massieu 1947; Montoliú 1999).

Water management in Madrid and other Spanish cities under Republican control had not only to deal with the everyday problems of ensuring supply in adequate quantity and quality under very severe conditions. But these challenges and the need to design and apply innovative policies to meet them also meant the adoption of new approaches in

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<sup>9</sup> Archival military sources, however, confirm the attention devoted to water infrastructures by the Republican army and the coordination with Canales del Lozoya managers during 1937 and 1938. See C.509,1,4; C.510,14,1; M.297,2, *Archivo General Militar de Ávila*.

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water management generally in the line of enhancing equity (but also efficiency) issues. In the besieged Madrid, workers were given representation on the Company Board of Canales del Lozoya and launched a number of reforms, including the suppression of the payment for the renting of meters and the programmed cancellation of contracts that in the past had granted free water in perpetuity to some real estate owners. Company engineers drafted projects to connect the reservoirs with nearby towns and villages that still lacked a steady supply of water. The company also took care of providing water to the frontlines and even installed portable showers in some trenches. In contrast, Francoist troops in the Ciudad Universitaria had serious problems accessing water (Calvo 2012; Canales del Lozoya 1937; Diamante 2011; Torres Campañá 1937; Vázquez de Parga 2001).

After April 1937 and the decision by Franco to shift the war effort to other Spanish areas combats in Madrid decreased and the Republican government established a committee –with the participation of Canales del Lozoya– for the reconstruction of the city, including proposals to deal with the chronic problem of insufficient water pressure in higher elevation neighborhoods. This problem was being used by Francoist propaganda to spread the rumor that Madrid lacked water during the war. In fact, despite restrictions and according to several sources, water never lacked in Madrid’s households, in contrast with food and other supplies (Montoliú 1999; Sanz García 2000; Vázquez and Valero 1978).

At any rate, war continued, and not to the benefit of republicans. In 1938 and after the fierce battle of the Ebro, the Spanish Republic was on the verge of collapse. Barcelona fell at the end of January 1939 and Madrid was occupied without resistance at the end of March. Torres Campañá, Federico Molero and other staff members of Canales undertook the path to exile<sup>10</sup>. The company was renamed again Canal de Isabel II and the new management, initially in charge of Juan Petrirena, found a water supply system that had fulfilled their functions reasonably well during the war years. For instance and despite the fact of being located in one of the major front lines during the entire war, Madrid was the only one of the 50 Spanish provinces to have a mortality rate for typhoid fever below 5 cases /100,000 people. Well into the 1940s, 1937 and 1938 were

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<sup>10</sup> Torres Campañá went into exile to Mexico and Federico Molero to the Soviet Union. Molero, a renowned engineer and communist party member, worked in solar energy research and hydraulic works (Ruiz Hernández 2010).

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still the years with fewer cases of typhoid fevers declared in the capital which proves again the robustness of the system (Matos Massieu 1947). Contrary to Barcelona, suffering from deplorable water and sanitary conditions after air raids, Madrid showed an extraordinary resilience to military strikes by land and by air. Above all, the case of the Spanish capital demonstrates how well organized, well-staffed and well equipped organizations may cope with large disturbing events with relative success using worker’s knowledge not only to sustain urban metabolism but as a proactive tool to reach other objectives, in the case of Madrid, defending the city against the invaders. From this point of view, episodes of severe urban stress provide an excellent occasion to examine how utility companies and especially their staff perform thus unveiling the historical, social, and political issues embodied by city infrastructures as well as hinting the possibilities for radical reappropriation of urban infrastructure through workers knowledge.

### **7. Conclusion**

In this paper we have presented the case of water management in Madrid during the years of the Spanish Civil War. The city was exposed to aerial and artillery bombing that destroyed or damaged much of its built environment, especially in working class areas of the south and west. However, the performance of the company responsible for serving water to Madrid, Canales del Lozoya, and especially of their committed workers and managers could be qualified overall as highly remarkable despite the fact of having the main reservoirs just below the Sierra front line, and the urban reservoirs located less than one kilometer from the front lines established after the attack of November 1936. After a brief period of restrictions, service resumed in almost normal conditions while, quite paradoxically, attacking troops experienced episodes of water scarcity and even thirst. The company workers and managers had already acted actively in conserving the strategic reserves of water held in the mountain reservoirs during the first weeks of the war. The conservation of these facilities probably avoided the fate followed by Singapore in 1942 after reservoirs supplying the city fell into Japanese hands. Management operated with considerable prudence: it kept restrictions to a minimum introducing measures now common in dealing with periods of water scarcity; developed a single network for the entire city (incorporating the network by the smaller water company Hidráulica Santillana), eliminated excessive costs for users such as the

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payment for meters, and worked on projects to increase and diversify sources of water in Madrid that would be implemented during the following decades. The evacuation of non-combatants might have contributed to increase the adaptability of the city to the siege decreasing the requirements of water and other supplies, in a similar way to what Konvitz (1990) pointed for Hanoi under the US bombings in the early 1970s. The water network of pipes and sewers also provided an appropriate environment for a certain form of warfare later to be deployed at a far greater scale in places such as Warsaw or Stalingrad. As Yves Lacoste had put it four decades ago, the mobilization of geographical knowledge is a critical component in warfare but also crucial in preventing the disruption of daily life under periods of urban stress (Lacoste 1973). In that sense, workers of Canales del Lozoya realized that the knowledge and control over water flows was fundamental if an enemy much better trained and equipped was to be faced with certain guarantee of success. Water workers were successful in avoiding the disruption of the circulation of water throughout the city. Along those lines, the Madrid case represents an interesting intersection between new currents in Hazard Geography emphasizing the role of organizations (see, for example, Pelling and Dill 2010); Urban Political Ecology stressing the importance of the democratic control over urban infrastructure and socio-environmental flows (see, for instance, Bakker 2008; Loftus 2012; Monstadt 2009); and finally the Geography of Urban Labor (see Castree 2007), and especially the accumulated knowledge and experience of managers and workers in helping to enhance infrastructure resilience under periods of hardship.

Still, Madrid differs from other Spanish cities subject to bombing (Barcelona being the most relevant case in point) let alone with cities following a similar fate during World War II. To begin with, despite dozens of artillery impacts affecting the urban reservoirs (Canales del Lozoya 1937) even the governmental delegate in Canales del Lozoya admitted that the systematic and persistent objective to destroy the water supply network of Madrid was not in the agenda of the Francoist command, which might have kept hopes of seizing the city without totally destroying its infrastructure (Torres Campaña 1937). Likewise, Franco was also very keen on sheltering some of the richest Madrid neighborhoods, such as Salamanca, out of the reach of air raids and shelling (Solé i Sabaté and Villarroja 2003). However, the lack of remorse in reducing to dust entire working class neighborhoods such as Tetuán (very close to the Canales urban facilities) and Vallecas, as well as the heavy bombing of other neighborhoods proves



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that the physical destruction of at least the most popular parts of the urban fabric was indeed in that agenda.

To conclude, both in maintaining the water supply system under very reasonable conditions of quantity and quality (proven by the low incidence of water-related illnesses such as typhoid fevers) and in providing human and technical resources to the war effort itself, the water company of Madrid, and more specifically its workers, played a significant role in the struggle of the city against the military rebels. The reasons of such a positive outcome are many and involve factors related to the peculiar hydraulic geography of Madrid, but especially to the fact that, contrary to another large Spanish city such as Barcelona, the water supply system had been designed to serve the needs of a state capital since the mid-1800s. That the very Spanish state had taken the reins of Madrid’s water supply had profound implications in terms of the resources devoted, and the technical and managerial skills of the company workers and engineers. The Canal of Isabel II remains one of the most powerful Spanish companies in the water sector and, to this day, has been able to insulate Madrid from the water crises experienced by other cities such as Palma de Mallorca, Seville or Barcelona in the 1990s and 2000s.

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RESEARCH ARTICLE III

“Africa Begins at the Pyrenees”: Fortifying the Nation in Fascist Spain  
(1939-1959)

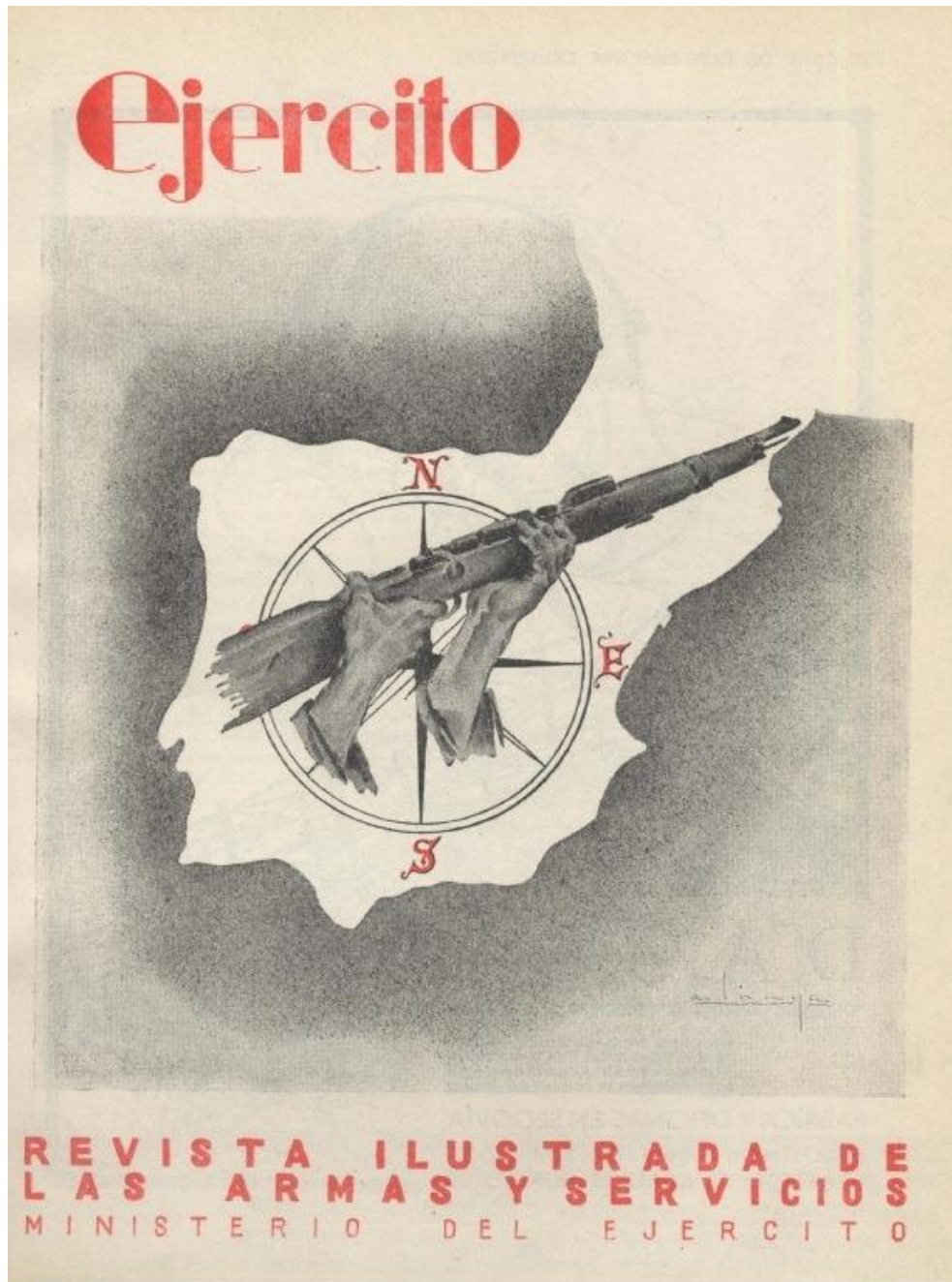


Figure 1: Cover of the Journal *Ejército*, n°87, April 1947. Source: Biblioteca del Pavelló de la República (UB).

**Research article III: “Africa begins at the Pyrenees”**

**Paper under review in *Environmental History*.**

**“Africa Begins at the Pyrenees”: Fortifying the Nation in Fascist Spain  
(1939-1959)**

**Paper under review in *Environmental History*.**

**Single-authored paper.**

**Abstract:** This article examines the environmental history of fortification systems through the case of the militarization of the Spanish border with France between 1939 and 1959. Defense lines such as the Maginot or Siegfried lines were examples of a military trend characteristic of the Interwar period in Europe but have received limited attention in the environmental histories of war literature. As a late example of the Interwar fixation with fortifications, the construction of the so-called “Pyrenees line” by the Francoist regime inextricably combined discourses on the spiritual and natural force of the Spanish mountains with the material work of prisoners, conscript soldiers and draft animals. Social control and repression, most of all, were central in the militarization of the border region. Originally meant as a mocking reference to the backwardness of Spain, the French saying “Africa begins at the Pyrenees” was appropriated by Spanish fascists in the 1940s as a rejection of the European decadence represented by liberal democracies. The defeat of the Axis forces during the Second World War ignited a remarkable effort to fortify the border region, especially intense in those regions where the Pyrenees were not a major obstacle and thus where “nature” had to be improved. Despite building several thousands of bunkers, efforts decreased during the 1950s and were eventually abandoned, in many places superseded by tourist and urban development.

**Keywords:** Environmental history, Francoism, landscape militarization, borders, Pyrenees, fortification systems

## 1. Introduction: Defense Lines, Borders and Nature

On the final days of the Spanish Civil War (1936-1939), fascist poet and soldier Ernesto Giménez Caballero was at the head of the triumphant Francoist military units occupying Catalonia. As the troops set foot on the Pyrenees border, coming on the heels of the fleeing loyalist army, the first propagandist of fascism in Spain went into ecstasy.<sup>1</sup> Francoist victory was a “seismic movement in History”, one that would bring the Pyrenees – “a spiritual mountain range” – back as a healthy division between France and Spain.<sup>2</sup> In the view of Spanish fascists, French ideological influences had debilitated the true essence of Imperial Spain since the eighteenth century. “Il n'y a plus de Pyrénées” (“The Pyrenees are no more”), allegedly stated French King Louis XIV when his grandson Philip V was crowned king of Spain in 1700 and the political significance of the Pyrenees seemed to vanish.<sup>3</sup> When in 1939 Giménez Caballero, awarded with the international fascist literary prize, published his account of the occupation of the Pyrenees border, he titled it as a response to the French king, echoing in time: “¡Hay Pirineos!” (“There are Pyrenees!”).<sup>4</sup>

Twenty years later, the jubilant dream of Giménez Caballero had materialized in unexpected forms. Scattered throughout the Spanish side of the Pyrenean border, from the Bay of Biscay to the Mediterranean, circa 4,500 fortifications watched over roads and valleys, from hills and cliffs, to a depth of 60 kilometers from the frontier. As growing forests advanced and tons of barbed-wire fences rusted in the military depots, all sorts of outdated bunkers remained unused, buried in the landscape or disguised as shepherd’s huts. They were the result of a vast project of fortification, conceived early after the Civil War and secretly put in practice at full speed when the collapse of the Axis armies approached in 1944. In the years passed since 1939, the fortifications of the so-called Pyrenees line had been discussed at the United Nations in 1946 and assessed by the US Joint Chief of Staff in 1947. After the consolidation of the Cold War and the rapprochement between Spain and the US, confirmed by the Pact of Madrid in 1953, they began to fall into oblivion. The US military, after all, was interested in

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<sup>1</sup> On Giménez Caballero pioneering role in the introduction of fascism in Spain, see José-Carlos Mainer, “Conversiones: sobre la imagen del fascismo en la novela española de la primera postguerra”, 175-192, in Paul Aubert (Coord.) *La Novela en España: siglos XIX-XX* (Madrid: Casa de Velázquez, 1995).

<sup>2</sup> Ernesto Giménez Caballero, *¡Hay Pirineos! Notas de un alférez en la IV<sup>a</sup> de Navarra sobre la conquista de Port-Bou* ([Barcelona]: Editora Nacional, 1939), 14.

<sup>3</sup> Voltaire attributed the quote to the French ambassador in Spain at the time, while others point to the Spanish representative in France. Voltaire, *Le Siècle de Louis XIV* (London: Publie par M. de Francheville, 1752), 297. José María Iribarren, *El Porqué de Los Dichos*, 7th ed. (Pamplona: Departamento de Educación y Cultura, 1994), 235.

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building naval and air bases in the Iberian Peninsula, not in obsolete field defenses along the French border. By 1959, General Francisco Franco, the former devotee of Hitler and Mussolini, toured the streets of Madrid accompanied by Dwight Eisenhower, the first US president ever to visit Spain. And Giménez Caballero, the once-admired poet, had become an uncomfortable reminder of the Fascist heyday previously enjoyed by the Spanish regime. He had just been appointed ambassador in the Latin American republic of Paraguay.

The Francoist plan of fortification constituted a late example of a military trend much in vogue during the Interwar period.<sup>5</sup> The Maginot and Siegfried defense lines are probably the most famous examples of the fortification fever that took Europe by storm, but not the only ones.<sup>6</sup> These colossal military walls constituted massive landscape interventions aimed at reinforcing political borders, embedded in – and relying upon – geographical features regarded as obstacles under the prevailing military doctrine prior to the Second World War. Growing out of the muddy trenches of the Great War, these neat fortification systems inextricably mixed nature with culture, forests and concrete, mountains and steel. Guarding the national borders, disguised in the landscape, they were often seen as embodying the natural values of the homeland. However, when they were finally put to the test, they proved of little use in a new war based on the mechanization of warfare, mobility, motorization and air power, and most failed to accomplish their purpose.

Since the turn of this century, environmental history scholars have devoted continuous attention to the topic of war.<sup>7</sup> Militarized landscapes, in particular, have been object of several

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<sup>4</sup> Giménez Caballero, *¡Hay Pirineos! Notas de un Alférez en la IV<sup>a</sup> de Navarra sobre la Conquista de Port-Bou*.

<sup>5</sup> Interest on the Francoist fortifications of the Pyrenees started during the mid-1990s. The first article on the topic was authored by Jean-Louis Blanchon, Lluís Esteva, and Pere Serrat, “Années 40: La Ligne de Fortification Des Pyrénées Espagnoles,” *Études Roussillonnaises*, no. XIII (1994-1995): 147–59. The same team of authors further expanded their work with two more publications that detailed the main characteristics of the fortifications. See Jean-Louis Blanchon, Pere Serrat, and Lluís Esteva, “La ‘Línea P’. La Ligne de Fortification de La Chaîne Des Pyrénées (1),” *Fortifications & Patrimoine*, no. 2 (1997): 43–50; Jean-Louis Blanchon, Pere Serrat, and Lluís Esteva, “La Línea P. Topographie et Conception D’un Système de Défense,” *Fortifications & Patrimoine*, no. 3 (1997): 36–42. These early efforts have given way to a few regional monographs, mostly from a military history perspective. For the central Pyrenees, see José Manuel Clúa, *Cuando Franco Fortificó Los Pirineos: La Línea P en Aragón. Introducción. La Jacetania* (Zaragoza: Katia, 2004). In Catalonia, see Josep Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans* (Barcelona: Rafael Dalmau, 2010). Current studies for the Basque Country – Navarra have focused on specific areas fortified in 1939-1940, but no accounts of the fortification efforts developed later have been published so far. See Juan Antonio Sáez García, *La fortificación “Vallespin” en Guipúzcoa (1939-1940)* (San Sebastián: Ingeba, 2010).

<sup>6</sup> A central reference, including cases from more than 15 European countries and an appendix with a brief account of the Pyrenees fortifications, is J. E. Kaufmann and Robert M. Jurga, *Fortress Europe: European Fortifications Of World War II* (Da Capo Press, 2002).

<sup>7</sup> The first book engaging war from an environmental history perspective was Edmund Russell, *War and Nature. Fighting Humans and Insects with Chemicals from World War I to Silent Spring* (Cambridge: Cambridge University Press, 2001). A first edited collection in Richard Tucker and Edmund Russell (Eds.), *Natural Enemy*,

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studies examining battlefields, trenches, training grounds or nuclear testing locations.<sup>8</sup> The Korean Demilitarized Zone and its impact on natural conservation is a good example of the potential that research on defense lines offers to environmental historians and its appeal to the general public.<sup>9</sup> In Europe, the former limit marked by the Iron Curtain is also known for its wildlife and there are projects to turn it into a trail for walking and cycling.<sup>10</sup> Nonetheless, the ideology, design and construction of fortification systems and their embodiment of natural and national features has attracted limited attention in the literature.<sup>11</sup> Throughout time, fortifications – from simple walls and forts to the imposing Maginot line – have been intended as attempts to create, mark or reinforce social and political borders, often relying on geographical and landscape features. But above all else, they have been erected, developed and perfected to prevent the entry of those regarded as undesirable. It comes as no surprise that the expression “Fortress Europe”, widely used today as a critical allusion to the European system of migrant detention centers and border patrols, was originally a term for the 1940s German fortifications built in occupied Europe to prevent Allied landings.<sup>12</sup>

By examining the symbolic and material development of the Francoist “Pyrenees Line”, a late example of the Interwar fortification craze, the present research attempts to contribute to

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*Natural Ally: Toward an Environmental History of War* (Corvallis: Oregon University Press, 2005). Around the same years, several papers discussed warfare and the use of wood in world history, the impact of war in landscape in the case of the American Civil War, or the importance of forests in France during the Second World War. See, respectively, J. R. McNeill, “Woods and Warfare in World History,” *Environmental History* 9, no. 3 (July 2004): 388–410; Lisa M Brady, “The Wilderness of War: Nature and Strategy,” *Environmental History* 10 (2005): 421–47, and Chris Pearson, “‘The Age of Wood’: Fuel and Fighting in French Forests, 1940-1944,” *Environmental History* 11, no. 4 (2006): 775–803.

<sup>8</sup> On militarized landscapes, see Chris Pearson, *Scarred Landscapes: War and Nature in Vichy France* (Palgrave Macmillan, 2008); Chris Pearson, Peter Coates, and Tim Cole, *Militarized Landscapes: From Gettysburg to Salisbury Plain* (London: Continuum, 2010); Peter Coates, Tim Cole, Marianna Dudley and Chris Pearson, “Defending Nation, Defending Nature? Militarized Landscapes and Military Environmentalism in Britain, France, and the United States,” *Environmental History* 16, no. 3 (2011): 456–91; Marianna Dudley, *An Environmental History of the UK Defence Estate 1945 to the Present* (London: Continuum, 2012).

<sup>9</sup> Lisa M. Brady, “Life in the DMZ: Turning a Diplomatic Failure into an Environmental Success,” *Diplomatic History* 32, no. 4 (2008): 585–611. See also, by the same author, “How wildlife is thriving in the Korean peninsula’s demilitarised zone”, published in *The Guardian*, <https://www.theguardian.com/environment/2012/apr/13/wildlife-thriving-korean-demilitarised-zone>, last accessed November 5 2016.

<sup>10</sup> See the website of the Iron Curtain Trail <http://www.ironcurtaintrail.eu/> and the European Green Belt project <http://www.europeangreenbelt.org/>.

<sup>11</sup> Studying warfare and the use of wood, J.R. McNeill specifically pointed out to the importance of fortifications, see McNeill, “Woods and Warfare in World History.”, 390-395. As for the Maginot Line, undoubtedly the more iconic fortification system of the interwar period, it is briefly reviewed in the indispensable monography authored by Chris Pearson on the mobilization of nature in 20<sup>th</sup> century France, but not explored in depth; see Chris Pearson, *Mobilizing Nature: The Environmental History of War and Militarization in Modern France* (Manchester: Manchester University Press, 2012), 148-150.

<sup>12</sup> The expression has entitled books referred to both topics. On fortification, see Kaufmann and Jurga, *Fortress Europe: European Fortifications Of World War II*; on migration, see for instance Matthew Carr, *Fortress Europe. Inside the War Against Immigration* (London: Hurst Publishers, 2015).

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the previous literature in several ways. First, it explores the construction of fortification systems as militarized landscapes, underlining the use of discourses interweaving nature and nation, and the importance of social control. Second, it provides a Spanish case study to the literature on the environmental history of war, and one whose significance extends beyond the European context, as proved by the close attention that top US military planners devoted to the region during the early Cold War.<sup>13</sup>

Last, this article follows in the footsteps of two authors who traveled through the mountains of the Mediterranean and lived in the boundaries between France and Spain. In first place, more than twenty years ago, John McNeill pointed out the clashing views between French and Spanish about where the African borders began.<sup>14</sup> The present research details how Spanish Fascists celebrated the Pyrenean frontier hand in hand with the Atlas mountain range in Morocco, which they coveted, and interpreted the similarities between the Rif and Baetic mountains’ environments as a justification of their imperialist claims: North Africa was *naturally* a part of Spain. Around the same years that McNeill studied the mountain environments of the Mediterranean, Peter Sahlins delved into the history of the Pyrenean valley of Cerdanya, divided between France and Spain since 1659, to compose a classic study on the relation between state building and the production of identity in border regions.<sup>15</sup> Looking at a different historical period, this article examines the use of discourses about natural and national borders in the same region, as well as its materialization in the form of fortifications and landscape modifications through the work of prisoners and conscript soldiers.

As explained below, in Francoist Spain the border with France was fortified first through a discourse which made it a natural and spiritual bastion separating the country from the degeneration on the liberal democracy. But the case of the Pyrenees also illustrates that in order to fulfill the main aim of a fortification project – breaking the socioecological continuum – control over people and space was at least as important as the capability to design and build a system of defenses and bunkers. As put by Marco Armiero in his study of

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<sup>13</sup> The lack of militarized landscapes studies regarding the Spanish Civil War is explicitly underlined by Chris Pearson in his review of the literature, “Researching Militarized Landscapes: A Literature Review on War and the Militarization of the Environment,” *Landscape Research* 37, no. 1 (2012): 115–33, see 126. For a recent contribution, see Santiago Gorostiza, Hug March, and David Sauri, “‘Urban Ecology under Fire’: Water Supply in Madrid during the Spanish Civil War (1936-1939),” *Antipode* 47, no. 2 (2015): 360–79.

<sup>14</sup> J. R. McNeill, *The Mountains of the Mediterranean. An Environmental History*. (Cambridge: Cambridge University Press, 1992), 13.

<sup>15</sup> Peter Sahlins, *Boundaries: The Making of France and Spain in the Pyrenees* (Berkeley: University of California Press, 1989).

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the Italian mountains, it could be said that Francoism changed the Pyrenees “with words and with bombs”, sculpting a whole region as a battlefield for a war that, in the end, did not occur.<sup>16</sup>

## 2. A Spiritual Earthquake, a Geopolitical Subject

In Spain, during the early 1940s, the Fascist celebration of the Pyrenees’ spiritual reemergence constituted an explicit rejection of Europe.<sup>17</sup> “Spain is not Europe, it never was”, claimed General Alfredo Kindelán, one of the top officers of the Spanish army. In the pages of the prominent military publication *Ejército*, he argued that Spain was a small continent in itself, separated from Europe by an almost unsurmountable barrier: The Pyrenees. His views display the high influence that National-Socialist notions of geopolitics enjoyed among part of the Spanish military. Kindelán argued that the Spanish nation configured “an exceptional geopolitical subject”, featuring a substantial unity in weather, orography, customs and race. In his opinion, France had infected Spain with the virus of revolution in the late 18<sup>th</sup> century, but after a century and half of illness, the shock therapy of the Spanish Civil War cleansed the body of the Spanish nation. Once sanitized, the nation was ready to attain its geopolitical “vital space”.<sup>18</sup>

Yet when exalting the Pyrenees and discussing the limits of Spanish vital space, high military officers like Kindelán were also looking southwards towards Africa. Since 1909, the Spanish army had fought an intermittent and bloody colonial war in Morocco, where General Franco and many members of the military had been promoted to the highest army positions by the 1930s. It was among the ranks of the so-called *Africanistas* where the military coup that ignited the Spanish Civil War was conceived. Significantly, the rebellion started in the colonial possessions in Morocco and overwhelmed the metropole after the colonial army crossed from Morocco to the peninsula, with crucial support from Nazi Germany and fascist Italy.<sup>19</sup> Immediately after the war, these high officers formed the backbone of the Spanish state and hankered after the French possessions in North Africa. Several of them helped

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<sup>16</sup> Marco Armiero, *A Rugged Nation: Mountains and the Making of Modern Italy* (Cambridge: The White Horse Press, 2011), 87.

<sup>17</sup> Ernesto Giménez Caballero, *Casticismo, Nacionalismo y Vanguardia. Antología, 1927-1935* ([Madrid]: Fundación Santander Central Hispano, 2005). Prologue by José-Carlos Mainer, XXIX.

<sup>18</sup> Alfredo Kindelán, “Tiempos Inciertos. España y el Momento,” *Ejército*, no. 14 (1941). On the development of Fascism and geopolitics in Spain, see Antonio Reguera, “Fascismo y Geopolítica en España,” *Geocrítica*, 1991, <http://www.ub.edu/geocrit/geo94.htm>.

<sup>19</sup> On the Spanish Civil War as a colonial war, see Gustau Nerín, *La guerra que vino de África* (Barcelona: Crítica, 2005).



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marshal arguments to the effect that the limits of the “Spanish geopolitical subject” included a substantial part of the African continent.<sup>20</sup>

These *Africanistas* set forth their expansionist arguments with a celebration of the French saying “Africa begins at the Pyrenees”.<sup>21</sup> While this sentence was typically used as a mocking reference to Spanish backwardness, they subverted its original sense. Claiming that Africa began in the Pyrenees was another way of saying that Spain was not Europe. In so doing they portrayed the geographical space between the Pyrenees and the Moroccan Atlas mountain range as a transitional zone – neither Europe, nor Africa.<sup>22</sup> Spain and Morocco were for them two sides of the same “geographical body”, and configured a “geopolitical subject”. In order to validate these views, military authors and geographers mobilized geology, biogeography, climatology, anthropology, and history. Underlining the analogous disposition of several Moroccan and Spanish regions – the Rif Mountains and the Baetic, the Moroccan plateau and the Spanish *meseta*, the Atlas and the Pyrenees – they pointed to the similarities in climate, flora and fauna and thus blended nature and people into one national body. They even pointed to historical racial resemblances between Iberian and Berber populations, in order to conclude that Morocco was like “a piece of Spain, an African Iberia”.<sup>23</sup> The discourse that celebrated the Pyrenees as the natural border with Europe was part and parcel of the imperialistic ideology that regarded Spanish expansion in Africa as a “historical imperative”.<sup>24</sup>

Despite initially adopting a neutral position during the Second World War, Spain declared itself non-belligerent amidst the French downfall of June 1940. This position involved support to the Axis forces but not a direct involvement in military operations. As Paris fell to the Nazis, Francoist forces occupied Tangier International Zone, in Northern Morocco, as a temporary wartime measure, and laid claims over Gibraltar. However, no further escalation followed, and Franco would not enter the war, despite extensive collaboration with Italy and

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<sup>20</sup> Reguera, “Fascismo y Geopolítica en España.”

<sup>21</sup> The sentence has been attributed to Napoleon and Alexandre Dumas, but most likely it emerges from M. de Pradt, *Mémoires Historiques Sur La Révolution d’Espagne* (A Paris : chez Rosa et chez Mme. Ve. Perronneau, 1816), 168. See also Iribarren, *El Porqué de los Dichos*, 243.

<sup>22</sup> Reguera, “Fascismo y Geopolítica en España.” On the discourse of the *Africanistas*, see also Lluís Riudor, “Sueños Imperiales y Africanismo durante el Franquismo (1939-1956)” in Joan Nogué i Font and José Luis Villanova, *España en Marruecos (1912-1956): Discursos Geográficos e Intervención Territorial* (Lleida : Milenio, 1999), 258-267.

<sup>23</sup> The quote in Ramón Armada, “Así Está Escrito,” *Ejército*, no. 8 (1940), 38. For arguments combining natural sciences, geography and history see also José Díaz de Villegas and José Bustamante, *El Estrecho de Gibraltar* (Madrid: Editora Nacional, 1941), 37 and 239; and Tomás García Figueras, *Reivindicaciones de España en el Norte de Africa: Conferencia. X Feria de Muestras de Barcelona*. (Barcelona : [Casa Prov de Caridad, imp.], 1942), particularly 7-11.

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Germany.<sup>25</sup> Its most important intervention was probably the Blue Division (“División Azul”), a unit of 50,000 volunteers that became a German army division and fought in the Eastern front starting in the summer of 1941. The course of the war frustrated Spanish colonial ambitions, but the *Africanistas*’ view of the Pyrenees as a “natural border” endured, permeating school textbooks and cinema productions.<sup>26</sup> As put by a Spanish schoolbook in 1943, God had placed the Pyrenees as a natural border to “separate us eternally from freethinking France”.<sup>27</sup> This same year, as the Allies set foot in Europe, Spanish fascists started turning their eyes from Africa towards their northern border with France. It now seemed that the material separation between the two countries was seriously flawed: the Pyrenees, after all, were not barrier enough.

### 3. A Natural Border, an Imperfect Obstacle

The Pyrenean mountain range extends for almost 500 kilometers, separating the Iberian Peninsula from the rest of continental Europe. From the Mediterranean Sea to the Bay of Biscay, several peaks exceed 3000 meters and form a geographical feature of great historical and symbolic meaning, containing one of the first national parks established in 1918 in Spain.<sup>28</sup> Nonetheless, beyond its cultural significance, the Pyrenees are not a homogeneous unit. The two-hundred-kilometer long central region of the massif, between Roncal and Segre rivers, averages more than 2000m in altitude and marks quite a clear line between northern and southern climate and biota. On the two extremes of the Pyrenees, however, the situation is fairly different. Neither the Western nor the Eastern Pyrenees represent comparable obstacles, nor do constitute a sharp separation between climatic or biotic regions. The lowest mountain pass of the massif, The Col du Perthus, connects Southern France with Catalonia at an altitude of 290m. Accordingly, throughout time and history these regions at the eastern and

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<sup>24</sup> Díaz de Villegas and Bustamante, *El Estrecho de Gibraltar*, 151-152.

<sup>25</sup> On the pro-Axis activities of Spain during the war, see Manuel Ros Agudo, *La Guerra Secreta de Franco, 1939-1945* (Barcelona : Crítica, 2002).

<sup>26</sup> On school textbooks, see José María Hernández Díaz, “«A Dios Gracias, África Empieza en los Pirineos». La Negación de Europa en los Manuales Escolares de la España de Posguerra (1959-1945),” *Historia de La Educación: Revista Interuniversitaria* 20 (2001): 369–92. On cinema, see Luis Mariano González González, *Fascismo, Kitsch y Cine Histórico Español (1939-1953)* (Cuenca: Ediciones de la Universidad de Castilla-La Mancha, 2009), 178-194.

<sup>27</sup> Federico Torres Yagües, *Horizonte Imperial* (Madrid, 1943), 19.

<sup>28</sup> The national park of Ordesa y Monte Perdido was established in 1918 on the basis of the National Parks Act of 1916. See José Luis Ramos Gorostiza, “Gestión Ambiental y Política de Conservación de la Naturaleza en la España de Franco,” *Revista de Historia Industrial*, no. 32 (2006): 99–138.

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western ends of the Pyrenees, have shown a major permeability and circulation of peoples and influences, as well as armies.<sup>29</sup>

Today, as in 1939, the political border in force in the region goes back to the Treaty of the Pyrenees (1659), which put an end to the French–Spanish wars of the previous decades. After a revolt in Catalonia in 1640, French troops helped the rebels to defeat the Spanish army and took control of the region. The 1659 treaty sanctioned the French annexation of all villages north of the Pyrenees and thus corrected the eastern part of the border. The new boundary between the two countries roughly followed the Pyrenees crest, and it took a long time to formally establish and enforce its precise demarcation on the ground.<sup>30</sup>

Almost three centuries later, the newly born Francoist regime coveted French colonial possessions, but showed little signs of quarreling about these older borders.<sup>31</sup> After the Spanish Civil War, the oversized Francoist army – close to 500,000 mobilized men – was a giant with feet of clay. Spanish armed forces lacked access to modern equipment, fuel, motorized vehicles, and air power. Against all logic, as the tide of the Second World War turned against the Axis forces and the Spanish regime became an international pariah, Francoist military authors clung to the theoretical advantages that a mountain landscape offered. According to views widely held in their circles at the time, mountains and forests could compensate for the lack of armored divisions and even air power. Making a virtue of necessity, military theorists argued that in case of conflict the Spanish armed forces had to make the best of its landscape, and enhance its natural qualities when possible.<sup>32</sup>

The defensive potential of Spanish nature ranked high among national attributes. Fascist poet Giménez Caballero saw in the Pyrenees a representation of the Spanish nation.<sup>33</sup> As the main fascist newspaper put it in early 1944, nature had favored Spain with the masculine side of the Pyrenees – arid, rocky, uncomfortable, apt for mountaineers and good for defense – whereas the French side was feminine, deemed fit for tourists and with no defensive value.<sup>34</sup> Along with this celebration came an emphasis on the virtues of the Spanish soldier, who must

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<sup>29</sup> Lluís Solé i Sabarís, *Los Pirineos: El Medio y el Hombre* (Barcelona : Alberto Martín, 1951), 229-240.

<sup>30</sup> Peter Sahlins, “Natural Frontiers Revisited: France’s Boundaries since the Seventeenth Century,” *American Historical Review* 95, no. 5 (1990): 1423–51.

<sup>31</sup> Nonetheless, the Roussillon was sometimes listed among the territories ambitioned by Spain, as published in several of the early 1940s pro-expansionist literature. Stanley G. Payne, *Franco and Hitler: Spain, Germany, and World War II* (New Haven & London: Yale University Press, 2008), 129.

<sup>32</sup> Juan Carlos Losada Málvarez, *Ideología Del Ejercito Franquista: 1939-1959* (Madrid : Istmo, 1990), 189-193.

<sup>33</sup> Ernesto Giménez Caballero, “Los Pirineos y la Bandera Española” *Sí. Suplemento Semanal de Arriba*, 16 January 1944, 3.

<sup>34</sup> J.R. Alonso, “Cara y cruz de los Pirineos,” *Sí. Suplemento Semanal de Arriba*, 16 January 1944 , 10.

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exploit the advantages granted by his land despite lacking modern equipment. Well into the 1940s, during a conference on the strategic value of the border, a general and military professor underlined that Spanish armed forces had to adapt to the national terrain. The defining characteristic of Spanish geography, as he put it in front of the future top commanders of the army, was encapsulated in the prefix “anti”: “Nature has indelibly inscribed this spirit in our geography, which is almost completely anti-tank, anti-aircraft, anti-airlift and, maybe, anti-atomic”.<sup>35</sup>

In the eyes of high-ranked Francoist officers, it was this natural superiority of Spain’s topography that the French –“our neighbors on the other side of the Rif and the Pyrenees” – had intended to wipe out for so long. They argued that French governments had conducted diametrically opposite projects in the Rif Mountains and in the Pyrenees. While in Morocco few connecting roads had been built, in the Pyrenees France had promoted the interconnection towards Spain, and no less than seventeen roads and four railroads crisscrossed the border. “France certainly wanted to level the Pyrenees”, they concluded.<sup>36</sup>

In order to reverse this trend, Francoist authorities cancelled road and train projects improving connections with France, and mocked the opening tourist development of the region, which was abandoned.<sup>37</sup> Top-ranking officials actually celebrated the lack of a good transportation infrastructure in Spain, regarding it as an advantage in case of conflict.<sup>38</sup> Yet despite their faith on the natural virtues of Spanish geography, military planners were not blind to the differences in the Pyrenees mountain range. They conceded that on each side of the massif a door swung open, a weakness aggravated by the regions involved: the Basque Country and Navarra in the East and Catalonia in the West. As put by a fascist general, on each side of the Pyrenees’ natural bastion grew “poisonous plants” that periodically threatened the social, moral and political virtues of Spain.<sup>39</sup> After the end of the Spanish Civil War in 1939, the military occupation of these regions came hand in hand with an effort to seal off the border and insulate Spain from foreign influences. Imagining the Pyrenees as a potential theatre of war, the military intervened to enhance the defensive features of the

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<sup>35</sup> José María López Valencia, *Los Pirineos. Notas para un Reconocimiento Estratégico. Conferencia pronunciada en la Escuela Superior del Ejército* (s.l.: Copia mecanografiada, 1947), 35.

<sup>36</sup> Díaz de Villegas and Bustamante, *El Estrecho de Gibraltar*, 161-162.

<sup>37</sup> Antonio Merino Mora, “El Circuito Pirenaico y el Valle de Benasque,” *Guayente*, no. 104 (2016): 5–9. A mocking comment to the development of roads and tourism connections during the Republican years in José Díaz de Villegas, *España, Potencia Mundial: La Omnipotencia Geográfica Española* (Madrid: Editora Nacional, 1949), 352.

<sup>38</sup> Losada Málvarez, *Ideología del Ejército Franquista: 1939-1959*, 193.

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landscape, building fortifications as a way of reinforcing “nature”. Yet to transform the Pyrenees into the solid separation that Francoism yearned for, the Spanish regime had to change not only its landscape, but its people.

#### 4. A Material Wall: Perfecting Nature through Work

Military officers and Francoist ideologues believed that the fortifications erected along the Pyrenees border had both spiritual and natural foundations. But the mortar that hardened these defenses was political violence and social control. The Francoist victory in 1939 gave birth to a “New Spain” where there was no space for political opposition. Autarky, the socio-economic system championed by the fascists, advocated top-down self-sufficiency closely associated with a tight social control.<sup>40</sup> Spanish fascism aimed at pulling the weeds out by the root, which motivated the physical elimination of at least 130,000 political opponents during the Spanish Civil War, plus 20,000 more in the years that followed.<sup>41</sup> Although military operations finished in 1939, the state of war remained in force until as late as 1948, ensuring the absolute prevalence of the army over civil authorities.<sup>42</sup> In the border region, where guerrilla activities endured, the boundaries between war and post-war are even more blurred.<sup>43</sup>

Organizing a defense line and preparing a future battlefield meant first of all imposing tight control over the space in dispute. The regulation of movement was a central part of this process. Francoist authorities legally established a “frontier zone” where safe-conducts were mandatory for anyone circulating out of his or her town of residence. Although the exact limits of this strip of territory kept changing, it reached up to a depth of 80 kilometers from the border line. The safe-conduct was required to use any public or private transport in this area, and anyone stopped without carrying a valid and stamped document was to be fined and

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<sup>39</sup> López Valencia, *Los Pirineos. Notas para un Reconocimiento Estratégico. Conferencia pronunciada en la Escuela Superior del Ejército*, 41.

<sup>40</sup> The dual character of the concept of autarky, encapsulating the ideas of self-sufficiency and social control, has been highlighted both by historians of science and technology and researchers on Spanish contemporary history. For a study of the environmental history of fishing in Francoist Spain along these lines, see Santiago Gorostiza and Miquel Ortega Cerdà, “‘The Unclaimed Latifundium’: The Configuration of the Spanish Fishing Sector under Francoist Autarky, 1939–1951,” *Journal of Historical Geography* 52 (2016): 26–35.

<sup>41</sup> On the death toll of the war and the dictatorship, see Paul Preston, *El Holocausto Español* (Barcelona: Círculo de Lectores, 2012), 17 and 24.

<sup>42</sup> On the 1936-1948 temporality and on political violence during the Spanish Civil War and the Francoist dictatorship, see Javier Rodrigo, *Hasta la raíz: Violencia durante la Guerra Civil y la dictadura franquista* (Madrid: Alianza, 2008), 29, 42, 69, 182-183.

<sup>43</sup> On guerrilla warfare in the Pyrenees, see Fernando Martínez de Baños Carrillo, *Hasta Su Total Aniquilación: El Ejército Contra El Maquis en el Valle de Arán y en el Alto Aragón, 1944-1946* (Madrid: Almena, 2002).

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could be arrested. Activities such as hunting and tree-cutting were controlled. The “frontier zone” and its legal requirements remained in force until as late as 1955.<sup>44</sup>

Sanitizing the border region by getting rid of those regarded as suspicious was part and parcel of its militarization. Thousands of people had already gone into exile when the war finished. Yet anyone who had served a prison sentence faced great difficulties if she was to set her residence inside the limits of the frontier zone, and those listed as politically unreliable were time and again legally banished from it. At the very same time, during the 1940s, thousands of soldiers and officers occupied the region. Lacking garrisons, troops inhabited vacant spaces and buildings, while officers usually lived in private houses.<sup>45</sup> The very efforts of fortification were one more layer of military occupation, a permanent materialization of their presence in the territory. Their occupation of space did not pass unnoticed to clandestine opposition forces, who reported the movement of troops throughout the landscape and made efforts to get hold of forged safe-conducts.<sup>46</sup>

The building of fortifications thus became intertwined with military occupation and social control. Works started as soon as the Spanish Civil War finished, and made use of one of the few abundant and cheap resources of 1940s Spain: labor power.<sup>47</sup> Militarized units of political prisoners participated in public works and reconstruction all over the country, but in the border region some also engaged in building fortifications and military infrastructure, usually very close to the border line. In 1939 and 1940 7,800 prisoners worked in these projects in the Basque region, under very poor material conditions, while approximately 3,800 did so in Catalonia.<sup>48</sup> However, these early efforts were not part of an integral plan and

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<sup>44</sup> On social control in the Catalan Pyrenees, see Josep Calvet Bellera, “Control Social a la Zona Fronterera: El Pirineu de Lleida (1939- 1945),” *Actes del seminari “El Primer Franquisme, Lleida, 1938-1950”*, 2002, 99–121. On the safe-conduct, see Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 18-19.

<sup>45</sup> See Calvet Bellera, “Control Social a la Zona Fronterera: El Pirineu de Lleida (1939- 1945),” 108-112. Several interviewees, both officers and conscript soldiers, refer to the occupation of private houses and of spaces belonging to the municipality. General Juan Rotger and Jordi Bonet, personal communication.

<sup>46</sup> Archivo Histórico del Partido Comunista de España, Madrid. 11-3. Section: Buró político, comité ejecutivo, equipo de pasos. Series: Informes sobre viajes. “Informe de Jové sobre un viaje a Cataluña. Informando sobre las fortificaciones de la frontera”, July 27 1946 (Jacq. 156) and “Informe sobre las fortificaciones en la frontera y sobre el cambio de formato sufrido en los salvoconductos y células”, undated (Jacq. 100).

<sup>47</sup> On labor as a cheap resource in post-war Spain and its use for water public works, see Erik Swyngedouw, “Technonatural Revolutions: The Scalar Politics of Franco’s Hydro-Social Dream for Spain, 1939-1975,” *Transactions of the Institute of British Geographers* 32, no. 1 (2007): 9–28. On the organization of forced labor in Francoist Spain, see Gonzalo Acosta Bono, José Luis Gutiérrez Molina, Lola Martínez Macías, Ángel del Río Sánchez, *El Canal de Los Presos (1940-1962)* (Barcelona: Crítica, 2004).

<sup>48</sup> On the fortifications built in the Basque Country and Navarra during these years, see Juan Antonio Sáez García, *La fortificación “Vallespin” en Guipúzcoa (1939-1940)* (San Sebastián: Ingeba, 2010), 20; and Fernando Mendiola Gonzalo and Edurne Beaumont Esandi, *Esclavos del Franquismo en el Pirineo* (Tafalla : Txalaparta, 2006). For Catalonia, see Oriol Dueñas Iturbe, *Els Esclaus de Franco* (Badalona : Ara Llibres, 2007), 169-181.

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stopped around 1941. Most military engineers during these years were busy fortifying the region of Gibraltar and North Africa.

The course of the Second World War forcibly changed the priorities of the Francoist regime. In late 1943 Franco abandoned the ambivalent “non-belligerent” position and returned to neutrality while announcing the withdrawal of the Blue Division from the Eastern front. Survival for the regime was to become the top priority. Around this time, the Spanish Chief of Staff established directives for the fortification of the Pyrenees. These directives certified the military’s trust in terrain by classifying territories in three categories – A, B and C – according to its orography and the communications that crossed it. While high mountain passes were regarded as “passive” (C) areas where field fortifications and military patrols would suffice, flat regions with good communications and roads were considered critical spaces (A) that required all kind of fortification efforts.<sup>49</sup> In other words, it was terrain that determined the effort of fortification needed.<sup>50</sup>

Early in 1944, disguised as civilians, senior officers travelled through the region categorizing the lands under these typologies and determining the locations to reinforce “natural obstacles” with fortifications. They also accounted for the local resources and defense possibilities of each area.<sup>51</sup> As Nazi-occupied France collapsed during the summer of 1944, fears of invasion haunted the Francoists.<sup>52</sup> The day prior to the liberation of Paris, Franco signed an order setting in motion an integral project of fortification for the Pyrenees. The transfer of military units to the border started soon thereafter, and by the end of the year, several regiments of engineers had been deployed and works were underway.<sup>53</sup>

In contrast to earlier works, after 1944 it was regular conscript soldiers who bore the brunt of the building effort, with no prisoners taking part.<sup>54</sup> Quite significantly, however, Franco

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<sup>49</sup> The directives established three types of territory: A (active), B (dangerous) and C (passive). B category referred to zones that had no direct penetration lines but could facilitate the advance of the enemy. Archivo Intermedio Militar Pirenaico (AIMP), Barcelona, collection 32, box 10, folder 3, record 10. “Directivas para la Fortificación de la Frontera Pirenaica”, November 11 1943.

<sup>50</sup> As put it by one of the officers posted to the region, the density of fortifications varied depending on the difficulty represented by natural obstacles. Col. Arcadio Del Pozo Senillosa, personal communication.

<sup>51</sup> Such reviews included water, building materials, wood, and grazing areas for pack animals. Col. Arcadio Del Pozo Senillosa, personal communication.

<sup>52</sup> Spanish military and intelligence reports point to the fears that the French communist party could takeover France and attempt to invade Spain. See AIMP, collection 33, box 56, folder 11, reports dated on July 6 and August 11 1944.

<sup>53</sup> AIMP, collection 32, box 1, folder 2, record 1. “Instrucción C-15 sobre organización defensiva de los Pirineos”, August 23 1944. See also Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 57.

<sup>54</sup> The Spanish Chief of Staff considered the possibility of using prisoners on the fortification project at broad scale, but finally disregarded it. Archivo General de la Administración, Alcalá de Henares, IDD (09)007.001, Servicio de Colonias Penitenciarias Militarizadas, box 51/04881. Note by J. Petrirena, February 1945.

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appointed as head engineer of the Pyrenees fortification system the colonel who had devised and directed the vast system of forced labor throughout Spain.<sup>55</sup> Juan Petirena, a veteran *Africanista* with experience in the colonial war and the Civil War, organized conscript labor.<sup>56</sup> Under his guidance, the hobbled metabolism of autarkic Spain started pumping to the Pyrenees tons and tons of concrete, along with thousands of soldiers, to materialize the ambitious plans drafted.<sup>57</sup> During 1945, the military accounted for 40.3% of the Spanish budget – the maximum reached during the 1940s.<sup>58</sup> For the following years, the physical work of conscript soldiers would transform the border lands and became inscribed in the landscape in the form of reinforced concrete bunkers.<sup>59</sup>

Lacking machinery and fuel, the work that concealed hundreds of defenses and shelters throughout the Spanish border was largely manual. Unlike the massive interwar and World War II fortification systems undertaken by France or Germany, the efforts of the Spanish army were those of a very low-energy society relying almost completely on the labor of both animals and humans. The military transported building materials to the border region first through railway and then to the main towns by truck. But on the last step of the transport chain to the fortification sites, animal draught remained essential. As pointed out by a former lieutenant deployed in the region, “a mule was a treasure”, and the injuries and deaths of animals usually led to long legal enquiries against the officers in charge.<sup>60</sup> Conscript soldiers – more abundant and less valued – substituted for animal draught when mules were not available, as was often the case, and working days could extend to 10 to 14 hours.<sup>61</sup> Badly

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<sup>55</sup> Archivo General Militar de Segovia, Juan Petirena Aurrecoechea (1885-1956), personal military record.

<sup>56</sup> The similitudes between prisoners’ forced labor and that of the conscript soldiers have already been highlighted by Josep Màrius Climent i Prats, “27 Batallón Disciplinario de Soldados Trabajadores 1940-1942. Violencia y Control Social sobre los Vencidos de la Guerra Civil Española,” *Hispania Nova, Revista de Historia Contemporánea*, no. 14 (2016): 165–91, see 170.

<sup>57</sup> The production of concrete was controlled by the state and its use very restricted. According to a Francoist general at the time, a great amount of all the concrete available in Spain during the second half of the 1940s was taken to the Pyrenees, Carlos Martínez de Campos y Serrano, *Ayer* (Madrid: Instituto de Estudios Políticos, 1946), vol. II, 297. During 1946, the monthly supply of concrete to the military in Catalonia was 665 Tons but 1500 Tons were required, see AIMP, collection 32, box 13, folder 10, document 1, 108.

<sup>58</sup> Antonio Cazorla Sánchez, *Las Políticas de la Victoria: La Consolidación del Nuevo Estado Franquista (1938-1953)* (Madrid: Marcial Pons, 2000), 38.

<sup>59</sup> On the study of work examining landscape as evidence of past human labor, see Stefania Barca, “Laboring the Earth: Transnational Reflections on the Environmental History of Work,” *Environmental History* 19, no. 1 (2014): 3–27.

<sup>60</sup> General Juan Rotger, personal communication.

<sup>61</sup> Regarding the importance of animal draught, see AIMP, collection 32, box 9, folder 6, documents 27, 28, 30 and 32. A reference to penalties to officers in charge of injured mules and the 10-14 hours working days in AIMP, collection 32, box 13, folder 10, document 1, 119-120.



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equipped for work, especially in mountain environments, and with limited food available, several former conscripts recalled the work conditions as dire.<sup>62</sup>

In order to make up for the limited technology available and the quality of the fortifications themselves, military officers placed great emphasis on embedding fortifications in the Pyrenees landscape. When giving detailed building instructions, military directives on paper and officers on the ground highlighted the importance of “imitating nature” and concealing bunkers in the terrain, excavating the sites so that the fortifications would become part of the landscape. While the importance of armor in the fortifications was downplayed, the excavation of caves and galleries to find shelter and natural protection along with camouflage was highly praised.<sup>63</sup> It was more than resembling “nature”: it was to find shelter in its bosom. At the same time, military publications portrayed mountain environments as the best allies of the Spanish soldier, and explicitly associated the features of the mountains – rough, brave, hard – with Spanish racial traits.<sup>64</sup> Many of the shelters were excavated in rock, and others imitated natural features as well as shepherd huts and terracing walls in the hillsides.<sup>65</sup> Along the border, the structure of the fortification system was based on “resistance centers” – following the A, B, C categories established in 1943 – that should be able to defend themselves autonomously. They were not placed right on the border but inside of Spanish territory, covering the main lines of penetration (see figure 2; see additional maps for the Catalan region in **Annex I** of this thesis.). Each of them had been assigned the defense of a specific area and was composed of several type of fortifications, from large anti-tank bunkers to small machine-gun pillboxes or shelters, among others. Before works slowed down in 1948, most of the military effort concentrated in the regions along the main roads and penetration lines, where the density of bunkers completed was remarkable.<sup>66</sup> On the other hand, most of the fortifications planned for passive zones, where the natural obstacles were regarded as unsurmountable, remained only on paper.

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<sup>62</sup> Ramon Rull and Rafael Sazatornal, personal communication.

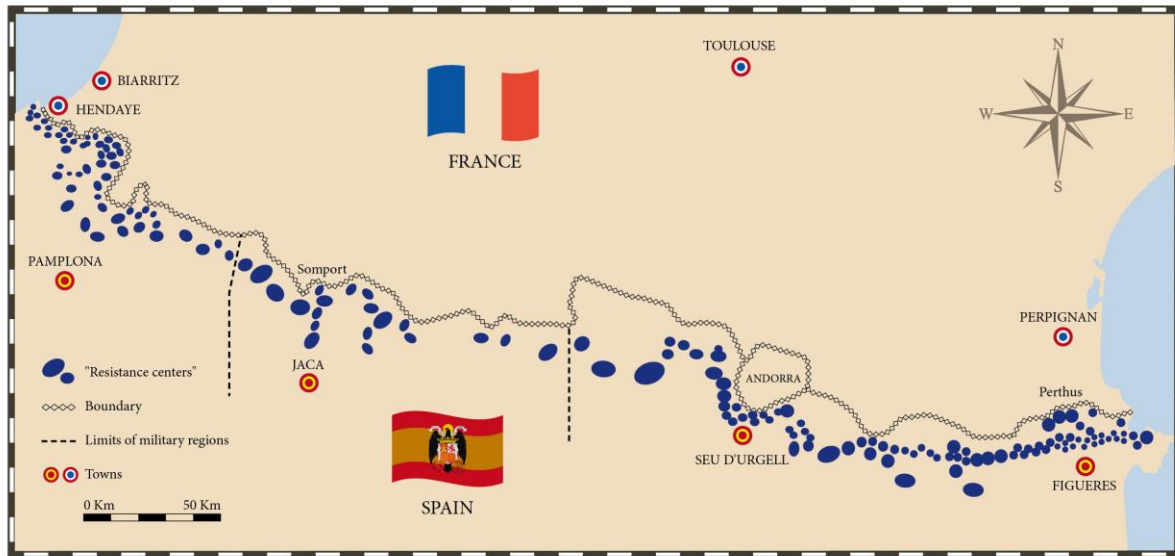
<sup>63</sup> AIMP, collection 32, box 10, folder 2, document 7, “Instrucción Particular 6-C. Protección indirecta de las obras”, 30 August 1945. See also AIMP, collection 32, box 10, folder 2, document 4, “Detalle de las normas a seguir para la entrega de obras a fuerzas desplegadas en la zona pirenaica”, 28 February 1947. Several interviewees refer also to the importance bestowed to camouflage, also during the 1950s. Ramon Fígols and Antonio Berruezo, personal communication.

<sup>64</sup> F. Trapiella, Francisco Javier. “Tropas de montaña. Cursos especiales de esquí y escalada”, *Ejército*, 61, February 1945, 17-24.

<sup>65</sup> Jordi Bonet and Ramon Rull, personal communication. See also Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 48. A photo collection of fortifications, taken during the 1940s, in the Archivo del Servicio Militar de Construcciones, Madrid, memorial book, 1943-1949.

<sup>66</sup> See Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 29-38, 57-62, 139-140. Ibid.

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**Figure 2:** Distribution of resistance centers along the border line with France. Source: Own elaboration, based on Blanchon, Serrat, and Esteva, “La ‘Línea P’. La Ligne de Fortification de la Chaîne des Pyrénées (1).”, 48.

#### 5. An Incomplete Project, a Cold War story

The fortification works carried out by the Francoist army were object of discussion at international forums. During 1946, the diplomatic status of the Francoist regime was hotly discussed at the United Nations General Assembly. After the end of the Second World War, Spain had not been invited to join the UN, and upon the petition of some of its members, a subcommittee was formed to inquire into the activities of the Francoist regime. Not only did it find evidence of the Francoist aid to Italy and Germany during the war, but it also gathered information on the fortifications built in the Pyrenees.<sup>67</sup> According to British reports, the reason for the fortification was Franco’s fear “that France may go Communist and become a military danger to Spain”.<sup>68</sup> By the end of the year, the UN General Assembly adopted a resolution declaring that Francoism was a “fascist regime patterned on, and established largely as a result of aid received from, Hitler’s Nazi Germany and Mussolini’s Fascist Italy”.

<sup>67</sup> United Nations Archives, New York, “French delegation’s submission, 1946; United Nations Security Council”, S-0020-0001-01; “Factual findings concerning the Spanish situation. Supplementary memorandum to the report of the sub-committee appointed by Security Council on 29 April 1946”, <http://hdl.handle.net/11176/89012>, last accessed 2 November 2016. The memorandum includes English, American and French reviews of the fortifications, see 51-54.

<sup>68</sup> The National Archives, Kew, “Report on the Spanish army by the Military Attaché to the British Embassy at Madrid”, FO 371/60462.

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The declaration recommended UN members to take diplomatic action and keep Spain away from international institutions until an acceptable government was formed.<sup>69</sup>

During the following years, as the Cold War unfolded, US military planners carefully examined the European theatre. Successive reports produced by the US Joint Intelligence Staff and Joint Chiefs of Staff (JCS) in 1946 and 1947 underlined the critical strategic value of the Pyrenees region in the event of a Soviet invasion of Europe, conceding that the Red armies would probably occupy the continent and reach the Pyrenees rapidly. Lacking aerial support, the JCS judged that neither the mountain range nor the Spanish army would represent a serious obstacle, concluding that the Soviet army could cross the Pyrenees in 20 days and reach Gibraltar in 40 days more, easily overrunning the large but ill-equipped Spanish army and its outdated fortifications.<sup>70</sup>

In fact, the Francoist effort in the Pyrenees fortification system decreased after 1948, when most of the anti-tank bunkers had been completed and state of war in Spain was finally ended.<sup>71</sup> As the Cold War alliances became defined, Spanish propaganda presented the Iberian Peninsula as an island of security and Franco as the first general who had defeated communism. The growing tensions of the Cold War contributed to a progressive change of the US position towards Spain, whose strategic value and collaboration was now deemed as critical by military planners.<sup>72</sup> However, this value did not reside in the strength of the Pyrenees as a natural border, but in the potential role of the peninsula “as a site for air and naval bases from which to control the western Mediterranean and its Atlantic approaches”.<sup>73</sup> The slow but constant rapprochement between the US and Spain culminated in 1953 with the Pact of Madrid, which allowed the US to build several naval and air bases in Spain in exchange for economic and military aid, but left the fortifications untouched. The diplomatic

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<sup>69</sup> United Nations General Assembly, “Relations of Members of the United Nations with Spain”, A/RES/39(I) <http://hdl.handle.net/11176/146316>, last accessed 2 November 2016.

<sup>70</sup> Records of the Joint Chiefs of Staff (Library of Congress, Washington DC), Part II: 1946-1953, The Soviet Union, reel 2: “Invasion of the Iberian Peninsula by USSR”, JIS (December 5, 1946), 19; Records of the Joint Chiefs of Staff, Part II: 1946-1953, The Soviet Union, reel 3: “The Soviet Threat Against the Iberian Peninsula and the Means Required to Meet It, Short Title: DRUMBEAT.” JWPC (August 4, 1947), see particularly 19 and 31. For an evolution of the role of the Iberian Peninsula in Western military planning, see Antonio Marquina, *España en la Política de Seguridad Occidental: 1939-1986* (Madrid: Servicio de Publicaciones del E.M.E., 1986).

<sup>71</sup> 78% of the total bunkers built in the Catalan region had been completed by 1947, according to Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 139.

<sup>72</sup> On the trajectory of US-Spain relations between 1945 and 1950, see Ángel Viñas, *En Las Garras Del Águila: Los Pactos con Estados Unidos, de Francisco Franco a Felipe González (1945-1995)* (Barcelona: Crítica, 2003), 23-83.

<sup>73</sup> Central Intelligence Agency, “The Political Future of Spain”, ORE 56, 5 December 1947, 3, <https://www.cia.gov/library/readingroom/document/0000256629>, last accessed 2 November 2016.

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agreement ended the period of Spanish isolation and facilitated Spain’s incorporation into the UN two years later, although Spain remained out of NATO.<sup>74</sup>

During the 1950s, the tight control exerted by the military in the border region slowly eased. The compulsory use of safe-conduct was lifted in 1955, the same year that the Spanish government approved the creation of a second national park of the Pyrenees.<sup>75</sup> The remaining units of engineers devoted most of its efforts to maintaining and perfecting the cover of fortifications, policing logging and regularly patrolling the region.<sup>76</sup> By the late 1950s, when the fortification project was abandoned, approximately 4,500 different defenses and shelters had been built throughout the border zone.<sup>77</sup> The stability granted by the new international status of the dictatorship, along with economic crisis, brought political changes. In 1959, a new Francoist government shelved the autarkic policies, in decline since 1951, and approved the so-called Stabilization Plan. This coincided with the breakthrough of tourism, which became probably the most symbolic banner of Spanish liberalization.<sup>78</sup> In 1960, as the military units of engineers that had scattered bunkers throughout the border finally disbanded, the Spanish government published its first official studies for the touristic organization of the Pyrenees.<sup>79</sup> Some of the road and communication projects that had been abandoned in 1939 would be resumed for touristic purposes.<sup>80</sup>

During the following years, the urban developments required to improve access and grant accommodation to the growing numbers of visitors to the Catalan coast or the expanding skiing resorts of the Pyrenees inevitably led to clashes with regional military authorities, as they exposed fortifications works or rendered them inoperable. Starting in the 1960s, a new wave of concrete – this time in the form of urbanization – covered the Catalan coast along with some of the fortifications built. As it happened in the growing Pyrenees towns, new

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<sup>74</sup> Viñas, *En las Garras del Águila: Los Pactos con Estados Unidos, de Francisco Franco a Felipe González (1945-1995)*, 86-285.

<sup>75</sup> On the safe-conduct, see Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 11. Unlike other Fascist regimes, during the 1940s and early 1950s the Francoist regime did not create new national parks. See Ramos Gorostiza, “Gestión Ambiental y Política de Conservación de la Naturaleza en la España de Franco.”

<sup>76</sup> Several works were completed in the isolated mountain passes of the central Pyrenees during the 1950s, see José Manuel Clúa, *Cuando Franco Fortificó Los Pirineos: La Línea P en Aragón. Ribagorza y Sobrarbe* (Zaragoza: Katia, 2007). On the maintenance activities, see Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 61-62 and Antonio Berruezo, personal communication.

<sup>77</sup> Col. Del Pozo Senillosa, personal communication. 2,900 fortifications were built in the Catalan region, according to Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 139. There are currently no studies with figures for the total works completed in the central and eastern Pyrenees.

<sup>78</sup> Sasha D. Pack, *Tourism and Dictatorship: Europe’s Peaceful Invasion of Franco’s Spain* (New York: Palgrave Macmillan, 2006), 83-103.

<sup>79</sup> Secretaría General para la Ordenación Económico-Social, *Estudio para la Ordenación Turística del Pirineo Español* ([Madrid?]: Presidencia del Gobierno, 1960).

<sup>80</sup> Mora, “El Circuito Pirenaico y El Valle de Benasque.”

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houses sometimes covered firing lines of fortifications and raised the opposition of military authorities.<sup>81</sup> When the Spanish army carried out a general revision of the state of the fortifications between 1969 and 1971, officers found out that many of the constructions had been eaten up by the rapidly growing forests, while others were exposed by roads or skiing resorts, and even flooded by newly built reservoirs.<sup>82</sup>

## 6. Conclusions

When in 1986 Spain finally joined both NATO and the European Union, international commentators blew the dust off the old metaphors to announce – one more time – that the Pyrenees had ceased to represent a separation between Spain and Europe. The last revision of the fortification works built in the border, carried out as a military exercise, took place this very same year.<sup>83</sup> Several of the old bunkers, never occupied by the army nor legally expropriated, had been taken by local inhabitants who used them as warehouses or livestock pens, and were familiar to local hikers. During the 1990s, projects aiming to conserve some of them started up.<sup>84</sup>

As contemporary ruins, bunkers are testimonies of the shifting political and economic regimes and their national projects of transformation.<sup>85</sup> Today, many of Franco’s pillboxes are gone, devoured by forests, flooded by reservoirs, buried by tourist-oriented urban development or razed to the ground by new roads and the high velocity railway connecting Barcelona with Paris. The remaining are material ruins of the only European fascist regime that survived the Second World War. They are a symbol of Spanish self-isolation, closed in on itself when its German and Italian counterparts were defeated and until the Cold War urgencies converted Francoism into a US ally.

The Francoist project of fortification was a social and ecological attempt to convert what Spanish fascists regarded as a spiritual wall – the political border with France – into a truly material separation, perfecting a natural obstacle – the Pyrenees – through defenses and shelters built with different forms of forced labor. The thousands of bunkers constructed were part of an effort to correct “nature’s mistakes”, enhancing the defensive features of the landscape. It was not possible to make the Pyrenees taller, but thousands of tons of concrete

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<sup>81</sup> Col. Del Pozo Senillosa and Manel Pujol, personal communication. See also AIMP, collection 32, box 7, folder 7, document 2.

<sup>82</sup> See Clara, *Els Fortins de Franco: Arqueologia Militar als Pirineus Catalans*, 83-87 and 182-189.

<sup>83</sup> AIMP, collection 33, box 28.

<sup>84</sup> See “La línea Gutiérrez”, *La Vanguardia*, April 6 1996, 19. A museum was inaugurated in the Catalan Pyrenees in 2007, <http://www.bunquersmartinet.net/>

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were poured to make them into a stronger obstacle, despite the resounding failure of fortification systems during the Second World War. As shown by the celebration of mountain landscape and environments that accompanied the fortification of the Pyrenees, the militarization of the border created “a hybrid environment in which the nationalization of nature was particularly strong”.<sup>86</sup> The progressive abandonment of autarkic political-economy and the liberalization of the Spanish economy – often symbolized by its emergence as a tourist destination – was accompanied by a reduction of the military role in the border and the final abandonment of the project.

The militarization of the Spanish border with France made apparent how ideological premises concerning nation and nature transformed the landscape of the Pyrenees together with social control and the material construction of fortifications. Sealing off the border required taking care of the “social weeds” as much as building a military wall disguised in the landscape. The military occupation of space established a layer of movement and economic control and cleansed the region through repression and banishments. The erection of concrete bunkers, where human and animal work became inscribed, came on top of these layers of control. After the vanishing of the former, it constitutes one of the last material records of their occurrence.

Writing in 1939, fascist poet Giménez Caballero asserted that if Spanish history had to be summarized in one sentence, this should be “To have or not to have Pyrenees”.<sup>87</sup> In September 1940, a very different visitor arrived at the town of Portbou, the same place where Giménez Caballero had announced the reemergence of the “spiritual mountain range”. Fleeing the Nazi occupation of Europe, Walter Benjamin reached Spain with a group of Jewish refugees to find that the Francoist government had cancelled their transit visas and that police had orders to return migrants to France. Fearing deportation, he committed suicide on 27 September 1940.<sup>88</sup> Today, the Pyrenees are not among the critical borders of the new “Fortress Europe”, but one of its most iconic walls surrounds Melilla, one of the remaining

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<sup>85</sup> Alfredo González Ruibal, “Time to Destroy,” *Current Anthropology* 49, no. 2 (2008): 247–79.

<sup>86</sup> Armiero, *A Rugged Nation: Mountains and the Making of Modern Italy*, 87.

<sup>87</sup> Giménez Caballero, *¡Hay Pirineos! Notas de un Alférez en la IVª de Navarra sobre la Conquista de Port-Bou*, 13.

<sup>88</sup> On European refugees and the Pyrenees during the Second World War, see Josep Calvet, *Las Montañas de La Libertad: El Paso de Evadidos Por Los Pirineos Durante La Segunda Guerra Mundial, 1939-1944* (Madrid: Alianza, 2010). On the death of Walter Benjamin, see Esther Leslie, *Walter Benjamin. Overpowering Conformism* (London: Pluto Press, 2000), 215.

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Spanish possessions in Africa.<sup>89</sup> Walls, fences and other forms of urban and military fortification remain tools for exclusion and marginalization. Their historical foundations are fertile ground for engaged environmental historians to critically explore the mix of culture and nature and the political implications of the concept of natural borders.

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<sup>89</sup> See for instance “African migrants look down on white-clad golfers in viral photo”, The Guardian, 23 October 2014 <https://www.theguardian.com/world/2014/oct/23/-sp-african-migrants-look-down-on-white-clad-golfers-in-viral-photo> Last accessed December 1 2016.

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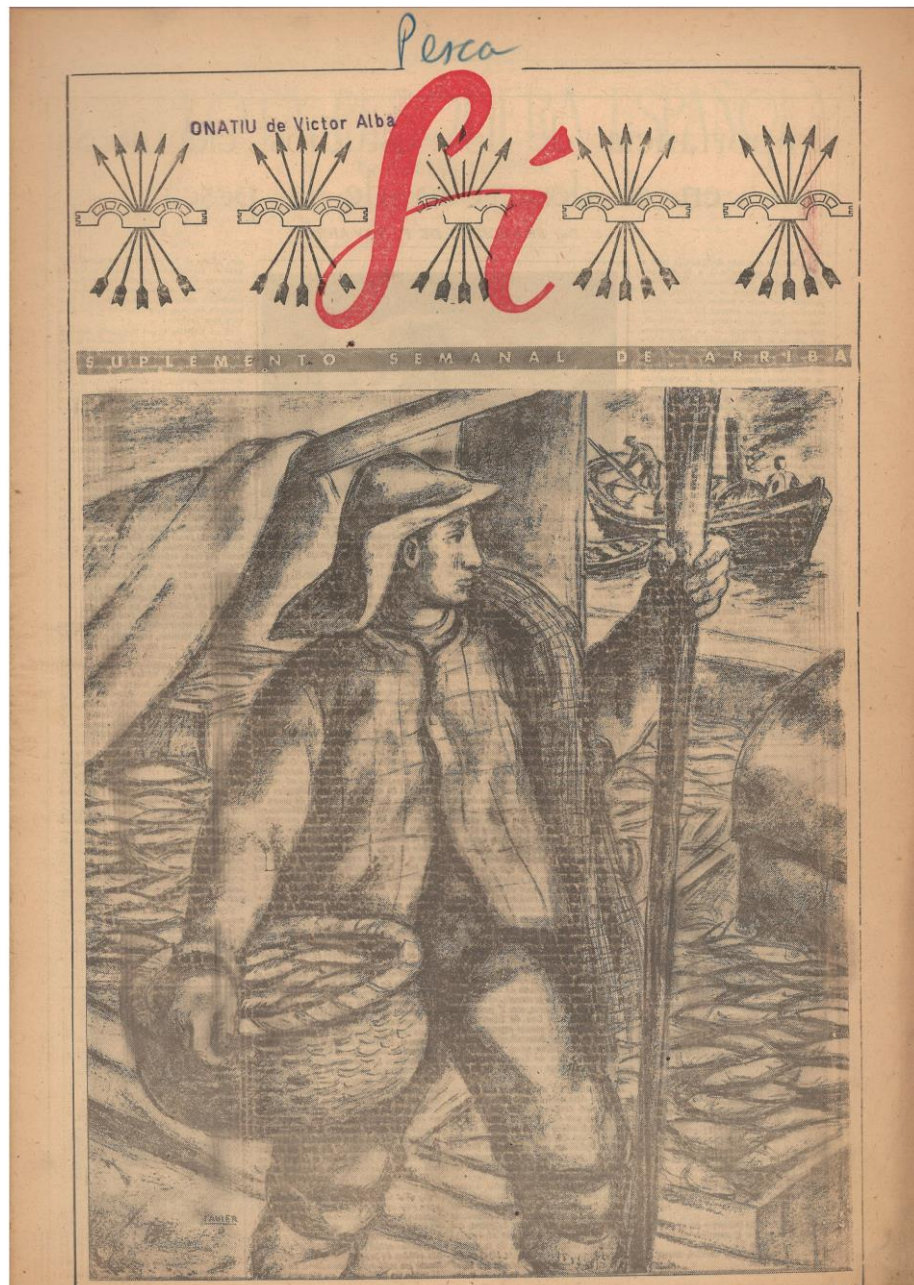
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## RESEARCH ARTICLE IV

### ‘The unclaimed latifundium’: The configuration of the Spanish fishing sector under Francoist autarky, 1939-1951



**Figure 1:** Cover of the magazine *Sí* (weekly supplement of the newspaper *Arriba*), n°31, August 2 1942. Source: Biblioteca del Pavelló de la República (UB).


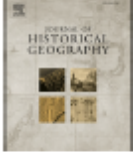


Journal of Historical Geography 52 (2016) 26–35

Contents lists available at ScienceDirect

**Journal of Historical Geography**

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## ‘The unclaimed latifundium’: the configuration of the Spanish fishing sector under Francoist autarky, 1939–1951

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**ARTICLE INFO**

*Article history:*  
 Received 27 February 2015  
 Received in revised form 23 December 2015  
 Accepted 29 December 2015

*Keywords:*  
 Fishing  
 Autarky  
 Self-sufficiency  
 Spain  
 Francoism  
 Fascism

**ABSTRACT**

Autarkic ideology and economic policies were central features of the interwar period in Europe. Despite autarky's connection to geographical concepts such as space, resources and population, its historical impact has been relatively little explored in the literature. In this article, we first present how the concept of 'autarky' conflates two etymological meanings: self-sufficiency and authoritarianism. We then explore this duality, using archival sources, by examining the social and economic policies applied to the fishing sector in Francoist Spain between 1939 and 1951. On the one hand, we examine the repression and transformation of the fishers' social world. On the other, we study the impact of public policies on the marine fishing fleet, underlining the importance of the militaristic guidelines that shaped the reforms. We argue that these autarkic reforms have had long-term consequences that are still visible today. They represented a rupture for the associative environment of fishers and shaped the future characteristics of the fleet, as well as its pattern of geographical expansion.

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Spain will go back to search for its glory and wealth by the sea routes

*Fundamento de la Nueva España, 1937.<sup>1</sup>*

In 1945, the Fascist-backed comic *Flechas y Pelayos* included a drawing of a cod fish with a brief inscription saying: 'If fish had no enemies, cod alone would be enough to fill all the space in the seas'.<sup>2</sup> Such popular (but also scientific) images of over-optimistic abundance are commonplace in a range of periods and places.<sup>3</sup> However, in the Spain that emerged from Franco's crushing victory in the Civil War (1936–1939), they achieved a special significance.

The post-Civil War period in Spain was plagued by hunger and deprivation. Diplomatic reports and travellers' statements refer to

undernourishment and deaths from starvation.<sup>4</sup> Studies on historical nutrition and agrarian metabolism describe a decrease in Spanish agricultural production and meat consumption, and highlight the colossal disaster that these post-war years represented for the population.<sup>5</sup> During these years of hunger, the Spanish minister José Luis Arrese allegedly told Franco that dolphin meat sandwiches and fish-flour bread were a feasible solution for starvation.<sup>6</sup> Behind the minister's odd statement there was a sense of uneasiness with the pervasive hunger that overwhelmed the country. But there was something else, something central to the economic approach of the period: the aspiration of using available national resources to the maximum extent in the name of

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<sup>1</sup> Our translation. See Falange Española Tradicionalista y de las J.O.N.S., *Fundamento de la Nueva España*, Bilbao, 1937.

<sup>2</sup> *Flechas y Pelayos*, 330 (1st April 1945) 13.

<sup>3</sup> M. Kurlansky, *Cod: A Biography of the Fish that Changed the World*, New York, 1998.

<sup>4</sup> C. Barciela, El fracaso de la política agraria del primer franquismo, in: C. Barciela (Ed.), *Autarquía y Mercado Negro: el Fracaso Económico del Primer Franquismo, 1939–1959*, Barcelona, 2003, 55–93; M. A. del Arco Blanco, *Morir de hambre. Autarquía, escasez y enfermedad en la España del primer franquismo, Pasado y Memoria. Revista de Historia Contemporánea* 5 (2006) 241–258.

<sup>5</sup> M. González de Molina, D. Soto, J. Infante and E. Aguilera, ¿Una o varias transiciones? Nuevos datos sobre el consumo alimentario en España (1900–2008), XIV Congreso de Historia Agraria, Badajoz, 2013.

<sup>6</sup> R. Garriga, *Franco–Serrano Sínner, un Drama Político*, Barcelona, 1986, 116; H. Saña, *El Franquismo sin Mitos: Conversaciones con Serrano Sínner*, Barcelona, 1982, 146–147.

<http://dx.doi.org/10.1016/j.jhg.2015.12.006>  
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**‘The unclaimed latifundium’: The configuration of the Spanish fishing sector under Francoist autarky, 1939-1951**

**Paper published in the *Journal of Historical Geography*, 2016, Vol. 52, pp. 26-35.**

**Co-authored with Miquel Ortega.**

**Abstract:** Autarkic ideology and economic policies were central features of the interwar period in Europe. Despite autarky’s connection to geographical concepts such as space, resources and population, its historical impact has been relatively little explored in the literature. In this article, we first present how the concept of ‘autarky’ conflates two etymological meanings: self-sufficiency and authoritarianism. We then explore this duality, using archival sources, by examining the social and economic policies applied to the fishing sector in Francoist Spain between 1939 and 1951. On the one hand, we examine the repression and transformation of the fishers’ social world. On the other, we study the impact of public policies on the marine fishing fleet, underlining the importance of the militaristic guidelines that shaped the reforms. We argue that these autarkic reforms have had long-term consequences that are still visible today. They represented a rupture for the associative environment of fishers and shaped the future characteristics of the fleet, as well as its pattern of geographical expansion.

**Keywords:** fishing; autarky; self-sufficiency; Spain; Francoism; fascism

## 1. Introduction

*Spain will go back to search for its glory and wealth by the sea routes.*

Fundamento de la Nueva España, 1937<sup>1</sup>

In 1945, the Fascist-backed comic *Flechas y Pelayos* included a drawing of a cod fish with a brief inscription saying: ‘If fish had no enemies, cod alone would be enough to fill all the space in the seas’.<sup>2</sup> Such popular (but also scientific) images of over-optimistic abundance are commonplace in a range of periods and places.<sup>3</sup> However, in the Spain that emerged from Franco’s crushing victory in the Civil War (1936-1939), they achieved a special significance.

The post-Civil War period in Spain was plagued by hunger and deprivation. Diplomatic reports and travellers’ statements refer to undernourishment and deaths from starvation.<sup>4</sup> Studies on historical nutrition and agrarian metabolism describe a decrease in Spanish agricultural production and meat consumption, and highlight the colossal disaster that these post-war years represented for the population.<sup>5</sup> During these years of hunger, the Spanish minister José Luis Arrese allegedly told Franco that dolphin meat sandwiches and fish-flour bread were a feasible solution for starvation.<sup>6</sup> Behind the minister’s odd statement there was a sense of uneasiness with the pervasive hunger that overwhelmed the country. But there was something else, something central to the economic approach of the period: the aspiration of using available national resources to the maximum extent in the name of self-sufficiency. This was the main premise of the autarkic policies followed by Francoism since the Civil War.

Under the circumstances of agricultural collapse and widespread hunger, fishing seemed to offer an inexhaustible source of food. In contrast to the agricultural crisis and the decreased availability of meat, evidence points to an increase of fish captures and consumption during

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<sup>1</sup> Our translation. See Falange Española Tradicionalista y de las J.O.N.S., *Fundamento de la Nueva España*, Bilbao, 1937.

<sup>2</sup> *Flechas y Pelayos*, 330, April 1 1945, 13.

<sup>3</sup> M. Kurlansky, *Cod: A Biography of the Fish that Changed the World*, London, New York, 1998.

<sup>4</sup> C. Barciela, El fracaso de la política agraria del primer franquismo, in: C. Barciela (Ed), *Autarquía y Mercado Negro: el Fracaso Económico del Primer Franquismo, 1939-1959*, Barcelona, 2003, 55-93; M. A. del Arco Blanco, Morir de hambre. Autarquía, escasez y enfermedad en la España del primer franquismo, *Pasado y Memoria. Revista de Historia Contemporánea* 5 (2006) 241-258.

<sup>5</sup> M. González de Molina, D. Soto, J. Infante, and E. Aguilera, ¿Una o varias transiciones? Nuevos datos sobre el consumo alimentario en España (1900-2008), XIV Congreso de Historia Agraria, Badajoz, 7-9 Noviembre 2013.

<sup>6</sup> R. Garriga, *Franco - Serrano Súñer, un Drama Político*, Barcelona, 1986, 116; H. Saña, *El Franquismo sin Mitos: Conversaciones con Serrano Súñer*, Barcelona, 1982, 146-147.



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the post-war years.<sup>7</sup> In some regions, fish made up for the lack of land animal protein, contributing much-needed fat, fat-soluble vitamins and phosphorus to the daily diet of Spanish people.<sup>8</sup> However, applying the idea of ‘national’ resources to fishing was problematic. In the 1940s, Exclusive Economic Zones (EEZ) had not yet been established, meaning that the seas – outside the narrow perimeter of territorial waters – were unowned.<sup>9</sup> Increasing fishing captures was mostly a matter of developing bigger and more powerful fleets that could expand all over the world if necessary. The open seas remained, in the words of a Francoist official, an ‘unclaimed latifundium’.<sup>10</sup>

In what follows, we use archival sources and scholarship from the history of science and technology to explore the main characteristics and consequences of the autarkic fishing policies in Spain in the period 1939-1951. Following the approach of historians of science Tiago Saraiva and Norton Wise, we understand the word ‘autarky’ as the conflation of meanings between the ideas of self-sufficiency (autarky, from Greek *autarkeia*) and self-rule (autarchy, from Greek *autarchia*).<sup>11</sup> These authors have argued that the intimate relation between these two concepts is a characteristic feature of fascist regimes. On this basis, we intertwine the study of import-substitution policies and other measures towards economic self-sufficiency (autarky) with a focus on the top-down, militaristic and social repressive dimension of these policies (autarchy).<sup>12</sup> We argue that Francoist autarkic policies for the fisheries sector had far-reaching social and environmental effects, and that an analysis of these policies may help explain some of the present characteristics of the Spanish fishing fleet, including its overcapacity in some segments or the low level of union activities in small-scale fisheries.

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<sup>7</sup> On fish consumption, see S. Piquero and E. López, *El consumo de pescado en España. Siglos XVIII-XX. Una primera aproximación*, communication at XI Congreso de Historia Agraria, Aguilar de Campoo, 2005. On fish captures, see A. Carreras and X. Tafunell (Coords), *Estadísticas Históricas de España, Siglos XIX-XX*, Bilbao, 2005, 352-356.

<sup>8</sup> M. I. del Cura and R. Huertas, *Alimentación y Enfermedad en Tiempos de Hambre. España 1937 – 1947*, Madrid, 2007, 80, 134.

<sup>9</sup> Before the establishment of EEZ, each country claimed different ranges for territorial waters, usually less than six nautical miles. On the historical emergence of property in the sea, see L. Campling and E. Havice, *The problem of property in industrial fisheries*, *The Journal of Peasant Studies* 41:5 (2014) 707-727.

<sup>10</sup> J. Lledó, *La Pesca Nacional*, Madrid, 1943, 14-15.

<sup>11</sup> T. Saraiva and M. N. Wise, *Autarky/autarchy: genetics, food production, and the building of fascism*, *Historical Studies in the Natural Sciences* 40:4 (2010) 419-428. The conflation of meanings happens both in the English and Spanish languages.

<sup>12</sup> Throughout the article, we use ‘autarky’ to refer to the dual concept. ‘Autarchy’ is used only when we explicitly intend to emphasise its socio-political and repressive dimension.

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Our research is relevant to historical geography and environmental history for several reasons. First, discussions of historical conceptions of autarky reveal the relations of societies with their environments and the natural resources they consume. As David Harvey put it, and Erik Swyngedouw exemplified with the Spanish case in his recent book on water, all political-economic projects are ecological projects, and vice-versa.<sup>13</sup> The case of Spanish autarky and its relation to fisheries governance was no exception. Examining historical cases of national attempts at self-sufficiency in different areas of the economy and society can bring insights into the political configurations established and the geographical scales involved to achieve those goals. Moreover, while nowadays self-reliance and autonomy are usually associated with bottom-up environmental discourses from the left, several historical examples show how similar principles were applied by right-wing dictatorships in a top-down manner.

Second, the importance of feeding national populations in times of scarcity such as the Second World War is now receiving significant attention.<sup>14</sup> The role of fishing, however, has been less researched than the equivalent roles of agriculture or livestock. By exploring the Spanish case, we aim to show the importance of fishing captures for feeding the population in periods of scarcity, in a way comparable to the work of Ole Sparenberg for Nazi Germany and William Tsutsui for Japan.<sup>15</sup> Here the seas were still perceived as inexhaustible sources of food, and therefore conceived as spaces where it was possible to ‘reap without sowing’ or ‘harvest fruits without planting seeds’.<sup>16</sup> Nazi discourses of the seas as the ‘last remaining colony’ resonate with Francoist visions of maritime routes as part of the lost Spanish Empire to be regained. Last but not least, Franco’s dictatorship and the case of the Portuguese Estado Novo under Salazar also show significant similarities.<sup>17</sup>

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<sup>13</sup> D. Harvey, *Justice, Nature and the Geography of Difference*, Cambridge, 1996, 182; E. Swyngedouw, *Liquid Power: Contested Hydro-Modernities in Twentieth-Century Spain*, Cambridge, 2015, 7, 36.

<sup>14</sup> L. Collingham, *The Taste of War. World War II and the Battle for Food*, New York, 2012.

<sup>15</sup> O. Sparenberg, Limits to growth in the expansion of 1930s German fishery, *Studia Atlantica* 13 (2009) 139-151; O. Sparenberg, Perception and use of marine biological resources under national socialist autarky policy, in: F. Uekötter, U. Lübken (Eds), *Managing the Unknown*, New York, 2014, 91-121; W. M. Tsutsui, The pelagic empire: reconsidering Japanese expansion, in: I. J. Miller, J. Adeney, B. L. Walker (Eds), *Japan at Nature's Edge*, Honolulu, 2013, 21-37.

<sup>16</sup> On Germany, see Sparenberg, Perception and use, 94-95. On Spain, see Lledó, *La Pesca Nacional*, 14-15. On Italy, see almost the same expression in M. Armiero, L'Italia di Padron 'Ntoni. Pescatori, legislatori e burocrati tra XIX e XX secolo, in: P. Frasciani (Ed), *A vela e a Vapore*, Roma, 2001, 179.

<sup>17</sup> I. Amorim and E. López, The fisheries of the Iberian Peninsula in modern times, in: D. Starkey, H. Heidbrink (Eds), *A History of the North Atlantic Fisheries: Volume 2*, Bremen, 2012, 254-276.

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Finally, marine historical research has called for more data and research on historical fisheries.<sup>18</sup> With this in mind, our research is relevant to understanding how Spain became one of the world’s major fishing countries during the second half of the twentieth century.<sup>19</sup> While the importance of Spanish fisheries can be traced to the ancient past, modern geographical expansion of the Spanish fishing fleet tends to be explained in relation to the policies adopted during the 1960s.<sup>20</sup> We argue that some of its current characteristics can be better understood by looking at the evolution of Spanish fisheries policies during the period 1939-1951.

We have chosen our period of study as the years of major fascist influence in Franco’s regime, and subsequent commitment to autarkic economic guidelines. Francoism was born as a result of a military coup and then three years of civil war when Franco received substantial support from Fascist Italy and Nazi Germany. Different right-wing tendencies (Catholic, monarchic and fascist) originally supported the coup. However, the first period of the dictatorship is usually regarded as the time when the fascist sectors (usually identified with the state’s single-party, Falange Española) had more influence over national policies.<sup>21</sup> The years 1939-1951 are also the period of maximum influence of Juan Antonio Suanzes (1891-1977), president of the Instituto Nacional de Industria (INI) from its establishment in 1941 and twice minister of industry and trade (1939-1941, 1945-1951).<sup>22</sup> As a result of occupying both these positions, between 1945 and 1951 he centralised all the power to promote the autarkic policies which he fully endorsed.<sup>23</sup> As we will see, both as a minister and as president of INI, Suanzes was a significant figure in developing fisheries policy. His ousting as a minister with the change in the Spanish government of 1951, together with the division of the Ministry of Industry and Trade into two different ministries, marks the end of our

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<sup>18</sup> D. Pauly, Anecdotes and the shifting baseline syndrome of fisheries, *Trends in Ecology and Evolution* 10 (1995) 430. See also K. Schwerdtner, P. Holm, L. Blight, M. Coll, A. Macdiarmid, et al., The future of the oceans past: towards a global marine historical research initiative, *PLoS ONE* 9:7 (2014).

<sup>19</sup> Immediately before our period of study, the major fishing countries of the world were Japan, USA, Korea, USSR and Norway. See D. Sahrhage and J. Lundbeck, *A History of Fishing*, Berlin, 1992, 167. For statistical data on the Spanish fleet and landings, see Carreras and Tafunell (Coords), *Estadísticas Históricas de España*, 352-356. For statistical information about the present-day fleet size, economic situation and captures, see the Spanish Ministry website: <http://www.magrama.gob.es/es/estadistica/temas/estadisticas-pesqueras/pesca-maritima/default.aspx> Last accessed 25 August 2015.

<sup>20</sup> P. Andrade, El proceso de expansión de las pesquerías españolas, *Información Comercial Española* 478 (1973) 83-94.

<sup>21</sup> Falange’s program was influenced by Italian Fascism, featuring key elements such as the idea of Empire, a totalitarian perspective of the State or the aim to have unions that included both workers and managers/owners. J. G. Pecharromás, *El Movimiento Nacional (1937-1977)*, Barcelona, 2013.

<sup>22</sup> A. Ballester, *Juan Antonio Suanzes, 1897-1977. La Política Industrial de la Posguerra*, Madrid, 1993.

<sup>23</sup> A. Gómez Mendoza, El fracaso de la autarquía: la política económica española y la posguerra mundial (1945-1959), *Espacio, Tiempo y Forma, Serie V, Historia Contemporánea* 10 (1997) 297-313.

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period of study. Coinciding with the resumption of diplomatic relations with the USA, this change opened the way to a first timid wave of liberalization measures that economic historians identify as an inflection point for the Spanish economy. During the early 1950s, several Spanish economic indicators finally reached pre-Civil War levels.<sup>24</sup>

Our research relies on several primary sources. First, we have examined the personal archives of Juan Antonio Suanzes at the INI archive. We have complemented this with a review of the press, especially *Industrias Pesqueras*, one of the main bi-weekly publications from the Spanish fisheries sector. We have also taken advantage of the digitisation of the Francoist newsreels, *Noticiarios y Documentales* (No-Do). Finally, we have used the recently digitised collections of Luis Carrero Blanco (1904-1973), navy officer and one of Franco’s closest advisors, located in the Navarra University General Archive.

The paper is organised as follows. The next section reviews current theoretical approaches using the concept of autarky in the fields of history of science and Spanish contemporary history. We also discuss the evolving understandings of autarky during early Francoism and what it meant in practice. In the section that follows, we analyse how the autarchic-repressive period following the Spanish Civil War changed the organisation of the fishing sector. The next two sections then track the intimate connections between militarism, the reorganisation of the state administration responsible for fisheries and the policies designed to increase the size of the fleet. Along these lines, in the last substantive section, we assess the plans made for the geographical expansion of the fleet in the Spanish colonies and elsewhere, as well as the promotion of consumption measures. Finally, in the conclusion, we point out the long-lasting effect of the autarkic policies and underline the relevance of research on autarky for historical geography.

## 2. Autarky / autarchy

### 2.1 Current Theoretical Approaches to Autarky

While Geography as a discipline has engaged for a long time with the relation between society and nature and the interaction between humans and the environment, relatively little

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<sup>24</sup> On the oust of Suanzes, see A. Gómez Mendoza, De mitos y milagros, in: A. Gómez Mendoza (Ed), *De Mitos y Milagros. El Instituto Nacional de Autarquía (1941-1963)*, Barcelona, 2000, 17-34. On the autarkic period, the slow economic recovery, and 1951 as a departing date of economic growth, see J. Catalán, Franquismo y autarquía, 1939-1959: enfoques de historia económica, *Ayer* 46 (2002) 263-283.

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work has addressed the concept and historical applications of autarky.<sup>25</sup> Despite this omission, autarky often appears in dictionaries of the discipline. In some cases, the concept is simply defined as ‘National economic isolation of a country achieved creating a self-sufficient independent economy’, and no distinction is made between ‘autarchy’ and ‘autarky’.<sup>26</sup> Other dictionaries, however, explicitly point out the differences between the two words, defining autarchy as ‘absolute sovereignty, autocratic rule, despotism’, and autarky as ‘economic self-sufficiency’.<sup>27</sup> Indeed, the history of science literature, and certain Spanish contemporary historians, have highlighted the duality of autarky/autarchy as a useful theoretical concept. On the one hand, Tiago Saraiva and Norton Wise claim that the fusion ‘in usage, spelling and meaning’ between self-sufficiency (autarky) and self-rule (autarchy) is fundamental for understanding fascist regimes.<sup>28</sup> While the notion of ‘autarky’ focuses on political economy and the improvement and exploitation of the nation’s resources, the idea of ‘autarchy’ ensures that attention remains anchored to top-down authoritarian control. Likewise, in order to unfold his interpretation of the Francoist dictatorship, historian Michael Richards employs the same etymologic discussion of the dualism between autarky and autarchy.<sup>29</sup> Richards relates the notion of ‘autarchy’ to social control and repression. In his interpretation, Francoist autarchy involved sealing Spain off from the outside world in order to treat the country ‘under conditions of quarantine’. Richards understands self-sufficiency ‘in the sense of a denial of any political, cultural or economic dialogue about the future’, and regards this as a fundamental part of the formation of the Francoist regime.<sup>30</sup>

Put together, Saraiva and Wise’s interpretation of ‘autarky’ as a defining feature of fascism and Richards’ attention to the underlying social and repressive dimensions of self-sufficiency policies in Spain demonstrate the potential of this dual concept. If applied within historical geography, autarky/autarchy can intertwine both socio-political and economic/environmental concerns. Moreover, it can bring together the Spanish government’s management of national resources with the fascist discourse of ruralism. As Marco Armiero and Wilko von

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<sup>25</sup> T. J. Baerwald, Prospects for geography as an interdisciplinary discipline, *Annals of the Association of American Geographers* 100:3 (2010) 493-501; K. S. Zimmerer, Retrospective on nature–society geography: tracing trajectories (1911–2010) and reflecting on translations, *Annals of the Association of American Geographers* 100:5 (2010) 1076-1094.

<sup>26</sup> V. M. Koltzyakov and A. I. Komarova, *Elsevier's Dictionary of Geography*, Boston, 2006, 56.

<sup>27</sup> F. J. Monkhouse, *A Dictionary of Geography*, Chicago, 2009, 25.

<sup>28</sup> Saraiva and Wise, *Autarky/autarchy*, 424

<sup>29</sup> M. Richards, *A Time of Silence. Civil War and the Culture of Repression in Franco's Spain, 1936 – 1945*, Cambridge, 1998, 93-98.

<sup>30</sup> Richards, *A Time of Silence*, 174.

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Hardenberg have argued, the improvement of peasants and rural land coalesced with the idea of modernisation and improvement of the national territory in fascist ruralist narratives.<sup>31</sup> As we will see, this also applied to fishers and their fishing waters.

Finally, a clear connection can be made between policies aiming at self-sufficiency and militarism. Trying to reach self-sufficiency was a way to prepare for war, and the impossibility of achieving it was a justification for militarism and territorial expansion in order to gain access to more land and resources.<sup>32</sup> This applies both to Mussolini’s war in Abyssinia and to Hitler’s justification for the drive towards the East.<sup>33</sup> Referring to Spain and Portugal’s unequal exchanges with their colonies during this period, Gervase Clarence-Smith emphasises the existence of a ‘conscious policy of imperial autarky’, meaning an intensification of the unequal economic relations with the colonies in order to fulfil metropolitan needs.<sup>34</sup> This shows how the concept of autarky necessarily involves issues of scale.

### 2.2 Franco’s Autarky in Context

*Spain is a privileged country that can meet its own needs ... We have no need to import anything.*

Francisco Franco, 1938, *Palabras del Caudillo*<sup>35</sup>

While economic historians acknowledge the trends of protectionism in Spanish contemporary history as part of the widespread economic nationalism of the 1930s, they have also underlined that the Francoist regime introduced a qualitative change in this trend by actively pursuing an autarkic political economy.<sup>36</sup> To explain this change, some authors have consistently pointed to Franco’s ambition of imitating the autarkic military projects of his key

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<sup>31</sup> M. Armiero and W. G. Hardenberg, Green rhetoric in blackshirts: Italian fascism and the environment, *Environment and History* 19 (2013) 283-311. See also M. Armiero, Making Italians out of rocks: Mussolini’s shadows on Italian mountains, *Modern Italy* 19:3 (2014) 261-274.

<sup>32</sup> G. Tortella and S. Houpt, From autarky to the European Union: nationalist economic policies in twentieth-century Spain, in: A. Teichova, H. Matis, J. Pátek (Eds), *Economic Change and the National Question in Twentieth-Century Europe*, Cambridge, 2000, 136.

<sup>33</sup> Saraiva and Wise, Autarky/autarchy, 425-426.

<sup>34</sup> G. Clarence-Smith, The impact of the Spanish Civil War and the Second World War on Portuguese and Spanish Africa, *The Journal of African History* 26 (1985) 314-315.

<sup>35</sup> Cited in J. Fontana, Naturaleza y consecuencias del franquismo, in: J. Fontana (Ed) *España bajo el Franquismo*, Barcelona, 1986, 29.

<sup>36</sup> On the change implemented by Francoism, see Tortella and Houpt, From autarky to the European Union, 129-136. In the world context of economic nationalism, import substitution industrialisation (ISI) was one of the

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allies during the Spanish Civil War: Nazi Germany, Fascist Italy and Salazar’s Portugal.<sup>37</sup> Others have also stressed the economic ideas of high Francoist officials like Suanzes or Franco himself, who were concerned with developing military power while ensuring political independence by diminishing external dependencies.<sup>38</sup>

For years, however, this was not the predominant interpretation. In a similar vein to the historiography that regards the Francoist dictatorship simply as an authoritarian regime, the autarkic policy guidelines of the first decades were explained as a strategy that Francoism was mostly forced to choose, thus underplaying its ideological connection to fascism.<sup>39</sup> Self-sufficiency policies, from this point of view, were imposed by the circumstances of the Second World War and the later diplomatic ‘isolation’ of Spain once its former allies had been defeated. All in all, the interpretation of autarky as a reactive policy has not survived the slow opening of Spanish archives to enquiry. Consistent research on diplomatic and economic history has shown the inconsistencies of this analysis, and it is now usually accepted that autarkic policies were the choice of the Francoist regime.<sup>40</sup> There is also a consensus on the negative impact of autarkic policies on the Spanish economic recovery after the Civil War, which took longer than in other European countries with higher war-related costs.<sup>41</sup>

In practice, autarkic political economy aimed at reducing imports and increasing exports, with the overall objective of reducing the balance of payments and lessening economic dependency. The programme of ‘national improvement’ entailed an ambitious industrialisation plan aimed at substituting imports and providing jobs by using available resources to the maximum extent. It also involved pervasive state intervention in markets, carried out through a wide array of regulations, including price setting and rationing of basic goods, the establishment of input quotas for economic sectors and a tight control of imports

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major policy mechanisms. See for instance A. O. Hirschman, The political economy of import-substituting industrialization in Latin America, *The Quarterly Journal of Economics* 1 (1968) 1-32.

<sup>37</sup> For the specific connections of these countries to the Spanish autarkic policies, see J. Catalán, *La Economía Española y la Segunda Guerra Mundial*, Barcelona, 1995, 59-75.

<sup>38</sup> Fontana, *Naturaleza y consecuencias del franquismo*, 24-38.

<sup>39</sup> J. J. Linz, Una teoría del régimen autoritario, in: S. G. Payne (Ed), *Política y Sociedad en la España del Siglo XX*, Madrid, 1964, 205-263. J. Velarde, Epílogo, in: M. Fraga, J. Velarde, S. Del Campo (Eds), *La España de los Años 70*, Vol. II, Madrid, 1972-1974, 981-1031.

<sup>40</sup> See Á. Viñas, *Guerra, Dinero, Dictadura: Ayuda Fascista y Autarquía en la España de Franco*, Barcelona, 1984, 205-237; Á. Viñas, Franco's dreams of autarky shattered: foreign policy aspects in the run-up to the 1959 change in Spanish economic strategy, in: C. Leitz, D. J. Dunthorn (Eds), *Spain in an International Context, 1936-1959*, New York, 1999, 299-318. C. Barciela, Autarquía y mercado negro. La auténtica economía política del franquismo, in: Á. Viñas (Ed), *En el Combate por la Historia*, Barcelona, 2012, 648.

<sup>41</sup> Catalán, *Franquismo y autarquía*, 263-283.

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and exports. The application of autarkic regulations by the Francoist state caused major economic dysfunctions, fueling speculation and a thriving parallel economy in the black market.<sup>42</sup>

Yet, all these political and economic measures have also to be interpreted from a military standpoint. Following the examples of the autarkic military projects of the Axis countries, militarism became interwoven with autarky and it is essential to understand the Francoist obsession with national production and industrial development.<sup>43</sup> More than as an end in itself, autarky was understood by high Francoist officials as a fundamental tool in a context of potential military conflict.

### 2.3 Autarky as a Weapon

Undoubtedly the most important official in relation to the design and implementation of autarkic industrial policies was Suanzes, a former engineer in the Spanish navy. The crucial law regarding the reconstruction of the Spanish fishing fleet was prepared under his first mandate as minister of industry and trade. Suanzes was always a firm advocate of industrialisation policies, and held strong political views on the role of the economy, which he considered should be set ‘under the strict rule of politics, or better said, under the political aims of the State’.<sup>44</sup> It is within this framework of subordination, where the political and the technical were given priority over the economic, that he developed autarkic policies even if they were not the most efficient in economic terms. It was production and industrial development that mattered, not comparative or opportunity costs.<sup>45</sup>

Suanzes was the ideologue and the founding president of the Instituto Nacional de Industria (INI), the main institution established by the Francoist state to carry out an autarkic project of industrialisation.<sup>46</sup> INI’s original name sheds light on its unequivocal character: it was going to be called the Instituto Nacional de Autarquía (National Institute of Autarky). A last minute

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<sup>42</sup> On state interventionism and the failure of autarkic agriculture see Del Arco, *Morir de hambre*, 241-258 and Barciela, *El fracaso de la política agraria del primer franquismo*, 66-75; on wheat pricing policies, see Tortella and Houpt, *From autarky to the European Union*, 136-138; on the parallel price systems in the black market and the restrictions on electricity usage, see Catalán, *La Economía Española*, 243-264.

<sup>43</sup> During the 1940s, military expenditure consumed one third of the Spanish budget, reaching its peak in 1945 with 40.3%. See A. Cazorla, *Las Políticas de la Victoria. La Consolidación del Nuevo Estado Franquista (1938-1953)*, Madrid, 2000, 38.

<sup>44</sup> Cited in Ballester, *La Política Industrial*, 98.

<sup>45</sup> F. Comín, *Historia de la Hacienda Pública*, Vol. II, Barcelona, 1996, 346; Tortella and Houpt, *From autarky to the European Union*, 141.



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change at the Council of Ministers changed it to INI and put it under the sole control of the head of the Spanish government.<sup>47</sup> A few months later, after returning from a visit to Germany in June 1942, Suanzes presented his views on autarky in a series of speeches given to high-ranking military officials, which are preserved in INI’s archive.<sup>48</sup> In these select private meetings – when Spain still had volunteer troops side by side with the Wehrmacht on the Russian battlefield – Suanzes associated autarky with the idea of national political independence and rejected the notion of purely economic isolation.<sup>49</sup> However, despite his typically Francoist references to political independence, we cannot lose sight of the political alliances of the period. Suanzes’ intimate knowledge of the Italian and German experiences of autarky, along with the support provided by those countries, is apparent and deeply influenced his personal views.<sup>50</sup> INI, in fact, was partly inspired by the Italian Istituto per la Ricostruzione Industriale.<sup>51</sup> The German connections were also obvious in INI’s most symbolic and expensive project, the creation of a national company to produce synthetic fuels.<sup>52</sup>

According to Suanzes, as a political-economic objective autarky required action on four main fronts: a military force that could ensure political independence; an industrial base that could sustain the rear-guard in case of war; a raw materials policy that would ensure supplies; and sufficient internal and external communications to cover military needs and the transportation of raw materials. To realise all this, industrialisation was the essential step to be taken. In Suanzes’ speeches autarky emerged not as an ideal state of self-sufficiency, but literally as a weapon, a necessary step for a higher capacity of production using national means. Industrial

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<sup>46</sup> On the INI, see P. Martín Aceña and F. Comín, *INI. 50 años de Industrialización Española*, Madrid, 1991; A. Gómez Mendoza (Ed), *De Mitos y Milagros. El Instituto Nacional de Autarquía (1941-1963)*, Barcelona, 2000; E. San Román, *Ejército e Industria: El Nacimiento del INI*, Barcelona, 1999.

<sup>47</sup> Á. Viñas, J. Viñuela, F. Eguidazu, C.F. Pulgar and S. Florensa, *Política Comercial Exterior en España (1931-1975)*, Vol. 1, Madrid, 1979, 317-318.

<sup>48</sup> See Texto taquigráfico de la conferencia pronunciada por el presidente del INI Excmo. Sr. Don Juan Antonio Suanzes Fernández en la Escuela Superior del Ejército sobre el tema Autarquía, part I (11 June 1942), part II (12 June 1942), part III (17 June 1942) and part IV (23 June 1942), Suanzes collections, archive of Instituto Nacional de Industria [hereafter INI]. For a parallel analysis of Suanzes views on autarky, see E. Barrera and E. San Román, Juan Antonio Suanzes, adalid de la industrialización, in: Gómez Mendoza (Ed), *De Mitos y Milagros*, 35-52.

<sup>49</sup> Texto taquigráfico, part I, 12-15, Suanzes collections, INI archive.

<sup>50</sup> For Italy, see Texto taquigráfico, part II, 20; part III, 15, 17; part IV, 32. For Germany, see part I, 5; part II, 23, 31, 36; part III, 17, 27, 33-34; part IV, 18, 32. A few weeks before the battle of Stalingrad, Suanzes referred to the future victory of Axis as the victory of ‘our ideals’, see Texto taquigráfico, part II, 20. Suanzes collections, INI archive. On the technical support of Axis countries, see Catalán, *La Economía Española*, 230-231.

<sup>51</sup> San Román, *Ejército e Industria*, 143-152.

<sup>52</sup> E. San Román and C. Sudrià, Synthetic fuels in Spain, 1942–66: the failure of Franco’s autarkic dream, *Business History* 45:4 (2003) 73-88.

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development was inextricably linked to the military, the central sector guaranteeing political independence. War, therefore, was central to his understanding of independence and autarky.<sup>53</sup>

Suanzes’ private speeches make it clear that an ideological and political intention to follow an autarkic path existed. This choice involved much more than promoting the substitution of raw materials imports by increasingly exploiting Spanish natural resources and the colonial territories in Morocco and Guinea. As stated by high Francoist officials, autarky was intimately connected with the institutional mechanisms of social control.<sup>54</sup> The search for self-sufficiency (autarky) was inextricably intertwined with the shaping of self-rule (autarchy). In the next section, by following Richards’ approach to autarchy as social control we start exploring this blend by focusing on the repression unleashed by the dictatorship on fishers and their associations. The ‘autarkic weapon’, we will demonstrate, was to be used not only to face foreign foes, but also to defeat the enemy within.

### 3. Autarchic reforms in the fishing sector: from *Pósitos* to *Cofradías* through structural repression

The sea was central to the fascist dream of the Falange, Francoism’s single party. Building an empire that was reminiscent of the glorious medieval past was a central objective for the new Spain engendered by the Civil War.<sup>55</sup> In Franco’s words, Spaniards had a ‘marine duty’ to accomplish.<sup>56</sup> However, in order to fit in with this dream fishers and their associations had to be radically transformed.

Immediately before the military coup, during the Second Spanish Republic (1931-1936), fishers were organised through *pósitos* and many other different workers and employers associations. *Pósitos* were organizations which were mostly constructed on the basis of local guild-type structures with medieval origins (*cofradías*).<sup>57</sup> They were configured as local mixed associations where both crew members and vessel owners were represented within a restricted geographical area, and they played an important role in terms of social support for

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<sup>53</sup> Texto taquigráfico, part I, 15, 17. Suanzes collections, INI archive.

<sup>54</sup> Viñas, *Guerra, Dinero, Dictadura*, 216-217; Catalán, *La Economía Española*, 71-72.

<sup>55</sup> I. González-Allende, Eugenio o Proclamación de la Primavera, de García Serrano: narrativa falangista durante la guerra civil, *Letras de Deusto* 102.34 (2004) 77-100, see 87-89.

<sup>56</sup> The collection of Franco’s speeches for 1939-1951 had a specific chapter entitled ‘Sea Politics’. F. Franco, *Textos de Doctrina Política*, Madrid, 1951, 593-698. For this specific speech, 600.

<sup>57</sup> A. Cervera, *Análisis Estratégico de las Cofradías de Pescadores en el Marco de la Economía Social*, PhD dissertation, 2006, Universidad de Cádiz.

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fishers, fisheries management, commercialization and financing.<sup>58</sup> They were not only associations linked by professional interests, they were also community and local organizations linked through family relations.

However, during the first decades of the twentieth century, *pósitos* had not been able to adapt to changes in the fisheries management system. They had been excluded from many decisions in favour of the growing role of the state, while the introduction of new technologies, such as trawling and engines in fishing vessels, had created internal divisions of interests. As a result, their role and representation in the fishing sector was already limited by the 1930s.<sup>59</sup> When facing the class struggles that characterised the years prior to the military coup of 1936, these limitations only deepened.<sup>60</sup> In parallel to *pósitos*, many other types of associations defending class or sectorial interests emerged from the 1900s onwards. These included employers’ associations and workers’ organizations (unions, cooperatives and brotherhoods, among many others) of different tendencies. All this diversity would be wiped away as a result of the Spanish Civil War.<sup>61</sup>

The military coup unleashed a fierce repression in the regions controlled by Franco.<sup>62</sup> Following other fascist regimes, all political parties except Falange were prohibited. All unions were forbidden and workers and employers were legally forced to join the so-called ‘vertical unions’.<sup>63</sup> These changes had important consequences for the fisheries sector, since they forbade all unions and workers’ associations and threatened the confiscation of their properties. Many of their union leaders were murdered without trial, or persecuted and jailed due to their political activities. The precise number of deaths is unknown, but included a few hundred fishers in Galicia, with the national total probably reaching thousands.<sup>64</sup> Freedom of

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<sup>58</sup> J. L. Alegret, D. Symes, and N. Steins, Experiences with fisheries co-management in Europe, in: D. K. Wilson, J. R. Nielsen, P. Degnbol (Eds), *The Fisheries Co-management Experience. Accomplishments, Challenges and Prospects*, London, 2003, 119-133. A. Ansola, Una pesca feliz. A propósito de Alfredo Saralegui y sus pósitos de pescadores (1915-1936), communication at VIII Congreso de la Asociación Española de Historia Económica, 2005.

<sup>59</sup> J. L. Alegret, Space, resources and history: the social dimension of fisheries in the Southwest Mediterranean, in D. Symes (Ed), *Europe's Southern Waters: Management Issues and Practice*, Oxford, 1999, 55-64.

<sup>60</sup> D. Pereira, Capitalismo pesquero y sindicalismo en la España de anteguerra: la Federación Nacional de Industria Pesquera, *Revista Andaluza de Antropología* 4 (2013) 122-146.

<sup>61</sup> D. Pereira, Adhesiones y consensos durante el primer franquismo: la Galicia marinera (1936-1954), in: J. Prada (Ed), *No Sólo Represión. La Construcción del Franquismo en Galicia*, Madrid, 2014; D. Pereira, Os pósitos de pescadores: do antigo réxime á IIª República. Unha iniciativa conciliadora?, *Minius, Historia, Arte e Xeografía* 21 (2013) 61-85.

<sup>62</sup> J. Rodrigo, Fascism and violence in Spain: A comparative update, *International Journal of Iberian Studies* 25:3 (2012) 183-199.

<sup>63</sup> Pecharromán, *El Movimiento Nacional*.

<sup>64</sup> D. Pereira, *Loita de Clases e Repression Franquista no Mar (1864-1939)*, Vigo, 2010.

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the press was also abolished. On the other hand, some of the employers’ associations were allowed to continue their activity until they were included in the vertical unions.

Overall, the establishment of the Francoist dictatorship represented a major rupture for *pósitos* and for the entire structural organization of the fishing industry. All members were first required to support Franco’s regime. If their fidelity was not clear, they had to be replaced. A few years later, the *cofradías* law of 21 March 1942 meant the formal end of the *pósitos* institution. All were renamed as *cofradías* and some important changes were introduced both to their structure and social role. In terms of the former, they became highly religious. They were forced to adopt as protectors La Virgen del Carmen – who was the patron saint of the navy – and the local patron saint. Fishing was forbidden on these saints’ days, and fishers were forced to organise public celebration events. Each *cofradía* was linked to a parish, and the priest was member of the *cofradía* directorship. Even more importantly, following the fascist government structures, *cofradías* became part of the vertical union and thus were transformed into ‘public corporations’. As such, they became formally part of the state and were forced to follow national political directives and eradicate any space for class struggle.<sup>65</sup>

In sum, and in disagreement with Francoist officials that emphasised continuities between *pósitos* and *cofradías*, the autarchic reforms that transformed these institutions began a long-lasting fracture in the trajectory and diversity of fishers’ organisations.<sup>66</sup> By instituting *cofradías* as the only associations allowed, and by gluing them to national, municipal and religious structures, autarchic reforms cemented a geographical association between fishers, their fishing areas and the state. Therefore, in the same way that the fascist discourse of ruralism blended peasants with land, autarchic reforms in the fishing sector merged fishers with coasts and in-shore fishing waters.<sup>67</sup>

These connections between the Francoist discourses which romanticised peasant life and fishers’ life deserve attention. While discourses celebrating rural life have been identified as a characteristic feature of fascist regimes – and have been studied in comparative perspective

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<sup>65</sup> Free unions in the fisheries sector remained banned until 1978. Still today, the *Cofradías* status of ‘public corporations’ remains in the legislation. This represents an anomaly in comparison to other sectors, for example the Agrarian Sector equivalents – *Cámaras Agrarias* – that lost this privileged situation long time ago. See J. L. Alegret, *Del corporativismo dirigista al pluralismo democrático: las cofradías de pescadores en Cataluña*, *Revista ERES Serie Antropología* (1989) 161-172.

<sup>66</sup> A. Ansola, ¡Arriba la pesca!: el discurso de la política social pesquera durante el primer franquismo, *AREAS. Revista Internacional de Ciencias Sociales* 27 (2008) 95-103.

<sup>67</sup> Armiero and Hardenberg, *Green rhetoric in blackshirts*, 291.

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for Spain, Italy and Germany – the discourses and policies for fishers remain less well known. In this regard, however, the similarities between Salazar’s Estado Novo in Portugal and Francoist Spain have been underlined.<sup>68</sup> During our period of study, the Instituto Social de la Marina (Navy Social Institute) was the institution in charge of social policies for fishers, under the control of the naval officer Díez de Rivera (Marquis of Valterra). As director of the institute, Díez de Rivera highlighted the religious character of fascism. He regarded fishers as ignorant, simple people who had been misled by communists and anarchists before the war. To regain their minds, he believed that they had to be ‘attacked’ from the sentimental side.<sup>69</sup> Accordingly, a central feature of the institute’s policies was the creation of *casas del pescador* (fishers’ homes), conceived as havens to keep temptations away and promote hygiene and education. Similar institutions had been created in Portugal under Salazar. In the Francoist newsreels of the 1940s we find other examples of these actions, such as public homages to old fishers, or events celebrating public housing being handed over in fishing villages.<sup>70</sup>

Indeed, public housing became another symbol of Francoist social policy for fishers. In 1942, after two years collecting data, architects from Falange published a massive national plan for improving fishers’ housing that envisioned their villages as self-sufficient units.<sup>71</sup> In the context of repression that we have presented, these planned towns exemplify the interwoven ideas of social control and economic self-sufficiency of the post-Civil War period. However, most of these housing projects, like other aspects of social policy, remained incomplete and

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<sup>68</sup> On the comparison with Italy and Germany, see G. Alares, *Ruralismo, fascismo y regeneración. Italia y España en perspectiva comparada*, *Ayer* 83:3 (2011) 127-147; D. Lanero, *Sobre el encuadramiento de los campesinos y la agricultura en el tiempo de los fascismos: una comparación entre nazismo y franquismo*, *Ayer* 83:3 (2011) 53-76. On the comparison between Portugal and Spain, Amorim and López state that ‘for both dictatorships, the fisheries became an ideological reservoir’. Amorim and López, *The fisheries of the Iberian Peninsula*, 253, 261. In relation to the Portuguese fishing policies under Salazar, see also J. Ferreira-Dias and P. Guillotreau, *Fish canning industries of France and Portugal: life histories*, *Economía Global e Gestão* X:2 (2005) 61-79.

<sup>69</sup> P. Díez de Rivera, *La Riqueza Pesquera en España y las Cofradías de Pescadores*, Madrid, 1940, 48-49.

<sup>70</sup> See for instance *Noticiero Documental* [hereafter No-Do], *Entrega de viviendas protegidas a pescadores*, 21A, 24 May 1943, min. 11:20 – 11:46. <http://www.rtve.es/filmoteca/no-do/not-21/1487667/> Last accessed 1 February 2015; NO-DO, *Festejos organizados en Castellón de la Plana. En honor de los pescadores*, 239A, 4 August 1947, min. 4:12 – 5:00. <http://www.rtve.es/filmoteca/no-do/not-239/1468648/> Last accessed 1 February 2015.

<sup>71</sup> Dirección General de Arquitectura, *Plan Nacional de Mejoramiento de la Vivienda en los Poblados de Pescadores*, Madrid, 1942.

would not receive resources until the 1950s and 1960s, when the original projects were significantly modified.<sup>72</sup>

#### **4. Autarky and the military: The place of the fishing sector in the Francoist state**

Social purification and militarization were key parts of the autarkic transformation of the fishing sector in Spain. In the previous section we have seen how fishing associations were purged and workers persecuted. In the present section we address the transformation of the fisheries' state administration as a result of the autarkic project. As we will see, this process was supervised by military authorities who regarded the sector as strategic.

In order for the Francoist dictatorship to reorganise the state administration of fishing, it was first necessary to ensure the loyalty of civil servants by purging those who could not be trusted. However, in this case the process was supervised by the Ministry of Defence.<sup>73</sup> Franco's regime also created a fisheries service that belonged to the Ministry of Industry and Trade, and was under Suanzes' control. In 1939, a specific body to develop fisheries policies was created for the first time in the Spanish state administration. It was the Dirección General de Pesca Marítima (General Directorate of Marine Fisheries) (DGPM). Its dependent position within the Ministry of Industry and Trade was maintained during the entire period of study.<sup>74</sup>

Military presence was pervasive in the reorganised state administration. The DGPM was conceived as a civil-military body with responsibilities for fisheries management, fishing related industries and fisheries statistics. In fact, it was partly controlled by the Ministry of the Navy, which in agreement with the Ministry of Industry and Trade appointed the sub-secretary of fisheries. Only members of the navy could be elected for this position. Moreover, the Ministry of the Navy was directly in charge of many other marine administrative activities.<sup>75</sup>

This military-led repression, administrative purge and reorganisation demonstrate that fishing was not only regarded as a sector that could provide food in substitution for the agricultural sector. It also had strategic functions regarded as vital by the military, which meant that it

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<sup>72</sup> A. Ansola, La intervención estatal en el alojamiento pesquero en el litoral cántabro (1940 – 1980), *Ería* 29 (1992) 253-265; Ansola, ¡Arriba la pesca!, 102.

<sup>73</sup> Aplicación normas depuración de funcionarios, letter signed by Pascual Díez de Rivera, April 4 1939. Suanzes collections, INI archive.

<sup>74</sup> F. Galindo, J. Giráldez and M. Varela, El sector pesquero. La administración pesquera, in: R. Robledo (Coord.) *Historia del Ministerio de Agricultura 1900-2008*, Madrid, 2011, 365.

<sup>75</sup> Galindo et al, El sector pesquero. La administración pesquera, 365.

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needed to be kept under tight control. In the first place, the fishing and merchant fleet were conceived as a natural reserve for the navy in case of armed conflict.<sup>76</sup> During the Civil War, fishing vessels had been useful as a support fleet, and Suanzes and other Francoist naval officers took note of it.<sup>77</sup> As the Marquis of Valterra put it before the end of the war:

In reference to the armed fishing vessels, much can be learned from their current activities. In the future ... all new vessels should be authorised by the general staff of the Navy ... to ensure that they will be useful if needed at some point. Also fishers ... should be trained to acquire the needed capacities.<sup>78</sup>

Archival sources support the connection between the fishing fleet and war in the reasoning of high military officials. In the first stages of the Second World War, one of Franco’s closest advisors, Luis Carrero Blanco, warned that in case of an open conflict with Great Britain fishing would be restricted. He not only highlighted the importance of fish as a foodstuff for Spain, but also underlined the connection of fishing with naval power. In case of war, one of Carrero’s suggestions was to arm fishing boats and transform the long-distance fishing fleet into anti-submarine vessels.<sup>79</sup>

In the second place, from the autarkic perspective the fishing fleet became part of the merchant fleet and therefore had to be ready to take charge of the transportation of raw materials. This subordination materialised in 1942 with the incorporation of the DGPM into the Subsecretaría de la Marina Mercante (Office of the Merchant Navy).<sup>80</sup> Since Francoist military analysts saw Spain primarily as a peninsula with most of the threats coming by land from the Pyrenees, ensuring enough national merchant fleet capacity to transport raw materials by sea was considered a military priority.<sup>81</sup> Moreover, from Suanzes’ point of view, this could be done by developing the national shipbuilding industry – a sector where INI also

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<sup>76</sup> Galindo et al, *El sector pesquero. La administración pesquera*, 365. See also J. M. Valdaliso, *Programas navales y desarrollo económico: la Empresa Nacional ‘Elcano’ de la marina mercante y el sueño industrializador de J. A. Suanzes (1942-1963)*, *Revista de Historia Industrial* 12 (1997) 151-152.

<sup>77</sup> Hechos y consideraciones sobre la Ley de Crédito Naval, 25 August 1950, 1-2. Suanzes collections, INI archive.

<sup>78</sup> Our translation, Díez de Rivera, *La Riqueza Pesquera*, 35.

<sup>79</sup> See *Consideraciones sobre un plan de operaciones marítimas en caso de intervención de España en la guerra*, 11 November 1940, 5-6, 8. Luis Carrero Blanco collections, Archivo General de la Universidad de Navarra. Díez de Rivera, who had insisted in the military importance of fishing, also highlighted the relevance of fishing captures to make up for the lack of agricultural products. Consejo Técnico de Pesca. Session of 19 May 1945, 3. INI archive.

<sup>80</sup> Galindo et al, *El sector pesquero. La administración pesquera*, 365.

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got involved – thus improving the capabilities of the Spanish navy.<sup>82</sup> As we will see in the following section the expansive merchant marine policy based on these notions shaped the future of the Spanish fishing fleet.

### 5. Increasing national fishing capacity: the autarkic development of the Spanish fishing fleet

*God placed us facing the seas and thus assigned us a marine duty ... [W]e accomplish it both when our merchant fleet ... sails the world and when our fishers, in the hardest of winters, face the raging seas to bring us the cherished fruit of its bosom.*

Francisco Franco, 1947, *Textos de doctrina política*<sup>83</sup>

On 2 June 1939, the Francoist government published the Naval Credit Act, and later the same year the Protection and Reconstruction of the National Fleet Act. Both laws became the most important elements of public intervention in relation to the reconstruction of the merchant and fishing fleets and supported a significant expansion of Spanish fishing activities.<sup>84</sup> The Naval Credit Act, later expanded and renewed, provided ample and cheap credit for ship renewal or the construction of new vessels, with loans up to sixty percent of the investment with very low interest rates (two percent) and repayment periods of up to twenty years. The law was embedded in the autarkic perspective in both discursive and practical terms. It stated the need to reconstruct both merchant and fishing fleets, underlined that they had to become auxiliary navy vessels, and thus conditioned projects to the navy’s approval. Autarkic economic justification was also present in the claim to use national vessels to transport raw materials in and out of Spain. Links with fascist discourses regarding the imperial destiny of Spain were explicit in the law’s preface. Finally, it enacted that ships had to be built or modernised at national shipyards and that their crews had to be Spanish.<sup>85</sup>

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<sup>81</sup> L. Carrero Blanco, *España y el Mar*, Madrid, 1941. For Suanzes, the issue of the merchant fleet had to be addressed from ‘a military point of view’, Texto taquigráfico, part IV, 25-26. Suanzes collections, INI archive.

<sup>82</sup> Hechos y consideraciones, 4, Suanzes collections, INI archive. One of the most important companies established by INI was Elcano, a national shipping company. See Valdaliso, Programas navales y desarrollo económico, and J. M. Valdaliso, *La Empresa Nacional ‘Elcano’ de la Marina Mercante y la Actuación del INI en el Sector Naval durante la presidencia de J.A. Suanzes*, Documento de trabajo 9802, Fundación Empresa Pública, Madrid, 1998.

<sup>83</sup> Franco, *Textos de Doctrina Política*, 600.

<sup>84</sup> A. Sinde, Expansión y modernización de la flota pesquera española tras la Guerra Civil: estado, empresa y construcción naval, *AREAS. Revista Internacional de Ciencias Sociales* 27 (2008) 57-67.

<sup>85</sup> See preface, articles 8 and 10, in Ley instituyendo un sistema de Crédito Naval, *Boletín Oficial del Estado* 158, June 7 1939, 3107 – 3110. On the importance of the naval credit for the fishing fleet, see Sinde, Expansión



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By the end of 1939 the Second World War had started and fish prices were soaring. During the 1940s the combination of growing fish consumption, state controlled prices and the availability of credit boosted the fishing fleet.<sup>86</sup> As a result, during the second part of the decade the fishing fleet recovered from the war and overcame the problems caused by the scarcity of certain materials (especially steel) and limited technological know-how (in relation to diesel engines, for example).<sup>87</sup> Consequently, during the 1940s around 80,000 Gross Registered Tons were built, almost tripling the construction of the previous decade. In terms of beneficiaries of the Naval Credit Act it was the Spanish long-distance cod industry that benefited the most, once the Celtic Sea – the region of the Atlantic Ocean off the south coast of Ireland – and the Grand Banks of Newfoundland were reopened to Spanish fishing vessels after the Second World War. Cod fishing companies successfully captured the act’s resources to build Spain’s biggest fishing fleets.<sup>88</sup> Indeed, this is not surprising if we take into consideration the Francoist authorities’ interest in substituting cod imports as part of their autarkic policies together with the navy’s desire to develop a long-distance merchant fleet for potential military purposes.<sup>89</sup> In contrast, coastal and inshore fleets were ignored.<sup>90</sup>

Overcapacity soon created overfishing problems off the Spanish coasts. These were only partially addressed by limiting some trawling activities in the coastal waters and promoting new fishing areas. The broader environmental problems of overcapacity and overfishing, however, were never really taken into consideration. Suanzes’ retrospective analysis of the impact of the Naval Credit Act, conserved at INI’s archive, sheds light on the approach to this issue. Francoist officials did not analyse the impact of fleet growth on the fisheries sector

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y modernización, 58-59, 64. On the use of naval credit for the merchant fleet, see Valdaliso, *La empresa nacional ‘Elcano’*, 18-22.

<sup>86</sup> On fish consumption, see Piquero and López, *El consumo de pescado en España*, 5-6.

<sup>87</sup> A. I. Sinde, I. Diéguez, and A. Gueimonde, *La difusión de nuevas tecnologías en el sector pesquero español, 1931-1971*, *Historia Agraria* 39 (2006) 313-342.

<sup>88</sup> A. Sinde, *Expansión y modernización*, 59, 64. See also A. I. Sinde, I. Diéguez, and A. Gueimonde, *Spain’s fisheries sector: from the birth of modern fishing through to the decade of the seventies*, *Ocean Development & International Law* 38:4 (2007) 365-367.

<sup>89</sup> Suanzes specifically referred to cod and the military role of the merchant fleet in his 1942 speeches about autarky. About cod, see *Texto taquigráfico*, part II, 5, 8-9; about the merchant fleet, see *Texto taquigráfico*, part IV, 25-26. Suanzes collections, INI archive. The Spanish substitution of cod imports significantly affected traditional exporters to Spain, like Iceland. See A. Yraola, *La repercusión de la Guerra Civil Española en los países nórdicos con especial referencia a Islandia, 1936-39*, *Cuadernos de Historia Contemporánea* 16 (1994), 131-149.

<sup>90</sup> Sinde, Diéguez and Gueimonde, *Spain’s fisheries sector*, 367. In the eve of the Spanish Civil War, the Spanish fishing sector was composed of steamers (almost 50% of Gross Registered Tons), sailing (30%) and motor vessels (20%). This last sector would expand significantly during the 1940s and 1950s. The main Spanish fishing ports were in Galicia and the Basque Country, and their main fishing zones were coastal areas, Bay of Biscay, Africa and the Canary Islands. See Amorim and López, *The fisheries of the Iberian Peninsula*, 273.

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itself, but they framed fishing vessels as part of the much bigger framework of the merchant fleet. More interestingly, Suanzes’ testimony shows that the analysis underlying the law was based on the carrying capacity of the merchant fleet, without any mention of fishing capacity. He also made it clear that the objectives and resources of the law were defined to increase naval construction as far as possible, in order to achieve the maximum amount of raw material transportation by the national fleet.<sup>91</sup> The overcapacity of the fishing fleet, therefore, can be seen as ‘collateral damage’ from the enlargement of the merchant fleet.

After the losses suffered during the Spanish Civil War, the fishing industry had called for vessel reconstruction with the support of the state.<sup>92</sup> The construction push, however, caused fears that fish prices would fall due to overproduction, as had occurred in the early 1930s. Spanish fishing vessels might sail farther and increase captures, but what was to be done with all the fish? Thus, industry periodicals reacted by demanding the promotion of fish consumption, as did some Francoist officials.<sup>93</sup>

### 6. Eat more, fish further!

The option to increase fishing capacity was only viable in an autarkic model if it was linked to growing national fish consumption, rising prices and/or an increase in exports. From an ecological perspective, an increase in fish availability had to be achieved too. In the short term this could only be accomplished by two means: better management of the current resources or an expansion of the fleet into new fishing areas.<sup>94</sup> The latter, as we have seen, coincided with the ideological features of Falange and the importance they assigned to the sea.

The Francoist state administration tried to develop several strategies with different levels of success. Regarding internal consumption, there was a constant call by the industry and relevant fisheries officials to promote fish consumption, as had been done in Nazi Germany.<sup>95</sup> Eating more fish was presented as a way of supporting fishers and ‘contributing to the

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<sup>91</sup> Hechos y consideraciones, 4-5, 8-10, 24, Suanzes collections, INI archive.

<sup>92</sup> See for instance *La flota y la economía pesqueras: recuperación, reconstrucción y control*, *Industrias Pesqueras* 268 (1938) 8-9. On the losses suffered during the war, see Díez de Rivera, *La Riqueza Pesquera*, 34.

<sup>93</sup> El desequilibrio entre la producción y el consumo, *Industrias Pesqueras* 308 (1940) 3. See also Lledó, *La Pesca Nacional*, 104.

<sup>94</sup> For a parallel analysis about the expansion of the French and Spanish tuna fleets between 1860 and 1980, see L. Campling, The tuna 'commodity frontier': business strategies and environment in the industrial tuna fisheries of the Western Indian Ocean, *Journal of Agrarian Change* 12:2-3 (2012) 252-278.

<sup>95</sup> Díez de Rivera, *La Riqueza Pesquera*, 27, 45, 52. Sparenberg, Perception and use, 98-101.

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fatherland’.<sup>96</sup> At the same time, in order to increase profits by using previously discarded parts of the catch, new fish products were researched, such as fish sausages.<sup>97</sup> Nevertheless, we have not found proof of any commercialization of these products, apart from an exchange of letters between Suanzes and one producer, as late as 1951.<sup>98</sup> A relevant policy that was developed by INI was the creation in 1949 of a national network of refrigerators to improve distribution.<sup>99</sup> In the end, in a context of lack of meat and relative cheaper prices of fish, consumption increased significantly during our period of study, growing from 13.9 kg/person/year in 1929-1934 to 17.72 in 1939-1948.<sup>100</sup>

Prices were fixed for pelagic species, which ensured very good revenues for the industrial sector in years with high captures. In 1941, new food policies imposed controls on canned fisheries production. This regulation required producers to sell sixty percent of the production at lower prices for the internal market, while the other forty percent could be exported at an extremely high price. These exports were limited to the Axis nations as part of Francoist political alliances. This intervention severely limited the profit margins for each produced tonne. Consequently, in order to maintain economic returns, these policies provided incentives for the expansion of the fishing fleet into new areas, particularly when sardine captures decreased in 1941-1942.<sup>101</sup>

In line with autarkic perspectives, the geographical expansion of the fleet was also promoted. Since the Second World War had temporarily closed off the Spanish fleet’s traditional access to European waters and the Grand Banks of Newfoundland, the state administration and the industry were forced to explore other territories. They even attempted, with little success, to promote substitute species, like *corvina* (*Johnius regius*) from African waters, for non-available ones, like cod.<sup>102</sup> Similar strategies of species substitution were also tested in Nazi Germany as part of the autarkic project.<sup>103</sup> At the time, Africa and African waters were seen

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<sup>96</sup> Díez de Rivera, *La Riqueza Pesquera*, 54.

<sup>97</sup> La salchicha de pescado, alimento del porvenir, *Industrias Pesqueras* 353 (1942) 13; Los desperdicios de los grandes peces. Su tratamiento, previa clasificación, *Industrias Pesqueras* 359 (1942) 29.

<sup>98</sup> Letter of Javier Sensat to Juan Antonio Suanzes (1 December 1951) and reply (7 December 1951), Suanzes collections, INI archive.

<sup>99</sup> C. Barciela, M. I. López and J. Melgarejo, La intervención del estado en la industria alimentaria durante el franquismo (1939-1975), *Revista Historia Industrial* 25 (2004) 127-161.

<sup>100</sup> Piquero and López, El consumo de pescado en España, 6.

<sup>101</sup> X. Carmona and A. Fernández, La economía gallega en el periodo franquista (1937-1975), in: J. de Juana, J. Prada (Coords), *Historia Contemporánea de Galicia*, Barcelona, 2005.

<sup>102</sup> M. T. Tolosa, La pesca del bacalao en el siglo XX: el caso de la compañía PYSBE, *ITSAS Memoria, Revista de Estudios Marítimos del País Vasco* 3 (2000), 372.

<sup>103</sup> Sparenberg, Perception and use, 94-96.

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as a ‘European extension’ in the Axis view of a future European autarkic economy.<sup>104</sup> In line with this view, Francoist officials regarded Spanish colonies (Morocco and Guinea) as complements to the autarkic efforts.<sup>105</sup>

The defeat of the Axis powers did not substantially change Spanish views regarding colonial fisheries. Archival data shows how in 1945 the Instituto Social de la Marina and the Dirección General de Marruecos y Colonias (General Directorate of Morocco and Colonies) requested INI to establish a public company to exploit the African-Canarian fisheries.<sup>106</sup> The records from INI meetings discussing this proposal show how the Francoist government declined all permits for fishing activities by other nations and reinforced their own research on fishing opportunities in this area.<sup>107</sup> Two years later, *Industrias Pesqueras Africanas, S.A.* (African Fishing Industries, IPASA) was founded. Among its objectives were typical colonialist aims such as spreading so-called ‘civilizing activity’ in Spanish colonies.<sup>108</sup> In Franco’s speech at a visit to IPASA in 1950 he reminded factory workers that Spain was a colonizing country and emphasised its historical fishing rights in the region.<sup>109</sup>

After the Second World War, the need to increase captures was rendered more acute by the increased fishing capacity that political reforms had produced. During the years 1945-1947, the Bay of Biscay and the recovered stocks of the Celtic Sea were the main target of the growing Spanish fleet. After two strong years of overfishing, the Celtic Sea stock collapsed and the Spanish fleet reacted by moving to the less exploited resources of Newfoundland, where cod was relatively abundant.<sup>110</sup> However, unlike the optimistic comic’s representation of cod abundance presented at the beginning of this article, the seas were not entirely filled, nor were their fruits inexhaustible. Ironically, precisely when the Francoist state started dismantling autarkic regulations after the 1950s, the Spanish long-range cod fleet was eventually able to substitute out cod imports. However, in the long term, this expansion also contributed to severe ecological damage.

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<sup>104</sup> See for instance Autarquía continental, *Boletín del Sindicato Mercantil CNS* 6 (1941) 46-48.

<sup>105</sup> S. Suárez, Las colonias españolas en África durante el primer franquismo (1939-1959). Algunas reflexiones, *Espacio Tiempo y Forma, Serie V, Hª Contemporánea* 10 (1997) 315-331, 322-323. In the 1950s, the Gulf of Guinea would see the expansion of tuna fishing. See Campling, The tuna ‘commodity frontier’, 259-260.

<sup>106</sup> Consejo de Administración del Instituto Nacional de Industria. Sessions of 7 March 1945, 2-3, and 6 July 1945, 12-13. INI archive.

<sup>107</sup> Consejo Técnico de Pesca. Session of 19 May 1945. INI archive.

<sup>108</sup> Barciela, López and Melgarejo, La intervención del estado, 136-139.

<sup>109</sup> Franco, *Textos de Doctrina Política*, 721-722.

<sup>110</sup> Sinde, Diéguez and Gueimonde, Spain’s fisheries sector, 364. The failed attempts to find substitutes for cod in Africa and the previous knowledge about Newfoundland’s fisheries are among the reasons for this reaction. See Amorim and López, The fisheries of the Iberian Peninsula, 257.

## 7. Conclusions

In the present paper we have explored the reforms of the Spanish fishing sector during the first years of the Francoist dictatorship by focusing on the notion of autarchy/autarky. Following the history of science literature, we defined autarky as a dual concept merging self-rule with self-sufficiency. On this basis we have followed the thread of repression and militarization within autarkic social reforms, the reorganisation of state administration and the plans to expand the fishing fleet in order to reach self-sufficiency in fish consumption. In the fishing sector, autarkic reforms aimed at increasing fish captures to make up for decreasing agrarian and meat supplies. However, the military purposes of expansion were interwoven with economic aims. In our analysis, autarky emerges as much more than a policy of import substitution: it was a political-economic project necessarily involving social repression. It was, in Suanzes’ words, ‘a weapon’.<sup>111</sup>

The social and industrial transformation fostered by the more fascist-influenced years of the Francoist dictatorship shaped many features of the fishing sector for the subsequent decades. The fishing and merchant sectors were especially controlled by the military because they were regarded as strategic. Nowadays, the consequences of the autarkic reforms are still palpable. On one hand, the long-term impact of repression – four decades without fishing unions – and the continued privileged legal status of *cofradías* contribute to explain the low level of union activities in the small-scale fisheries. This situation is different in the case of industrial fisheries and the processing industry where *cofradías* did not play such an important role and unions have recovered from Franco’s repression. In small-scale fisheries unions have only recently started to reemerge along with new fishers’ associations that defend sectorial interests and not only territorial ones, bringing together, for example, fishers who still use artisanal methods.<sup>112</sup>

Regarding the capacity of the Spanish fishing fleet for fulfilling national consumption and promoting exports – that is, the self-sufficiency element of autarky – it is important to note that a clear subjugation of fishing policies to naval construction policies took place for the first time during this period. The expansion of the merchant fleet, firmly supported by the military, led to an uncontrolled expansion of fishing capacity. A similar trend was repeated

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<sup>111</sup> Texto taquigráfico, part I, 15, 17. Suanzes collections, INI archive.

<sup>112</sup> See for instance the Spanish branch of Medartnet – Mediterranean Platform of Artisanal Fisheries, <http://www.medartnet.org/EN/> Last accessed 20 September 2015.

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after 1961 with the creation of the Fleet Protection and Renewal Act, which provided credit without proper environmental and economic assessments, and thus launched the third expansion of the Spanish fleet that ended with important fishing overcapacity problems that still remain today in some parts of the fleet.<sup>113</sup> However, as we have argued in this paper, the basis for this had been set in 1939.<sup>114</sup>

Together with these two long-term consequences of autarkic policies, the pervasive presence of the military and its intimate relationship with the ideology of the regime emerges as a central point of our research. Firstly, because it shaped the technical characteristics of the fishing fleet’s enlargement, subordinating it to the needs of the navy. And secondly, because autarkic fishing policies reflected the ideology of a Spanish fascism that dreamt of a new imperial Spain and thus celebrated geographical expansion, despite the apparent contradiction with the autarkic ideals. Therefore, it is not strange that the expansion of the fishing fleet first paid attention to the waters of North Africa, near the Spanish colonies, and later turned to Newfoundland. In the fishing sector, Spanish autarky turned into an expansive ecological project, increasing the fleet and sailing to reap the ‘unclaimed latifundium’ of the open seas.

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<sup>113</sup> J. Giráldez, D. Garza and M. Varela, El sector pesquero. Un siglo de pesca en España, in: R. Robledo (Coord), *Historia del Ministerio de Agricultura 1900-2008*, Madrid, 2011, 326-359.

<sup>114</sup> Sinde, Diéguez and Gueimonde, Spain's Fisheries Sector, 366-367.

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RESEARCH ARTICLE V

“European Autarky”: Fascist discourses of continental self-sufficiency in  
Francoist Spain (1940-1943)



Figure 1: “Vitalidad”. Advertisement published in *Ión*, nº18-19, January-February 1943. Source: Biblioteca del Pavelló de la República (UB).

**Research article V: “European autarky”**

**Paper under review in the *Journal of Historical Geography*.**



**“European Autarky”: Fascist discourses of continental self-sufficiency in  
Francoist Spain (1940-1943)**

**Paper under review in the *Journal of Historical Geography*.**

**Co-authored with Marco Armiero.**

**Abstract:** Despite its ephemeral existence and the propagandistic character of many of its manifestations, the Nazi-Fascist project of a “New Europe” has been the subject of growing research attention during the last years. Cultural studies and history of science and technology have provided important insights on the fascist continuities throughout the European continent. Environmental history, which has paid a long-standing attention to conservation policies in fascist regimes and to the relation of human communities with their national(ized) environments, is well positioned to contribute to this research by scrutinizing the implications of the mobilization of the idea of self-sufficiency by fascist regimes at national and continental scale. From this perspective, and throughout an extensive research of the Spanish historical press, this paper discusses a collection of sixty-seven German propaganda advertisements published between 1940 and 1943. The period of study coincides with Franco’s diplomatic position of “non-belligerence” in World War II and the height of Nazi expansion. The propaganda collection advances the idea of a fascist “New Europe” whose economy shall be organized in an autarkic manner at the continental scale, thus restructuring the fascist “national autarkies”. The advertisements celebrate German industrial products together with Spanish raw materials as part and parcel of “New Europe” self-sufficient economy. The analysis of the collection divides advertisements in seven different categories and discusses the reception of the idea of “New Europe” in Francoist Spain. Taken together, the collection reveals a clear overarching discourse of political hierarchy within the envisaged economic architecture of Nazi-dominated Europe.

**Keywords:** New Europe; New Continental Europe; New Order; fascism; autarky; Spain; Francoism; environmental history



**Figure 2:** “EUROPEAN autarky. With the genius of its work Europe creates world-class works for the benefit of Humanity. The yield of its labour, in its soil, coasts, mines, factories and laboratories, guarantees NEW CONTINENTAL EUROPE's OWN LIFE to the European States” (A-375, first published 9 September 1942). Source: Used with permission from the Pavelló de la República (UB, Barcelona) press collections.

### 1. Introduction: “European autarky will knock down US economy”

By late July 1941, the first soldiers of the Blue Division (“División Azul”) – a recently created military unit of Spanish volunteers to fight in the Eastern front – had already departed towards Germany to fight shoulder to shoulder with the Wehrmacht, among massive farewell reunions in Spanish train stations. In a visit to Rome, Ramón Serrano Suñer – Spanish Foreign Affairs minister and a top official of the single-party Falange– declared that the coming defeat of the Soviet Union would condemn any future efforts of the United States, in case it decided to enter the war: “Once Russia is defeated, Europe will be self-sufficient and European Autarky will knock down US economy” – he stated. The participation of the US in the war would only, in the words of Serrano Suñer, “perfect the European union already manifested in the fight against Soviet Russia”.<sup>1</sup>

Around the same dates that the Spanish Foreign Minister celebrated fascist unity in Europe, the German Chamber of Commerce in Spain launched an art contest with the collaboration of Falange. In a public announce in the national press, it called upon Spanish artists to illustrate the motto “Our New Continental Europe”. After receiving more than 250 originals, an exhibition of 60 selected pictures was inaugurated later that year at the Palace of the Press in Madrid city center. The picture “European Autarky” (in all probability A-375, see Figure 2) earned the first prize.<sup>2</sup>

Both the words of the Spanish Foreign Minister and the contest organized by the German Chamber of Commerce are examples of the discourse of pan-European unity promoted by Nazi Germany. The so-called “New Europe” or “New Continental Europe” was a Nazi discourse of European reorganization which emerged after the French defeat in 1940 and gained momentum after the invasion of the Soviet Union. Most of the discussions and planning about the future of the continent focused on the reorganization and rationalization of European economy. The renovation of the signature of the Anti-Comintern pact in Berlin (25-27 November 1941), with the attendance of all the Axis representatives and eight more European countries (Bulgaria, Croatia, Denmark, Finland, Hungary, Romania, Slovakia and Spain) was one of its most symbolic performances. However, despite the insistence of certain sectors within Nazi Germany and its Italian allies, no official declaration or project of political union was ever launched. The “New Europe” remained nonetheless a central motive

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<sup>1</sup> *La Vanguardia Española*, 18 July 1941, p. 8; *Heraldo de Zamora*: 14 July 1941, 2.

<sup>2</sup> *Heraldo de Zamora*, 9 October 1941, 1.

## Research article V: “European autarky”

for propaganda – especially as the tide turned against the Axis – presenting World War II as a crusade of European peoples to defend the continent from Bolshevization.<sup>3</sup>

Soon after World War II, amidst the first steps towards European unification, the historiographic efforts to examine the pan-European discourses of National Socialism focused in exposing its utterly propagandistic and cynical character – a mask to the brutal policies of occupation and economic exploitation carried out by Hitler’s Germany throughout occupied Europe.<sup>4</sup> Later work, however, emphasized that the idea that Nazi Germany had a European mission was ingrained in the National-Socialist world-view. Drawing upon pan-European discussions that had influenced Nazi ideology, several high-ranking Nazis perceived an intimate connection between the regeneration of Germany and that of the European continent.<sup>5</sup> By discussing and envisaging the “New Europe”, they mobilized an ensemble of political beliefs rooted in the interwar period and before, which became part and parcel of the racist ideology that configured Nazi European politics.<sup>6</sup> Accordingly, Aristotle Kallis has warned that the Nazi resort to propagandistic uses of the idea of Europe, particularly evident as war difficulties surged, “should not distract from the plethora of NS [National-Socialist] plans for the reorganization of the continent that saw the light in the 1930s and during the early stages of the war”.<sup>7</sup>

Along these lines, recent research has acknowledged the central propagandistic role of the “New Europe” discourse in World War II, but has gone beyond to analyse German and Italian European discourses and politics during a wider period, both on political and economic

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<sup>3</sup> Mark Mazower, *Hitler’s Empire: How the Nazis Ruled Europe* (London & New York: Penguin Books, 2008), 121-125, 320-327, 359-361.

<sup>4</sup> Paul Kluge, “Nationsozialistische Europaideologie,” *Vierteljahreshefte Für Zeitgeschichte* 3, no. 3 (1955): 240–75, cited in Rafael García Pérez, “La Idea de La «Nueva Europa» En El Pensamiento Nacionalista Español de La Inmediata Posguerra, 1939-1944,” *Revista Del Centro de Estudios Constitucionales* 5 (1990): 203–40. For a collection of documents about the National Socialist and Fascist ideas on Europe, see Walter Lipgens, *Documents on the History of European Integration. Volume 1. Continental Plans for European Union 1939-1945* (de Gruyter, 1985), 37-202.

<sup>5</sup> Robert Herzstein, *When Nazi Dreams Come True* (London: Abacus, 1982), cited in Roger Griffin, “Europe for the Europeans: Fascist Myths of the European New Order 1922–1992,” in *A Fascist Century. Essays by Roger Griffin* (Palgrave Macmillan UK, 2008), 132–80, see particularly 149-155. A discussion on the origins of Nazi imperialism and the role of the idea of Europe in Woodruff D. Smith, *The Ideological Origins of Nazi Imperialism* (New York: Oxford University Press, 1986), particularly 30, 36, 78-79, 109-111, 179-181, 254.

<sup>6</sup> Johannes Dafinger, “Student and Scholar Mobility between Nazi Germany and Southern/Southeastern Europe,” in *Nazi Germany and Southern Europe, 1933-45. Science, Culture and Politics*, ed. Fernando Clara and Cláudia Ninhos (Palgrave Macmillan, 2016), 52–67.

<sup>7</sup> Aristotle A. Kallis, *Nazi Propaganda and the Second World War* (New York: Palgrave Macmillan, 2005), 68-70. Roger Griffin concurred that pan-European economic planning was taken seriously by Nazi policy. Griffin, “Europe for the Europeans: Fascist Myths of the European New Order 1922–1992.”, 154-155.

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grounds.<sup>8</sup> Benjamin G. Martin has recently explored the central role of literature, cinema and music in the cultural construction of the “Nazi-Fascist New Europe” project and traced its origins to the mid-1930s.<sup>9</sup> Examining “Axis Internationalism” through the mobility of Spanish health experts within occupied Europe, David Brydan recently asserted that “the ‘New Europe’ deserves to be studied as part of the wider history of internationalism”.<sup>10</sup> At the same time, researchers working on history of science and technology are providing important insights on the circulation of knowledge and the scientific and cultural exchanges organized within fascist regimes throughout the European continent since the 1930s.<sup>11</sup> A recently edited volume on the topic also includes contributions about the colonial cooperation of fascist Italy and Nazi Germany or the Third Reich scientific expeditions to Brazil during the 1930s.<sup>12</sup> The idea of autarky, particularly, has been underlined for its comparative potential within fascist regimes. Norton M. Wise and Tiago Saraiva highlighted how the notion of “autarky” conflated two different terms with different Greek roots: autarky (economic self-sufficiency, from Greek *autarkeia*) and autarchy (absolute or autocratic rule, from Greek *autarchia*). According to them, this very conflation “may serve as a marker of the history of fascism, of the ways in which authoritarian rule in the 1920s and ’30s came to be bound up with the pursuit of economic independence”.<sup>13</sup>

Along these lines, an environmental history standpoint can help identifying certain features of the “New Europe” project that have been studied for the German and Italian Nazi-Fascist regimes. The close identification between nation and nature, the fundamental role attributed to the soil or the importance of the notion of self-sufficiency (autarky) emerge in different forms at the continental scale. Coming from this perspective, this paper presents and discusses a collection of 67 German propaganda advertisements disseminated in the Spanish press between November 1940 and October 1943, in which the concept of “New Europe” occupies a central position. This period coincides quite exactly with the duration of the

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<sup>8</sup> See for instance Davide Rodogno, *Fascism’s European Empire: Italian Occupation during the Second World War* (New York: Cambridge University Press, 2006) and Mazower, *Hitler’s Empire: How the Nazis Ruled Europe*.

<sup>9</sup> Benjamin G. Martin, *The Nazi-Fascist New Order for European Culture* (Harvard University Press, 2016).

<sup>10</sup> David Brydan, “Axis Internationalism: Spanish Health Experts and the Nazi ‘New Europe’, 1939–1945,” *Contemporary European History* 25, no. 2 (2016): 291–311.

<sup>11</sup> Tiago Saraiva, “Fascist Labscapes: Geneticists, Wheat, and the Landscapes of Fascism in Italy and Portugal,” *Historical Studies in the Natural Sciences* 40, no. 4 (2010): 457–98; Lino Camprubi, “One Grain, One Nation: Rice Genetics and the Corporate State in Early Francoist Spain,” *Historical Studies in the Natural Sciences* 40, no. 4 (2010): 499–531.

<sup>12</sup> Fernando Clara and Cláudia Ninhos, eds., *Nazi Germany and Southern Europe, 1933-45. Science, Culture and Politics* (Palgrave Macmillan, 2016).

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Francoist diplomatic position of “non-belligerence” during World War II, which positioned Spain as a collaborator of the Axis.<sup>14</sup> To our knowledge, no similar collection has been compiled for any European country, and only one research article partially identified this collection before. Among his research on propaganda in Francoist Spain, Professor Carlos Velasco published several articles during the 1980s and 1990s. One of them compiled 21 advertisements and identified them as Nazi propaganda. However, several categories of advertisements were omitted and the institution producing the propaganda was not identified.<sup>15</sup> Complementarily, Professor Rafael García Pérez explored in a series of articles the cultural reception of the idea of “New Europe” in Spain, but without making any reference to visual propaganda.<sup>16</sup> Building on their contributions, the present paper presents an expanded propaganda collection on the “New Europe” theme and examines it from the perspective of Environmental History. Additionally, by examining the propagandistic imaginaries of the “New Europe” circulated in Spain, this paper contributes to the study of geographical ideas during World War II.<sup>17</sup>

The article is organized as follows. After this introduction, section 1 describes the collection of advertisements, dividing it into seven categories. A table is annexed at the end of the paper with the details of each advertisement (dates of publication, newspapers and magazines where it has been located, etc.). Section 2 contextualizes the collection within the wider reception of the idea of “New Europe” in Francoist Spain and highlights the scalar tensions between the national and continental projects of implementation of an autarkic economy. Next, section 3 examines the intertwined notions of nature and nation in the “New Europe” discourse through some of the advertisements produced by Spanish artists for the public contest and exhibition organized by the German Chamber of Commerce. Special attention is devoted to the raw materials presented as natural to the Spanish nation, as well as to the

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<sup>13</sup> Tiago Saraiva and M. Norton Wise, “Autarky / Autarchy: Genetics, Food Production, and the Building of Fascism,” *Historical Studies in the Natural Sciences* 40, no. 4 (2010), 424.

<sup>14</sup> On the differences between neutrality and non-belligerence, see Antonio Marquina, “The Spanish Neutrality during the Second World War,” *American University International Law Review* 14, no. 1 (1998): 171–84.

<sup>15</sup> Carlos Velasco Murviedro, “Propaganda y Publicidad Nazis en España durante la Segunda Guerra Mundial: Algunas Características,” *Espacio, Tiempo y Forma* 7 (1994): 85–107.

<sup>16</sup> See García Pérez, “La Idea de La «Nueva Europa» En El Pensamiento Nacionalista Español de La Inmediata Posguerra, 1939-1944” and Rafael García Pérez, “España En La Europa Hitleriana,” *Espacio, Tiempo Y Forma. Serie V. Hª Contemporánea* 7 (1994): 35–50.

<sup>17</sup> On the role of European continental geographers in relation to World War II, see a recent special issue in the *Journal of Historical Geography*, Daniel Clayton and Trevor J. Barnes, “Continental European Geographers and World War II,” *Journal of Historical Geography* 47 (2015): 11–15. One of the articles of the collection refers to the circulation of the “New Europe” concept in Denmark and northern countries, see Henrik Gutzon Larsen, “Geopolitics on Trial: Politics and Science in the Wartime Geopolitics of Gudmund Hatt,” *Journal of Historical Geography* 47 (2015): 29–39.

notions of self-sufficiency, soil and vitality, central in several of the illustrations. The concluding remarks summarize the value of this propaganda collection and underline the potential of Environmental History to contribute to the analysis of Nazi-Fascist “New Europe”.

## 2. The collection of propaganda

By 1939 and for the following years, Francoist Spain hosted the largest German embassy in the world.<sup>18</sup> During the Spanish Civil War (1936-1939), German and Italian support had been crucial for tipping the balance in favor of the military rebels led by Franco. Closely associated with the Axis – Spain first subscribed the Anti-Comintern pact in 1937 – Franco abandoned neutrality in June 1940 and negotiated with Germany its entry to World War II. The Spanish territorial ambitions in Africa, rejected by Hitler, prevented the full involvement of Spain in the conflict. However, the Francoist government provided a 50,000 strong division of volunteers for the Eastern front, subscribed a diplomatic agreement to provide several thousands of workers to the German industries and delivered a continuous stream of raw materials crucial for the German war effort – including the much needed wolfram mineral.<sup>19</sup> Altogether, it maintained an ambivalent position of non-belligerence until November 1943, when it withdrew the Blue division of Spanish volunteers from the Eastern front and returned to neutrality. During these years the sometimes flagrant cooperation of the Francoist government with the Axis angered the allies and was later paid with diplomatic isolation in the immediate aftermath of the war.<sup>20</sup>

Despite the importance of German espionage and propaganda in Spain has been widely acknowledged, few extensive empirical compilations of the propagandistic materials propelled by German institutions in Spain have been produced.<sup>21</sup> This may be due to the

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<sup>18</sup> Stanley G. Payne, *Franco and Hitler. Spain, Germany and World War II* (New Haven & London: Yale University Press, 2008), 115.

<sup>19</sup> On the pro-Axis activities of Spain during the war, see Manuel Ros Agudo, *La Guerra Secreta de Franco, 1939-1945* (Barcelona : Crítica, 2002). On the enlistment of Spanish citizens to work in Germany and German occupied countries, see Hartmut Heine, “El Envío de Trabajadores Españoles a La Alemania Nazi, 1941-1945,” *Migraciones y Exilios* 7 (2006): 9–26. Regarding wolfram trade, see Joan Maria Thomàs, *La Batalla Del Wolframio: Estados Unidos Y España de Pearl Harbor a La Guerra Fría (1941-1947)* (Madrid: Cátedra, 2010).

<sup>20</sup> On the Spanish diplomatic isolation and the relations with the US between 1945 and 1950, see Ángel Viñas, *En Las Garras Del Águila: Los Pactos con Estados Unidos, de Francisco Franco a Felipe González (1945-1995)* (Barcelona : Crítica, 2003), 23-83.

<sup>21</sup> See the aforementioned work by Velasco Murviedro, “Propaganda y Publicidad Nazis En España Durante La Segunda Guerra Mundial : Algunas Características”. The work of Ingrid Schulze also stands out, describing the different activities of the German embassy in Spain and lists of leaflet publications, see Ingrid Schulze Schneider, “La Propaganda Alemana en España 1942-1944”, *Espacio, Tiempo y Forma* 7 (1994): 371–86; Ingrid

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challenges that such a task implies. First of all, the wide variety of leaflets, booklets and other documents printed and distributed, and the difficulties to find complete collections in archives or libraries. Second, the very problem of identifying a specific document or advertisement as propaganda, while at the same time finding a common thread that unites a collection and a connection to specific German institutions.

The collection of advertisements addressed in this paper has been compiled sifting systematically through the Spanish historical press during World War II years. Digital repositories and Optical Character Recognition (OCR) technologies make this work much easier, time-wise and wide in range today than in the 1990s.<sup>22</sup> However, the diversity of fonts and styles used in the design of advertisements made nonetheless indispensable the direct visual inspection of newspapers and magazines.

All the advertisements identified have a code number which evolves consistently during the period of study. The earliest image published carries the code “A-115” (first published 20 November 1940) and the last one “A-416” (first published 11 September 1943). No advertisements have been found in the press after the Francoist return to diplomatic neutrality in November 1943. Considering that a total of 67 advertisements have been identified, the wide span of more than 300 numbers between A-115 and A-416 leaves a significant space for further expansion of the collection. Its serial character, with different advertisements revolving around the same title or theme (“German products”, “Ideas and accomplishments”, “Our New Continental Europe”, etc.) strengthened its coherence as a collection and facilitated its identification. Moreover, there are clear continuities in the design and style of the advertisements. Finally, there is another component of the advertisements that acts as a uniting thread of the collection. All advertisements carry a logo formed by two united or superposed letters, which changes after late 1941 and becomes a symbol with the letters “D” and “W” superposed (first present in A-235, first published 5 November 1941). As already pointed out by Velasco, this is probably an authorship mark of the designer or producer of the advertisements.<sup>23</sup>

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Schulze Schneider, “Éxitos y Fracasos de la Propaganda Alemana en España : 1939 - 1944”, *Mélanges de La Casa de Velazquez* XXXI, no. 3 (1995): 197–217.

<sup>22</sup> The following databases, both including hundreds of journals, have been used: Hemeroteca Digital de la Biblioteca Nacional Española (<http://www.bne.es/ca/Catalogos/HemerotecaDigital/>) and Biblioteca Virtual de Prensa Histórica (<http://prensahistorica.mcu.es>). ABC and La Vanguardia have been reviewed through their online databases: Hemeroteca digital de ABC (<http://hemeroteca.abc.es/>) and Hemeroteca digital de La Vanguardia (<http://www.lavanguardia.com/hemeroteca>).

<sup>23</sup> See Velasco Murviedro, “Propaganda y Publicidad Nazis en España Durante la Segunda Guerra Mundial : Algunas Características”, 103-105.



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The advertisements have been found mostly in general newspapers (*ABC*, *La Vanguardia Española*, *Arriba*), but they were also often published at full-page in technical journals (such as *Ion*, for engineers) or magazines directed to specific public segments (such as *Y*, *Revista para la Mujer*, the magazine produced by the women’s section of the Spanish single-party). Sometimes different versions of the same advertisement were produced – one smaller to be inserted in newspapers and another as a full page for back or inside magazine covers (particularly during 1942 and 1943).

Several threads point to the German Chamber of Commerce in Spain as the main producer or promoter of this propaganda. First, this Chamber of Commerce appears explicitly in some of the advertisements (A-142 and A-226) upholding the connection of German and Spanish economies. Second, one of the categories of advertisements is formed by specific German brands and companies ads that have a clear commercial intention. Lastly, as previously explained, the German Chamber of Commerce in collaboration with the Spanish Falange had launched in July 1941 a national-wide art contest to illustrate the motto “Our New Continental Europe”. Already before this date, this very slogan and the “New Europe” theme was consistently present in the propaganda collection. After the contest the topic became even more central in the propaganda and many of the late and more elaborated advertisements published belong to this category. We thus consider reasonable to infer that many of these advertisements may originally have been images presented to the art contest.

The core ideological purpose of this propaganda collection is aimed to convey the superiority of German science, culture and technology over the “peoples of Europe”, while at the same time presenting the “natural” complement between German industrial economy and the raw materials produced in Spanish soil. The ideas of cultural and scientific superiority lay at the heart of almost all the advertisements located, often interwoven with the notion of “New Continental Europe” and its potential for economic, cultural and spiritual self-sufficiency (autarky). The collection becomes less explicitly German-centered as time passes by, and the late advertisements about “New Continental Europe” and the Spanish products within self-sufficient Europe carry in fact no reference to Germany. Along these lines, we have identified seven typologies of advertisements. **Table 1** shows these categories, the total of advertisements found for each, and the years when they were published. The complete collection of images can be found in **Annex II** of this thesis.

|   | Category   | Years published | Advertisements found |
|---|--|-----------------|----------------------|
| 1 | <i>German creations and products</i>                   | 1940-1941       | 8                    |
| 2 | <i>Publishing news</i>                                 | 1940-1941       | 10                   |
| 3 | <i>German companies and German chamber of commerce</i> | 1941            | 12                   |
| 4 | <i>“The world’s largest”</i>                           | 1941            | 9                    |
| 5 | <i>“Ideas and accomplishments”</i>                     | 1942-1943       | 9                    |
| 6 | <i>Our New Continental Europe</i>                      | 1941-1943       | 13                   |
| 7 | <i>Europe can live by itself</i>                       | 1943            | 6                    |

**Table 1:** Categories of advertisements identified.

### 2.1 German creations and products (1940-1941)

These advertisements, most of them already identified by Velasco, were published between December 1940 and April 1941. In the shape of a column, they introduce certain creations (colorants, radio and music, engines, medicines, electric industry and optical industry) as inherently German. At the same time, they envisage a future of peace when the commercial relations between Spain and Germany will be normalized and such products will be made available widely. Almost no reference to Europe is found throughout these advertisements. The first advertisements of this collection include the signature “Advertising service” (“Servicio de publicidad”) and an address in Madrid. Velasco inferred that this advertising agency was producing and distributing the advertisements.<sup>24</sup>

### 2.2 Publishing news (1940-1941)

These announcements had not been previously identified. Usually occupying a small part of the page, they inform about the publication of new books from several publishing houses (Rubiños, Orbis and Ediciones España).<sup>25</sup> The topics range from the story of the Versailles

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<sup>24</sup> Velasco Murviedro, “Propaganda y Publicidad Nazis en España Durante la Segunda Guerra Mundial: Algunas Características”, 103.

<sup>25</sup> The collection “Biblioteca Nueva Europa” (New Europe’s library), published by Ediciones España, is particularly interesting. Some titles of this collection addressed specifically the topic of agriculture from a

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pact, Europe after the French defeat or the German air war, in all cases from a perspective sympathetic to the Axis’ views. Finally, there are three different advertisements of the book “The Jewish Problem”, by Alfonso de Castro.<sup>26</sup> As in the previous category, several of the first advertisements include a signature and an address that later disappears.

### 2.3 German companies and German chamber of commerce (1941)

Previously not identified, these small advertisements present a specific German company or product, sometimes including the name and address of its commercial representative in Spain. They appear to have a clear commercial intention, without additional texts. Two advertisements that have been included in this category differ. Both have a larger format and introduce the contact details and offices of the German Chamber of Commerce in Spain (A-142 and A-226). While one of them (A-226) announces the celebration of the Vienna Commercial Fair, the other simply promotes the German Chamber of Commerce in Spain under the title “Two interlocking economies” and an image of Germany and Spain as two rotating gears (A-142, first published 10 July 1941). A brief text states that both economies are “complementary” and that the gear force comes from the “potent engine of European economy”. Accordingly, it is asserted that “the many agricultural products of the Spanish fertile soil and the richness of its seas and subsoil are the base of the Spanish exports that compensate the machinery imports (...) from the perfect German industry”. Such a portrait fits well with the imagery of the Spanish products presented in the section 1.7.

### 2.4 “The world’s largest” (1941)

Previously identified by Velasco, this category of advertisements celebrates German industrial creations such as boats, trains, or different types of machines as the world’s largest or fastest in their class, specifying the name of the manufacturing company. All these advertisements include the following sentence: “The highest works of German technique remain unbeatable”. There is also a map of continental Europe, with a brief inscription: “Today the continent of unlimited possibilities is EUROPE, and to accomplish its new mission it carries out the most transcendental works”.

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European perspective, such as Walter H. Hebert, *La Revolucion de Los Labradores Europeos* (Madrid: Ediciones España. Biblioteca “Nueva Europa”, n°9., 1942). Another title published also in 1942 by Ediciones España translated the work of the German linguist Diedrich Westermann and introduced Africa as a “European mission”, Diedrich Westermann, *África: Misión Europea* (Madrid: Ediciones España, 1942).

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### 2.5 “Ideas and accomplishments” (1942-1943)

Similarly to the previous category, these advertisements emphasize the presumably pioneering role of Germany in inventions such as the diesel engine, the electric tram, the first car, the printer, etc. The format used is much larger than in the previous categories, usually occupying a full page or at least half of it, and including several lines of text. The legend “One idea, one achievement” presides over every image. There is also a map of continental Europe, with a slightly different inscription than the one in the previous category: “As the continent of unlimited possibilities, EUROPE fecundates the more transcendental works of the whole world”.

### 2.6 Our New Continental Europe (1941-1943)

This category of advertisements had not been addressed in the literature. Its contents are much less German-centric, and in fact “New Continental Europe” takes the place of Germany, which is not mentioned. The advertisements could be divided in two parts. In first place, six of them published between May and August 1941 following the same structure. They are designed as rectangle-shaped box, with a question at the top following with a written response including some small figures, and finishing with the expression “Our New Continental Europe”. The notion of self-sufficiency (autarky) is central in these advertisements (“Who does produce more in less space?”, A-165, first published 8 May 1941; see also “Who can cover its own cereal consumption?”, A-154, 28 May 1941), and so it is the organization of economy in large continental spaces (“What does Africa mean to us?”, A-192, first published 8 July 1941; see also “Who collaborated best with Ibero-America?”, A-211, first published 18 July 1941).

A second part of these advertisements started to be published in early 1942 and lasted until early 1943. Their format is larger, with a much more elaborated and remarkable design. They were often published at full page as back or inside covers. It is probable that they result from the art contest organized by the German Chamber of Commerce in July 1941 and the exhibition celebrated in September-October of the same year. In all of them the sentence “The New Continental Europe” is clearly highlighted. Figure 2 (“European Autarky”, A-375, first published 9 September 1942), figure 9 (“One single heart”, A-285, first published 1 January 1942) and figure 10 (“Spring”, A-391, first published 24 January 1943) belong to this category. Some other examples of the main titles of these advertisements, always revolving

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<sup>26</sup> Alfonso de Castro, *El Problema Judío* (Madrid: Ediciones Rubiños, 1939?).

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around the image of Europe, are: “European Accounting” (A-350, first published 9 August 1942) or “Vitality” (A-384, first published 1 December 1942).

### 2.7 Europe can live by itself (1943)

These advertisements started being published in March 1943, soon after the critical German defeat in Stalingrad (February 1943). As in the previous case, this category has not been addressed in the literature.<sup>27</sup> It has no explicit reference to Germany and it features a major emphasis in the idea of a self-sufficient Europe. It focuses on Spanish primary products and presents them as contributions to the life of “New Continental Europe”. The first advertisement celebrates Europe’s soil (“Europe’s soil feeds all its peoples”, see Figure 8). The rest of the advertisements celebrate products of the Spanish soil and subsoil as fundamental raw materials for the European economy: oranges (Figure 3), olives (Figure 4), minerals (Figure 5), cork (Figure 6) and wine (Figure 7).

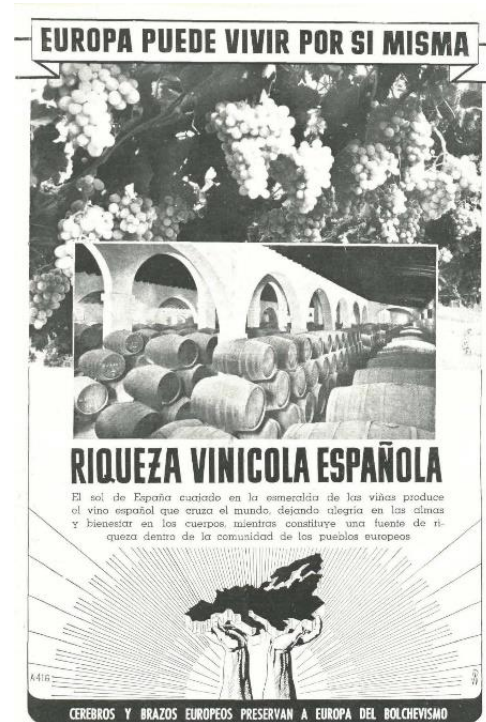
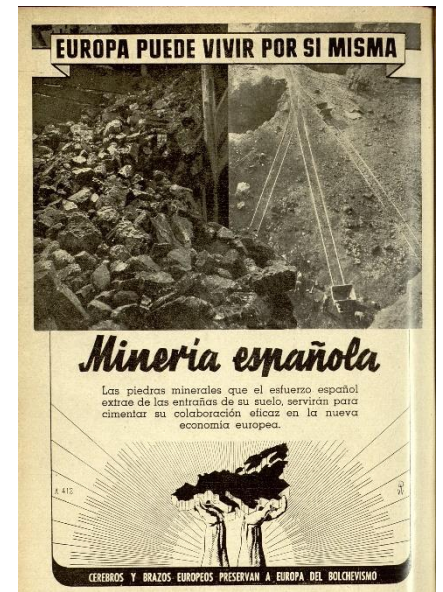
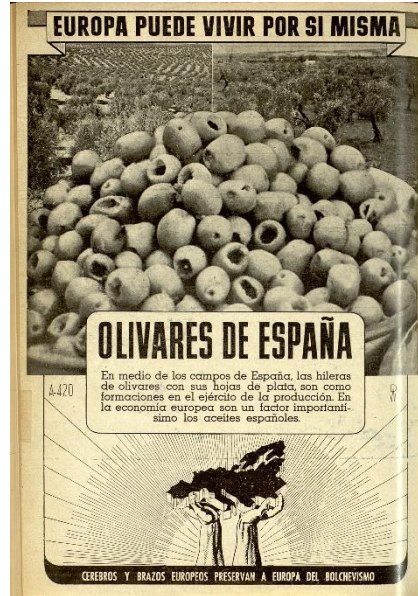
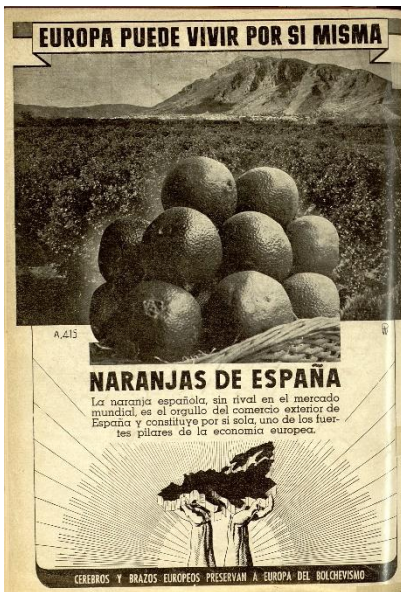
For all these cases, two versions of each advertisement were produced, one including a photo – usually placed as an inside or back cover of a magazine – and another using an illustration instead of the image, which was usually placed in general newspapers and used in a smaller format. Despite the differences in design, they share the same code number. All advertisements of this category bear two inscriptions: “Europe can live by itself” on the top of the page, and “European brains and arms preserve Europe from Bolshevism” in the lower part. This lower part also includes a drawing of two hands sustaining continental Europe – a very similar image to the one featured in Figure 2 (“European Autarky”) and particularly A-384 (“Vitality”) – both belonging to the previous category described.

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<sup>27</sup> However, Carlos Velasco was aware of the existence of these advertisements. Velasco Murviedro, “Propaganda Y Publicidad Nazis En España Durante La Segunda Guerra Mundial : Algunas Características.”, 106-107.



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**Figures 3, 4, 5, 6 and 7:** “Oranges of Spain” (A-415, first published 1 May 1943); “Spanish olive groves” (A-420, first published 1 June 1943), “Spanish mining” (A-412, first published 1 July 1943), “Spanish cork” (A-411, first published 1 August 1943) and “Spanish wine wealth” (A-416, first published 11 September 1943). All advertisements bear two inscriptions: “Europe can live by itself” on the top of the page, and “European brains and arms preserve Europe from Bolshevism” in the lower part. Source: Used with permission from the Pavelló de la República (UB, Barcelona) press collections.

### 3. The reception of the “New Europe” in Francoist Spain

On June 9 1942 Professor Konrad Meyer, from the University of Berlin, was received at the Spanish Ministry of Agriculture in Madrid. The author of *Generalplan Ost* and Chief of the planning office of the Reich Commissioner for the Consolidation of German Nationhood (*Reichskommissar für die Festigung deutschen Volkstums*) had been invited to give a conference entitled “Agricultural problems of the New Europe”. In front of several high officers of the Spanish Agriculture Ministry and the National Institute of Colonization, SS-Oberführer Meyer celebrated the emergence of economic collaboration in Europe and stated that the reconstruction of the continent would be based only in “healthy peasants and a productive agriculture”. According to the press coverage of the conference, Meyer praised the German experience in reordering the laws of rural property and proclaimed that the victory of the Axis would announce the flourishing of European agriculture.<sup>28</sup>

No traces of the role assigned to Spain in this future economic organization can be found in the press accounts of Meyer’s words. But other sources show hints of the rumors running among some social sectors in Spain. Merely two days after Meyer’s conference at the Ministry of Agriculture, the president of the newly created National Institute of Industry (*Instituto Nacional de Industria, INI*), general Juan Antonio Suanzes, gave the first of a series of private speeches to high-ranking military officers, presenting his views and plans on Spanish autarky. Suanzes, military engineer and a personal friend of Franco, was one of the main advocates of Spanish industrialization, and knew well the autarkic projects of Italy and Germany. Throughout his talks, preserved in INI’s archives, he acknowledged the existence of a “persistent rumor saying that if the war finishes with a victory of the Axis – that is, of our ideals – Spain will become an agrarian country”. INI’s president, who had recently visited Germany, regarded such story as “nonsense” and assured that so did his German counterparts. According to Suanzes, he had compared the Spanish quadrennial plan with the German, concluding that the Spanish industrialization would undoubtedly go ahead.<sup>29</sup>

Ideas about national self-sufficiency had circulated widely throughout the world in the aftermath of the 1929 crash and during the 1930s. It was in the context of the wide discussion

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<sup>28</sup> *ABC*, June 10 1942, p. 12; *La Vanguardia Española*, June 10 1942, p. 2. On Konrad Meyer, see Alex J. Kay, *Exploitation, Resettlement, Mass Murder: Political and Economic Planning for German Occupation Policy in the Soviet Union, 1940-1941* (New York: Berghahn Books, 2006), 100-101, 187; and Frank Uekotter, *The Green and the Brown: A History of Conservation in Nazi Germany* (Cambridge University Press, 2006), 156-160.

<sup>29</sup> See Texto taquigráfico de la conferencia pronunciada por el presidente del INI Excmo. Sr. Don Juan Antonio Suanzes Fernández en la Escuela Superior del Ejército sobre el tema Autarquía, part II (12th June 1942), p. 23, Suanzes Collections, Archive of Instituto Nacional de Industria.

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about the pros and cons of protectionism that the word autarky (or autarchy), as vividly illustrated by M.A. Heilperin, “emerged from dictionaries”.<sup>30</sup> In Germany, the National Socialist party assumed self-sufficiency policies as soon as it reached power in 1933, and three years later it approved the “Four Year Plan” referred by Suanzes, which involved the development of a several autarkic programmes in strategic sectors in case of war.<sup>31</sup> In Italy, the massive adoption of self-sufficiency policies came only under the sanctions approved by the Society of Nations for the Italian invasion of Ethiopia, but had been discussed since the 1920s.<sup>32</sup> The nascent Francoist dictatorship, forged in the battlefields of the Spanish Civil War (1936-1939) found in its German and Italian allies an invaluable political, military and technical support, as well as a model for political and economic inspiration. The establishment of Suanzes’ National Institute of Industry – which was initially to be called “National Institute of Autarky” – was based in the Italian Istituto per la Ricostruzione Industriale.<sup>33</sup>

Yet the circulation of the concept of national self-sufficiency or autarky adopted a new dimension within the “New Europe” disseminated in the Spanish news coverage since 1940. After the French defeat and the signature of the Tripartite Pact between the Axis forces in September 1940, Germany and Italy were to lead the establishment of the “New Order” in Europe. Superseding the national dimension, the notion of self-sufficiency/autarky was then enshrined at the continental scale in the German propagandistic efforts, as clearly shown by the collection presented in this paper and particularly in figure 2. From the scale shift of the autarkic project followed a necessary reorganization and rationalization of economic production. In this regard, one of the advertisements published in August 1941 included a statement from the German Minister of Economics – Walther Funk – underlining that to attempt to produce every product in every country was an “economic madness”. In the “New Continental Europe” – it followed – there would be a “healthy division of work” and every

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<sup>30</sup> M. A. Heilperin, *The Trade of Nations* (New York: Alfred A. Knopf, 1947), 155, cited in Mark C. Nolan, *The Original 1933 “national Self-Sufficiency” Lecture by John Maynard Keynes: Its Political Economic Context and Purpose, Research in the History of Economic Thought and Methodology*, vol. 31 (Emerald Group Publishing Limited, 2013).

<sup>31</sup> Richard Overy, *War and Economy in the Third Reich* (Oxford, New York: Oxford University Press, 1992); Adam Tooze, *The Wages of Destruction: The Making and Breaking of the Nazi Economy*, ed. Penguin Books (London, 2006).

<sup>32</sup> Saraiva and Wise, “Autarky / Autarchy : Genetics , Food Production, and the Building of Fascism.”, 425-426.

<sup>33</sup> Elena San Román López, *Ejército e Industria: El Nacimiento Del INI* (Barcelona: Crítica, 1999), 143-152. On the original name for INI, see Antonio Gómez Mendoza, ed., *De Mitos Y Milagros : El Instituto Nacional de Autarquía, 1941-1963* (Barcelona: Edicions Universitat de Barcelona, 2000), 28. On autarky in fascist regimes and the reforms launched by Suanzes in the fishing sector, see Santiago Gorostiza and Miquel Ortega Cerdà,



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product would be produced where it can be done in better economic conditions (A-193, first published 8 August 1941).

However, the idyllic scenario painted in the “New Continental Europe” propaganda appears in strike contrast with the harsh reality of the German occupation of the continent and the exploitation of its natural (and human) resources.<sup>34</sup> Leaving aside the brutal exploitation of the Eastern territories, the industrial German-centric narrative of continental autarky was also conflicting with the Spanish and Italian own national autarky discourses, which privileged the development of industry and the fulfillment of national self-sufficiency in as many strategic sectors as possible.<sup>35</sup> The propagandistic insistence on the industrial prowess of Germany (visible in the categories “German creations and products”, “The world’s largest” or “Ideas and accomplishments”), together with the unabashed celebration of Spanish raw materials as contributors to the self-sufficiency of the “New Continental Europe” could well have been fuel for the rumors mentioned by Suanzes about the future role reserved for Spain within the continental economic reorganization.

Nonetheless, the circulation and impact of German ideas about the reconfiguration of the European order was significant in Spain. In a moment where world power seemed to be experiencing a major reconfiguration, many in Spain saw an opportunity to benefit the national interests and expand its sphere of influence, for instance, in Africa.<sup>36</sup> Falange and many among the Spanish military fully identified with the Axis ideals – as previously exemplified in the telling words of Juan A. Suanzes. The Nazi influence in Spanish fascism peaked between 1938 and 1942, and the European discourse was incorporated and discussed by many authors and propagandists from Falange – but not only by them. The role of the Blue Division of Spanish volunteers in the Eastern front also fitted perfectly in the narrative

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“‘The Unclaimed Latifundium’: The Configuration of the Spanish Fishing Sector under Francoist Autarky, 1939–1951,” *Journal of Historical Geography* 52 (2016): 26–35.

<sup>34</sup> See Mazower, *Hitler’s Empire: How the Nazis Ruled Europe*, 263-264, 287, 594-595. On the exploitation of French wood, see Chris Pearson, “‘The Age of Wood’: Fuel and Fighting in French Forests, 1940-1944,” *Environmental History* 11, no. 4 (2006): 775–803.

<sup>35</sup> In the Italian case, for instance, among the almost 500 State newsreels available online, many deal with industrial production while also the imperial part, that is, the extraction of resources from the colonies in order to foster the national autarky, is relevant. See for instance “I giacimenti di zolfo”, *Giornale Luce* B0813, 8 January 1936, <https://www.youtube.com/watch?v=s9MWvMS54kk> (last accessed May 1 2017); “Grandi quantitativi di pesce scaricati dal battello Genepesca”, *Giornale Luce* B0825, 29 January 1936, <https://www.youtube.com/watch?v=twkMVD-VSvY> (last accessed May 1 2017); “Adunata della Industria Italiana per l'autarchia”, *Giornale Luce* B1206, 24 November 1937, <https://www.youtube.com/watch?v=z1BqRwVOI-c> (last accessed May 1 2017).

<sup>36</sup> García Pérez, “La Idea de La «Nueva Europa» En El Pensamiento Nacionalista Español de La Inmediata Posguerra, 1939-1944”, particularly 232-233.

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of the “European defense” from Bolshevism.<sup>37</sup> Between 1941 and 1942, several publications disseminated in Spanish the ideas of the European “New Order” – the current propaganda collection also identifies some of the publishing houses that participated in these efforts (see the category “Publishing news”).<sup>38</sup>

Yet few events could better exemplify the circulation enjoyed by the Nazi “European” discourse in Spain than the presence of a section devoted to “European Autarky” in the national-wide premiere of the Francoist newsreels (Noticiarios y Documentales, No-Do). When in January 4 1943 the first No-Do was screened throughout the thousands of movie theaters of Spain, it included a specially designed bumper entitled “European autarky” – very similar to figure 2 – followed by almost two minutes of footage about the recollection of cotton in Ukraine and the use of methane as a substitute for gasoline in Italy.<sup>39</sup> In late February 1943 another section about “European autarky” was distributed in the weekly No-Do, praising the “intense German work of reconstruction in the occupied Eastern territories”.<sup>40</sup>

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<sup>37</sup> See Manuel Loff, “El Franquismo Ante El Nuevo Orden Europeo (1938-44): Oportunidad Histórica Y Adhesión Voluntaria,” in *La Política Exterior de España En El Siglo XX*, ed. Javier Tusell Gómez and Rosa María Pardo Sanz (Madrid: Universidad Nacional de Educación a Distancia, 1997), 235–52. On the Blue Division and the myth of Hitler in Spain, see Xosé M. Núñez Seixas, “Falangismo, Nacionalsocialismo y el mito de Hitler en España (1931-1945),” *Revista de Estudios Políticos*, no. 169 (2015): 13–43.

<sup>38</sup> Other books and leaflets translated from German or Italian propagated these ideas. Several discourses from top Nazi officers were collected in VVAA, *El Nuevo Orden Económico de Europa : Hitler, Als, Backe, Clodius, Darré, Funk, Ilgner, Landfried, Puhl, Schlotterer* (Madrid : M. Aguilar, 1942). The topic of European autarky is central both in Ferdinand Fried, *El Porvenir Del Comercio Mundial* (Madrid: Espasa-Calpe, 1942) and Volkmar Muthesius, *La Autarquía de Europa* (Madrid: Nueva Epoca, 1941). Interestingly, the views of the prominent Italian Fascist Virginio Gayda on the economic future of Europe were published – unlike the previous books – by a Francoist governmental agency in 1942, see Virginio Gayda, *El Mañana Económico de Europa* (Madrid: Ediciones de la Vicesecretaría de Educación Popular, 1942). Spanish authors also published on the topic, see for instance Juan Vidal Salvó, *Perspectivas Autárquicas de La Nueva Europa* (Madrid: [s.n.], 1941) or Manuel Fuentes Irurozqui, *España En La Economía de Europa* (Madrid: [s.n.], 1943).

<sup>39</sup> No-Do Newsreels n°1, 4 January 1943 <http://www.rtve.es/filmoteca/no-do/not-1-introduccion-primer-noticiario-espanol/1465256> , minute 10:58. Last accessed 12 May 2017.

<sup>40</sup> No-Do Newsreels n°8, 22 February 1943 <http://www.rtve.es/filmoteca/no-do/not-8/1466993/> , minute 9:50. Last accessed 12 May 2017.



**Figure 8:** "THE SOIL OF EUROPE FEEDS ALL ITS PEOPLES. Sufficiency in vital resources, capacity to live without guardianship, with spiritual energy and material strength to resolve its own problems. The soil of Europe gives all this to its peoples. Each European people with its distinguished personality, its own peculiar physiognomy, working within the great European family, will make it so that the NEW EUROPE HAS ITS OWN LIFE." (A-396, first published 5 March 1943). Source: Used with permission from the Pavelló de la República (UB, Barcelona) press collections.

#### 4. Nature and nation in the “New Europe” propaganda

The German propaganda campaign focusing on European autarky conflates the classic discourse on nationalistic self-sufficiency with a continental, transnational project. Autarky celebrates the resources of the nation, often implying a twofold ecological and spiritual connection between them and the collective identity of the country. It is not rare that nature is enrolled in the ranks of nation(alism), with the purpose of transforming a political option in a natural/geographical fact. This nation/nature relationship is extremely relevant in environmental history. Since the beginning, the new discipline has openly declared its uneasiness with the nation as main scale of analysis: quite obviously ecologies do not follow the borders of the state.<sup>41</sup> And yet, most environmental history has been done within the frontiers of the nation, though without addressing explicitly the dialectic interrelationship of nature and nation.<sup>42</sup> The fascist autarkic narrative is the ideal place for researching these dialectic connections. It precisely merges in one single narrative nature and nation, blending the ecological qualities of the land with the spiritual qualities of people. This is well visible in several of the images in the collection, particularly in the categories “Our New Continental Europe” and “Europe Can Live by Itself”.

Figure 8 (“The soil of Europe feeds all its peoples”, A-396, first published 5 March 1943) is particularly emblematic in that sense. It combines nature and history, that is, the identity of the nation with its capability to be self-sufficient. The image depicts a procession of men carrying what appear to be the distinctive products of the land, passing through a stylized, highly classicist landscape. Mirroring the procession of men there is a procession of columns which evidently refer to the history of the place. That image seems a programmatic declaration about the politics of fascist autarky. Nature, history and human work merge in the celebration of the national identity; the two processions are not by chance depicted in the same image but each one depends on the other. We would dare to say that without the columns and the traditional costumes, there would be no natural products to celebrate the

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<sup>41</sup> Donald Worster, “World without Borders: The Internationalizing of Environmental History,” *Environmental History Review* 6, no. 2 (1982): 8–13, doi:10.2307/3984152.

<sup>42</sup> In other words, while theoretically supporting a post-national scale of observation, environmental historians have generally worked within the borders of the nation, but without explicitly dealing with the peculiarities of that scale. On this see: Marco Armiero and Wilko Graf von Hardenberg, “Introduction,” to special issue: Nature and Nation. *Environment and History* 20, no. 1 (2014), 1-8; Marco Armiero and Wilko Graf von Hardenberg, “Green Rhetoric in Blackshirts: Italian Fascism and the Environment,” *Environment and History* 19, no. 3

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fulfillment of the nation’s needs for life. So far, we are moving within the usual autarkic fascist rhetoric, but what is unique of this image is its estranging transnational character. Against the nationalistic tone which one would expect from an autarkic discourse, this image proposes a pan-European narrative: “Each European people with its distinguished personality, its own peculiar physiognomy, working within the great European family”. In the wake of the crushing defeat of Stalingrad (February 2, 1943), this advertisement marks the final step of the collection from a German-focused propaganda to the praise of a self-sufficient “New Europe” that carries no mention of Germany at all. Thus the centerpiece of that image is not any single nation but rather the entire European continent, and each member of the procession carries the products extracted from its piece of European soil – a soil now increasingly threatened by the Red Army, as timely reminded by the legend in the lower part of the poster: “European brains and arms preserve Europe from Bolshevism”.

Although the pan-European narrative presented in figure 8 unfolds through the presence of different nationalities and their natural/national contributions to the “New Continental Europe”, the uniting thread highlighted by the advertisement’s text is European soil – many European peoples, but one common soil. Fertility and vitality are core themes of this imagery. In fact, the advertisement A-384 (“Vitality”, first published 1 December 1942) presented an image of two hands holding continental Europe that subsequently becomes inserted in all the advertisements of the category “Europe Can Live By Itself” (figures 3 to 8). Similarly, figure 9 celebrates European peoples while underlining a common theme. “One single heart” (A-285, first published 1 January 1942) uses the metaphor of pumping sap instead of blood, but taken together with figure 8 constitutes a telling draft version of the Nazi discourse of “Blood and Soil”, adapted to the European scale.<sup>43</sup>

The distinctively natural/national collection of Spanish products brought into the procession of contributions to the “New Continental Europe” are introduced in figures 3, 4, 5, 6 and 7. These are the last advertisements of the collection, published between April and September 1943. Wine, olives, oranges, cork, and minerals – this is the face of Spain through the lens of Nazi’s autarky. It communicates an image of an agricultural, even backward country. Franco’s rhetoric of modernization, made of dams and industrialization, disappears in that

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(2013): 283–311; Marco Armiero, “Making Italians out of Rocks: Mussolini’s Shadows on Italian Mountains,” *Modern Italy* 19, no. 3 (2014): 261–74.

<sup>43</sup> On Blood and Soil a Nazi imperialism, see Smith, *The Ideological Origins of Nazi Imperialism*, 212-213.

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blueprint for an “independent” Europe. Spain had a role in the Nazi’s organization of the new European order and the representation of its natural endowment had to comply with it.<sup>44</sup>

Overall, from the perspective of the national autarkic projects, a continental reconfiguration toward self-sufficiency may initially seem like a rather odd endeavor. However, the combination of transnationalism and autarky is not only one of the many contradictions of the fascist cultures and politics. More than this, it shows once again the fascist ability to reuse words and concepts such as community, self-sufficiency, vital space or race, among other, thus establishing a malleable and amorphous conglomerate of notions – never a closed set or rules.<sup>45</sup> “Autarky” certainly stands as one of the more flexible concepts manipulated to be open to different readings.<sup>46</sup> The value of figure 8, and more generally of a close examination of the collection discussed between 1940 and 1943, is that its very evolution uncovers the true extension behind the nationalistic claim for autarky. Historically, any autarkic dream is often deeply embedded into imperial visions – it might be worth remembering that Mussolini's autarkic plan coincided with the Italian expansion in East Africa;<sup>47</sup> or that the early years of Francoism saw its “vital space” in North-Africa and around the territories of Spanish Guinea.<sup>48</sup>

In the German case, this imperial vision implies first the occupation and reorganization of Europe according to German needs. Putting nature at work for the superior good of the nation implies a hierarchical organization of needs and resources which goes hand in hand with the typical 'othering' of people and places inherent to the colonial project. As a fascist project,

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<sup>44</sup> Oranges, olive oil, cork and numerous minerals rank among the top products selected for export to Germany in exchange for military support in the agreements between both countries during the Spanish Civil War. See Christian Leitz, *Economic Relations between Nazi Germany and Franco's Spain, 1936-1945* (Oxford: Clarendon, 1996), 45-50. For other Spanish exports to Germany between 1939 and 1943 – including the shipping of wolfram, crucial for the Nazi war effort, see Christian Leitz, *Nazi Germany and Neutral Europe during the Second World War* (Manchester: Manchester University Press, 2000), 117-136. The multilingual publication of the Wehrmacht, *Signal*, also devoted several reports to the Spanish contribution to the European economy, focusing precisely on oranges and cork. See “Corcho para Europa”, *Signal*, 2<sup>nd</sup> number October 1942, SP 20, p. 28; “Corcho en Alemania”, *Signal*, December 1942, 23-24, p. 70; “Naranjas para Europa”, *Signal*, 1<sup>st</sup> number May 1943, SP 9, p. 27-28.

<sup>45</sup> Uekotter, *The Green and the Brown: A History of Conservation in Nazi Germany*, 31-32.

<sup>46</sup> Smith, *The Ideological Origins of Nazi Imperialism*, 244-245.

<sup>47</sup> Something visible in the Italian propaganda about autarky translated into Spanish, see for instance Istituto per Gli Studi di Politica Internazionale, *La Autarquía* (Milano: Istituto per Gli Studi di Politica Internazionale, 1938), 15, 48-49, 61.

<sup>48</sup> For Italy, see Virginio Bettini, *Borotalco nero. Carbone tra sfida autarchica e questione ambientale* (Milano: F. Angeli, 1984); Marino Ruzzenenti, *L'autarchia verde: un involontario laboratorio della green economy* (Milano: Jaca book, 2011). For Spain, see Antonio Reguera, “Fascismo y Geopolítica En España,” *Geocrítica*, 1991, <http://www.ub.edu/geocrit/geo94.htm>.



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The Nazi “New Europe” is a project of continental rebirth with a palingenetic mission.<sup>49</sup> Figure 10 (“Spring”, A- 391, first published 24 January 1943) ominously reflects this feature of the Nazi European project. In the advertisement, Europe is represented by a venerable tree whose “withered branches” have been done away “with the blows of an axe”. As made explicit by the poster’s legend, it is this very violence what will bring about a more vigorous and vital life of the old tree/continent. Violence is thus depicted as an agent of renovation and purification – the agent of fascist palingenesis. While no metaphor is developed about the “withered branches” of Europe, it is difficult not to think of the racial extermination project carried out by National-Socialist state.

More than self-sufficiency, the fascist autarky project proposes the subjugation of various parts to a superior interest which must be supported at any cost. The other image central to the fascist autarkic project is that of the organic unity of the nation, a sort of collective body where every part has been naturally engineered for a specific function.<sup>50</sup> The combination of imperial dreams and organicism is the file rouge of this narrative of European autarky. Built around German primacy, the proposed autarkic vision places all the European people at the service of a superior, allegedly common good, each of them deeply embodying the specificities of a rather naturalized relationship between national identity and environments. Actually, while for the Germans nature seems mainly embodied into their “natural” disposition towards technology and science, for the rest of European people, nature is represented in a more traditional fashion as fruits, minerals, and fish. The hierarchical design of this autarkic project appears evident in this campaign depicting countries producing raw materials while publicizing the achievements of Nazi's technological and scientific progress.

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<sup>49</sup> Griffin, “Europe for the Europeans: Fascist Myths of the European New Order 1922–1992.”, 135.

<sup>50</sup> Cinzia Spinzi, “‘THE WHOLE IS GREATER THAN THE SUM OF THE PARTS’ Metaphors of Inclusion and Exclusion in the British and Italian Fascist Discourse of the 1930s,” *Lingue E Linguaggi* 19, no. October (2016): 287–303.



El corazón de Europa supo impulsar a través de las arterias del Mundo, la savia fecunda de su genio.

Los pueblos, fundidos en el crisol de un mismo corazón, contribuirán a completar la economía de sus Estados Europeos, creando así una colectividad potente y vigorosa en

La

**NUEVA EUROPA CONTINENTAL**

**Figure 9:** "One single HEART. Europe's heart pumped the fertile sap of its genius through the World's arteries. European peoples, fused in the crucible of the same heart, will contribute to complete the economy of its European States, thus establishing a potent and vigorous collective in the NEW CONTINENTAL EUROPE" (A-285, first published 1 January 1942). Source: Used with permission from the Pavelló de la República (UB, Barcelona) press collections.





**Figure 10:** "SPRING. With the blows of an axe, the old trunk lost its withered branches, and when Spring came the tree recovered its vitality and vigor. The effort and inventiveness of the European States will be compensated through tomorrow's happiness, with the fertile flourishing of the NEW CONTINENTAL EUROPE" (A-391, first published 24 January 1943). Source: Used with permission from the Pavelló de la República (UB, Barcelona) press collections.

## 5. Conclusions

Overall, the evolution of the propaganda collection presented in this paper reflects the growing difficulties faced by the Axis armies throughout the war. Between 1940 and 1943, the emphasis of the advertisements turns from an initial focus on German dominance and industrial prowess within the continent to the celebration of the Spanish role in self-sufficient Europe. A growing emphasis on “European” themes is clearly visible. In late 1943, after the Francoist decision to return to a formal position of neutrality in the war, this propaganda vanishes from the Spanish press. It may well be that this evolution is consistent with the German attempt to “introduce a 'positive' European dimension to the regime's discourse (...) particularly intended for audiences outside the Reich – in neutral (Spain, Sweden) or even enemy (Britain) countries - in order to capitalize on the deep-seated distrust of the Stalinist regime and present the campaign in the east as a noble defensive fight for 'European' culture and civilization”.<sup>51</sup>

The “New Europe” and the project of “European autarky” appear as a German imperialistic endeavor that conceived European countries as sources of raw materials feeding an industrialized German nucleus. As war develops, it constitutes more and more a German-centric discourse of Fascist European unity against Bolshevism. In this collection of advertisements we see the emergence of a continental project of self-sufficiency, proving the scalar mobility (national – continental) of the concept of autarky within fascist discourse. However, as reminded by Aristotle A. Kallis, the dissemination of the “New Europe” project is not only propaganda. The discussions and publications about the economic reorganization of Europe also impacted Spain and circulated in the form of conferences, books and rumors. Many in Falange and in the volunteers among the Blue Division genuinely saw in the “New Europe” a project of regeneration and rebirth for the whole continent and participated enthusiastically in its propagation.

Building on previous Spanish scholarship, the present research has provided an analysis of an extensive propaganda collection about Fascist European themes in Spain and established several links that point to the German Chamber of Commerce in Spain as its main producer or promoter (yet not as necessarily the only German institution involved). However, we acknowledge that no primary documentary evidence has been found to verify such connections with archival data. Therefore, it should be regarded as an interpretative

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hypothesis to be eventually confirmed in German archives or throughout further comparative research.

Our main intention throughout the paper and in the election of the advertisements discussed has been to provide an environmental history standpoint to the discourses and projects of the “New Europe”. We regard the fascist “New Europe” as a useful context to study the circulation of scientific knowledge and technoscientific artifacts such as animal and vegetal species, as well as a scenario for the unresolved scalar tensions between national and continental-colonial autarkic projects. An environmental history approach to the fascist “New Europe” may find several paths to explore. The present paper has examined the representation of Germany and Spain within the propagandistic lens of Nazi “New Europe”, with special attention to the national/natural imaginaries conveyed by the representation of Spanish products and the reception of the idea of continental autarky in Spain. Providing that the collection presented in this paper is not unique, similar propaganda may have been produced for other European countries. In searching for similar advertisements, neutral states during World War II such as Sweden or Portugal could be potential candidates, although German propaganda enjoyed in Spain a degree of freedom that did not have in other neutral countries. Alternatively, the wide range of multilingual publications edited by the Wehrmacht and other German institutions and distributed throughout Fascist Europe could be a source to examine the representation of national/natural realities within the Nazi discourse of the “New Europe”.

In addition, the legend of the advertisement “European autarky” (figure 2) may be read as a research agenda for the environmental history of Fascist Europe: labor, soil, coasts, mines, factories and laboratories. History of science has certainly taken the lead working with transnational stories of scientists and technoscientific artifacts, but the mobility of European workers to the German factories in Fascist Europe, the key mining supplies from the margins of the continent (Swedish iron, Portuguese and Spanish wolfram, Turkish chromite) to the Axis war machine or the natural/national contributions of “European peoples” and its soil to continental self-sufficiency draw possible paths for investigation. Nature conservation, which has been one of the main topics of environmental history since its emergence, could also be examined at the European scale. Did the “New Europe” propaganda include any trace of conservationist discourses, in the face of the massive transformations announced by continental autarky? What were the clashes between conservationist and autarkic policies at

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<sup>51</sup> Aristotle A. Kallis, *Nazi Propaganda and the Second World War* (Palgrave Macmillan, 2005), 131.

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the national scale? The thriving subfield of the environmental histories of war, with its attention to the socioenvironmental transformations fostered by military build-up and conflict, could push this research ahead. Autarky was, after all, very much a military project, a mobilization of nature for a warlike effort.

Finally, the analysis of Nazi propaganda about autarky reveals once more the flexible and malleable qualities of fascist ideology. The upscaling of self-sufficiency, the continental expansion of ideas about blood and soil or the ubiquitous presence of palingenetic themes in the “New Europe” discourses tell about the adaptability of fascist themes. Indeed, fascist autarky was a messy project; it included a rhetoric celebration of the old rural world and the trust in the infinite possibilities of science and technology to substitute nature. It spoke of national self-sufficiency while drawing the map of imperial order which made some people and places at the service of others’ prosperity. One might argue that the fascist autarkic project has something to teach today in terms of the search for autonomy and, perhaps, even for the praise of frugality; instead, we believe that fascist autarky makes clear that it is not possible to decouple ecological choices and politics. One can reduce the consumption of energy and materials or praise the reduction of waste; those options per se do not define a progressive project of self-sufficiency. It clearly proves that an apolitical ecological transition is questionable and does not necessarily lead to a more just society. The liberation of nature must encompass the liberation of people.

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## RESEARCH PAPER VI

### Problematising self-sufficiency: a historical exploration of the ‘autarky’ concept



**Figure 1:** Protest of CasaPound in front of the headquarters of the European Commission in Rome. The banner reads “Defend Italian Coal. European Autarky!”. Source: <http://www.vesuviononconforme.com/2012/08/> , last accessed August 8 2017.

**Paper submitted to the book proposal “The end of growth as we know it: Contributions to the political economy of degrowth” (Duke University Press)**

**Problematising self-sufficiency: a historical exploration of the ‘autarky’  
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**Single-authored paper.**

**Abstract:** The mobilisation of the idea of self-sufficiency at the national scale was central to fascist political economies during the 1930s. Within a militaristic context, different fascist regimes in Italy, Germany and Spain pursued economic self-sufficiency, usually referred as autarky, by harnessing the natural resources of the nation. Decades later, during the 1960s and 1970s, a significant part of the burgeoning and diverse environmental movements vindicated the idea of self-sufficiency in a very different fashion, usually binding it to the local scale, both as a rejection of capitalist and urban modernity and as a path for going back to the land. While specific references to the concept of autarky were rare, the use of the self-sufficiency notion in environmentalist literature to this day remains ambivalent and is often substituted with self-reliance or autonomy as its synonyms. While some authors associate self-sufficiency to degrowth, for instance, others are more reluctant to establish explicit connections. Such ambivalences facilitate the assimilation of these concepts by neo-fascist and conservative factions eager to adopt a “green” and “local” facade. Adopting a historical approach, this article aims at exploring the fascist understanding of self-sufficiency as autarky. It examines autarkic discourses and practices carried out by fascist regimes and links them to their present-day echoes in neo-fascist movements. This analysis underlines the centrality of scale and closure in the definition of community for the fascist vision of self-sufficiency. Drawing on ecofeminist literature, it highlights the masculinist values that reside in the idea of self-sufficiency and its intimate connection to fascist ideology. While fascist connotations tainted the word ‘autarky’ long after the defeat of the Axis forces in 1945, self-sufficiency remains an ambiguous notion that requires to be problematized and examined critically.

**Keywords:** Fascism, self-sufficiency, autarky, environmental history, nation

## 1. Introduction

In September 2012, during a protest against the withdrawal of national subsidies to coal mining in Italy, a hundred members of the social center CasaPound momentarily occupied the headquarters of the European Commission in Rome. Currently one of the fascist movements growing more rapidly in Europe, CasaPound affiliates held a banner which read “Defend Italian Coal – European Autarky”.<sup>1</sup> The defense of national subsidies was in line with their discourse advocating for national self-sufficiency as a response to the economic crisis. However, it came combined with a reference to a continental scale claim for self-sufficiency policies. The use of the word “autarky” was an explicit reference to the 1930s fascist socioeconomic projects.

In broader terms, the example of CasaPound has been described as an “ideal case study to look at how radical-right groups try to exploit economic crisis in order to reconstruct the legacy with their fascist past” (Castelli Gattinara et al. 2013:257). At the same time that the movement advances self-sufficiency and autarky as the desirable results of a fascist “third way” under the economic crisis, these very ideas are vindicated as fundamental features of Mussolini’s regime. As put by the authors of a recent ethnography of CasaPound’s members and practices, the movement has built a form of “fascism à la carte” (Castelli Gattinara et al. 2013:256) that prioritizes certain aspects of the traditional discourse of fascism over others, in order to shape an idea of fascism as a revolutionary force against neoliberalism.

The example of CasaPound introduces two issues which are explored in the present paper. First, how both current neo-fascist movements and historical fascist regimes have mobilized the concepts of self-sufficiency and autarky, and often used it interchangeably. Second, how fascist discourses and practices of the idea of self-sufficiency have involved changing scales – local, national and continental. Starting from these premises, in this article I argue that a critical exploration of the fascist uses of self-sufficiency can contribute to the ongoing debates on degrowth and wider socioenvironmental discussions in several ways. First, it can illuminate how right-wing proponents of degrowth such as Alain de Benoist – representative of the French *Nouvelle Droite* – make use of self-sufficiency to articulate their views. The idea of self-sufficiency triggers a connection between community and nature which is linked

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<sup>1</sup> See the video of the occupation at “CasaPound: Blitz a sede Parlamento Europeo in solidarieta' minatori Sulcis”, CasaPound, [https://www.youtube.com/watch?v=\\_JhcHCTy35c](https://www.youtube.com/watch?v=_JhcHCTy35c) Last accessed 20 November 2016.

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to the ideals of the European New Right of the 1970s (Castelli Gattinara et al. 2013). Along these lines, De Benoist combines a plea for relocalization and localism with an ethnic-identitarian vision involving closed, homogeneous communities (Muraca 2013). Unsurprisingly, CasaPound finds inspiration for part of its discourses and practices, including the attention devoted to environmental themes, from the *Nouvelle Droite* (Castelli Gattinara et al. 2013).

Second, by clarifying certain references to self-sufficiency and other related terms, this article can draw the attention to its employment in connection to degrowth. Despite some authors seem to assume that self-sufficiency is a value in line with relocalization and degrowth (Xue 2014), this assertion is far from unquestioned. “Self-sufficiency” is not among the suggested words forming a “vocabulary for a new era” mobilized by degrowth proponents (D’Alisa et al. 2014). It is true, however, that it has been a central concept used by back-to-the landers or neorurals since the 1960s (Brown 2011; Calvário & Otero 2014; Jacob 1997). This apparent ambivalence in the use of the concept merits attention.

Third, discussions on self-sufficiency and autarky connect with debates on the importance of trade and periodically reemerge in the environmental literature. One of the critiques leveraged against the Ecological Footprint (EF) indicator in the late 1990s was that it implicitly regarded as desirable “some form of self-sufficiency (autarky)” and thus was biased against trade (Van Den Bergh & Verbruggen 1999:67). While EF proponents did not explicitly champion self-sufficiency or autarky, the indicator compared available productive land with the ecological footprint and introduced the resulting “ecological deficit” as an indicator of unsustainability (Van Den Bergh & Verbruggen 1999). As recently as October 2016, researchers on industrial ecology have advanced the idea of “autarkic islands” as a way to tackle present day ecological challenges (see Busch & Sakhel 2016 and a reply by Van Den Bergh 2016). These discussions, however, often use a narrow understanding of “autarky”, interchangeable with absolute self-sufficiency, and equal to the absence of trade. The present article shows how the concept of autarky has historically encompassed crucial social aspects regarding inclusion and exclusion. This helps explaining why, perhaps unsurprisingly, US environmental restrictionists are able to make use of the EF concept to argue in favor of immigration control (Hultgren 2015).

Finally, while the notions of sufficiency or eco-sufficiency are gaining momentum (Kanschik 2016), no explicit differentiation of the concept of self-sufficiency has been discussed so far (Princen 2005; Salleh 2009). This leaves room for different uses of the term “self-

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sufficiency”. The present article aims at exploring this space, scrutinizing the fascist uses of the concepts of “self-sufficiency” and “autarky” and how they can be used by radical-right or new-right proponents to articulate closures. By making explicit the highly political charge of these concepts, a historical perspective can provide critical insights and contribute to a more nuanced use of these terms.

The paper is organized as follows. Section 1 briefly introduces the parallelisms between the use of the words “autarky” and “self-sufficiency” throughout the 20<sup>th</sup> century and, drawing from research on history of science (Saraiva & Wise 2010), provides an interpretation of autarky that incorporates economic self-sufficiency while underlining social control and repression. Section 2 problematizes the “self” in “self-sufficiency”, emphasising the importance of the notions of scale and identity in its interpretation. The discussion of the concept first requires to question for whom and for what is self-sufficiency to be addressed, since certain understandings of this “self” involve dangerous closures, as André Gorz (1987) already warned about. This helps comprehending the key role that the concept can play in articulating the neo-fascist discourses such as de Benoist's (2009) that may endorse relocalization and reconnection with “natural” rhythms and limits while excluding specific communities. Section 3 combines different literatures to introduce a critique of the concepts of self-sufficiency and autarky as masculinist values. Both insights from the political analysis of fascism and ecofeminist authors concur on their view of “self-sufficiency” and “autarky” as masculinist qualities that fare high among the features of fascism. The final section sums up the arguments presented and concludes that both “self-sufficiency” and particularly “autarky” have been successfully mobilised in fascist political projects. The historical significance of the fascist uses of self-sufficiency does not invalidate any other uses, but calls for a careful and critical assessment of its employment. I suggest that autonomy and sufficiency are values more in line with degrowth. Finally, I propose a research agenda that examines the motivations of individuals and communities predicating “self-sufficiency” and the role that these specific practices play in their worldview.

## 2. Autarky and self-sufficiency throughout the 20<sup>th</sup> century

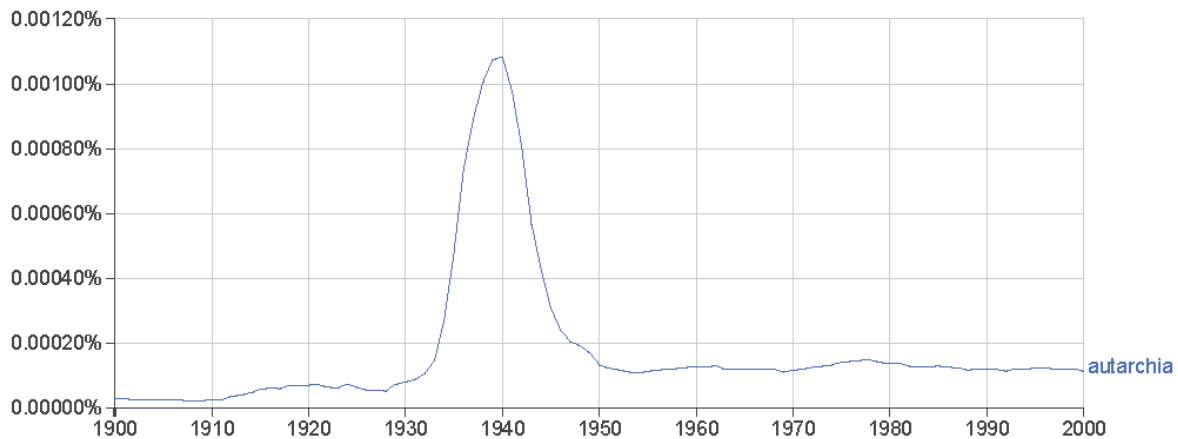
In November 1938 Rome was the scenario of a massive event celebrating fascist autarkic policies. On the *circus maximus* of the city, Mussolini opened the Autarkic Mineral Fair (“Mostra autarchica del minerale italiano”).<sup>2</sup> On one side of the circus, several pavilions were devoted to different national mining activities, starting with coal. On the other, they presented the results of autarkic policies, where the “National Defense” pavilion stood out. The coal pavilion reproduced the interior of a mine and narrated in detail the regime efforts to develop coal mining in the island of Sardinia.<sup>3</sup> In fact, just a couple of weeks after opening the fair, the Duce travelled to the island to inaugurate a new city designed to house the working force of the coal mines: *Carbonia* – coming from the Italian word for coal.

The enthusiastic adoption of self-sufficiency policies by the Italian regime had come during the second half of the 1930s. After the 1929 crash and during the Great Depression protectionist trade regulations spread throughout the world and trade shrank. The discussion of these economic trends and political options was widespread during this period. At a conference in Dublin in June 1933, John Maynard Keynes addressed the topic and acknowledged the promising possibilities that self-sufficiency policies entailed. However, he also warned against three dangers in the implementation of economic nationalist reforms, namely: rigidity (“the silliness of the doctrinaire”), haste, and the climate of social repression (“intolerance and the stifling of instructed criticism”) that surrounded its enactment in some countries (Keynes 1933; Nolan 2013). These admonishments were explicitly directed toward some of the regimes who were pushing forward self-sufficiency policies at the time, such as Russia, Italy and Germany – where Hitler had accessed power a few months earlier. It was in the context of these debates that the word autarky (or autarchy), understood as national economic self-sufficiency, “emerged from dictionaries” (Heilperin 1947:155, cited in Nolan 2013). Figure 2 offers a quantitative analysis of the rise and fall of the word “autarchia” in Italian during the 20<sup>th</sup> century:

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<sup>2</sup> See the video of the inauguration at “Mussolini inaugura a Circo Massimo la mostra autarchica del minerale italiano”, Cinecittà Luce, <https://www.youtube.com/watch?v=8ns3X-LNcEY> Last accessed 20 January 2017.

<sup>3</sup> For an enthusiastic chronicle of the event, signed by a Spanish Francoist engineer, see Creus Vidal 1939a and Creus Vidal 1939b.



**Figure 2.** Use of the Italian term “autarchia” throughout the 20<sup>th</sup> century. Source: Google Ngram Viewer (Michel et al. 2011).

Particularly adopted in fascist-oriented countries, “autarky” soon turned into more than a word – it became a battle cry. Although import substitution and self-sufficiency policies had been discussed in Italy since the 1920s, they rose to prominence with the invasion of Ethiopia in 1935 and the subsequent sanctions endorsed by the Society of Nations (Saraiva & Wise 2010). In Germany, during the early 1930s, the growing National-Socialist party (NSDAP) supported autarkic ideals, but famed members of the big industry were sceptical about self-sufficient and protectionist policies. In 1932, the industrialist Gustav Krupp referred to autarky condemning “the spread of this *catchword* as extraordinarily objectionable and dangerous” (cited in Overy 1992:126, emphasis mine). A few months later, the director of the external trade division in the NSDAP’s Foreign Policy Office, defined autarky “as the vital right of every people and every nation to set up their economy in such a manner, so that she may be a fort [Burg] to them, so that they may not starve and thirst because of trade or monetary politics, or even in the case of war. The extent of [what we mean by] autarky should emerge out of this image.” (cited in Barbieri 2015:120). The Nazi access to power in 1933 was followed by the implementation of self-sufficiency policies and, especially after 1936, the development of ambitious autarkic programmes under the “Four Year Plan”, intimately connected with war preparations (Overy 1992; Tooze 2006). In countries governed by fascist regimes, aside from substituting for foreign imports, autarkic projects researched the production of synthetic goods –particularly fuel–, pushed industrialization and required an



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increased agricultural production, which usually involved the reclamation and colonization of new lands.

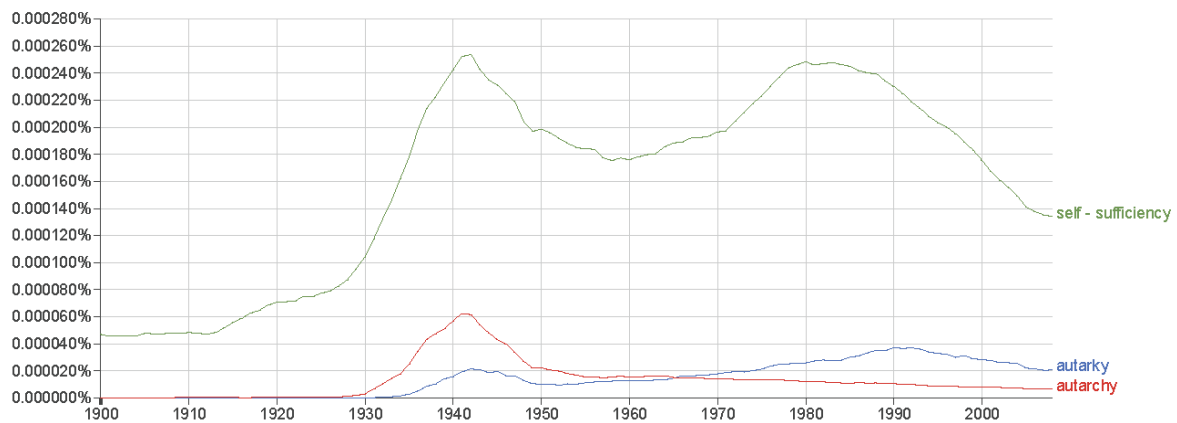
Agriculture and the connection between the peasant and the national land was paramount in the rural discourses of fascism. Drawing from conservative sources, several fascist regimes shared anti-urban rhetoric and a mystified vision of the traditional peasant as morally superior to the inhabitants of cities. In Spain, supporters of General Franco saw embodied in cities many of the moral values they despised, and represented them as “material and moral predators of the products produced in a virtuous rural land” (Alares López 2010:66). In fascist Italy, rural ideology configured a narrative that blended in nature and people (Armiero & von Hardenberg 2013) and the idealisation of the rural world played a key role in the promotion of *Bonifica Integrale*, a vision which involved the reclamation of swamp lands and the construction of new cities (Alares López 2010; Alares López 2011). Most of all, in Germany the *Blut and Boden* (“Blood and Soil”) racialist ideology celebrated the relation of peasants with their land and exalted the link between the German blood and earth. Despite already widespread before the Nazi government, Walther Darré played a significant role as Minister of Agriculture in its popularisation. It is not surprising that agrarian classes and the sectors of NSDAP represented by Darré supported the move toward self-sufficiency (Barbieri 2015). Darré argued that cities were not appropriate for German communities and underlined the necessity of colonising eastern lands to create a new society of small-holding peasantry (Alares López 2010).

However, as fascist Italy or Nazi Germany put it forward, autarky meant much more than “national self-sufficiency”. Historians Tiago Saraiva and Norton M. Wise have argued that European fascist states shared a generic characteristic: the close relation between autarchy and autarky. These two words, often used interchangeably, have actually different roots and meanings. Despite this, both in English and in several Romanic languages, the terms “autarchy” (referring to absolute rule, from Greek *autarchia*) and “autarky” (referring to economic self-sufficiency, from Greek *autarkeia*) have become conflated. Saraiva and Wise advance that this conflation “may serve as a marker of the history of fascism, of the ways in which authoritarian rule in the 1920s and ’30s came to be bound up with the pursuit of economic independence” (Saraiva & Wise 2010:424). In examining the Spanish dictatorship, Michael Richards also emphasised this duality and linked the notion of ‘autarchy’ to social control and repression (Richards 1998). This approach allows to combine the study of self-

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sufficiency policies interweaving the emphasis on social reorganization and repression from a top-down perspective (see Gorostiza & Ortega Cerdà 2016 for the analysis of autarkic fisheries policies in Francoist Spain).

Leaving their conflation aside, the jump of the catchword autarky/autarchy from the dictionaries to the streets is a phenomena characteristic of the 1930s and 1940s, connected to discussions on economic nationalism and the history of fascist regimes. Figure 3 follows the trends of the use of the English words “autarky”, “autarchy” and “self-sufficiency” throughout the 20th century. While the rise in the use of the three words follows a closely similar pattern during the 1930s and peaks around 1940-1942 – coinciding with the Nazi’s height of power – it significantly decreases afterwards.



**Figure 3.** Use of the English terms “self-sufficiency”, “autarky” and “autarchy” throughout the 20<sup>th</sup> century. Source: Google Ngram Viewer (Michel et al. 2011).

In the case of self-sufficiency, however, its use increased once again during the 1960s and especially during the 1970s. This surge could be partly attributed to the blossoming of the back-to-the-land movement, popularly associated with the “1960s counterculture and experimental lifestyles based on self-sufficiency or communal living in rural areas” (Wilbur 2013:152). In the US, communal back-to-the-land projects multiplied five-fold between 1965 and 1970, while in France it is estimated that 100.000 people returned to rural lands between the 1960s and 1970s (Wilbur 2013). The popular guides on self-sufficiency by John Seymour were published during the 1970s and rapidly translated to several languages (Seymour 1976; Seymour & Seymour 1973). During the 1970s, this coincided with a renewed interest in

national energetic independence, connected to the Oil Crisis, which constitutes another factor that helps explaining the increase in the use of the term “self-sufficiency”.

However, in all its diversity, the thousands of back-to-the-landers that abandoned cities across industrial and post-industrial nations during these years were part of a countercultural movement searching for distance from the state and capitalist relations, and certainly not a ruralist option aiming at contributing to a national goal pursued and set by the state. Crucially, their mobilisation of self-sufficiency practices involved the local scale, while the 1930s autarkic practices encompassed self-sufficiency into national and continental perspectives and political projects.

### **3. Self-sufficiency for whom and for what? Autarky, scale and closure**

“Defend European Autarky”, read the banners of CasaPound activists protesting in Rome in 2013. This reference to the continental organization of self-sufficiency echoes the work of New Right intellectuals such as Guillaume Faye and others who have defended the reorganization of economies into large autarkic blocks (Faye 2008). But it also resonates with the discourses of the 1940s. During World War II, Axis propaganda agitated the idea of a unified Europe, especially after the invasion of Russia and as the tide turned against the German-led forces. Continental autarky, particularly self-sufficiency in food production, was the goal (Mazower 2008). In Francoist Spain, when the German Chamber of Commerce organized an art contest to illustrate the concept “Our New Continental Europe”, it was the painting “European autarky” that received the first prize and was later widely disseminated in the press.<sup>4</sup>

As the continental references to self-sufficiency make clear, the fact that national territories could not sustain complete self-sufficiency is no reason to play down the idea of autarky. To the contrary, these very limitations were explicitly referred by fascist leaders as a justification for territorial expansion (Saraiva & Wise 2010). The idea of “vital space” was not unique from Germany, but also present in fascist Italy expansion in the Mediterranean (Rodogno 2006) and central in the Spanish territorial ambitions in Africa (Reguera 1991). The notion of

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<sup>4</sup> *La Vanguardia Española*, July 18 1941, p. 8; *Heraldo de Zamora*, October 9 1941, p. 1. During 1942, the painting was published at least in the daily newspaper *ABC* and the periodicals *Nueva Economía Nacional* and *Y*.

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autarky was intimately linked with war and could thus be mobilised both as a means to prepare for it or as an end guiding geopolitical strategy. The raw materials extracted from occupied territories were to complete the needs of the national community. Similarly, colonies were regarded as complements fulfilling the needs that could not be accomplished in the national land. Paradoxically, the idea of autarky thus accommodated to justify a more intense use of the colonies raw materials, as part of an expansive political project in the form of an empire.

Be it as they may – continental, national or local – fascist uses of self-sufficiency carry within an identitarian characterisation. In the reflexive “self” of “self-sufficiency” resides a community, an implicit “we” and therefore a closure. The definition of this “self” articulates an exclusion, an “othering” that – depending of the scale used – splits locals from foreigners, Italians from Non-Italians, or Europeans from Non-Europeans. This helps explaining the role that the concept can play in articulating filo-fascist discourses that endorse relocalization while at the same time erecting barriers for the exclusion of migrants from the community. Instead of “national autarky”, in the work of New Right intellectual Alain de Benoist the pleas for local and regional self-sufficiency are combined with an ethno-cultural understanding of citizenship and a call for the adoption of “community protection measures” at the European scale (de Benoist 2009). Behind the New Right’s embrace of European regionalism lies a logic that conceives the ethnic region as the ‘natural’ framework within which the civic notion of citizenship could be transformed into an ethno-cultural one (Spektorowski 2000). Along these lines, the basis for a “new Europe” would be a federation of these European ethnicities, forming a political entity “autarkic and free of immigrants” (Spektorowski 2000:353). This pan-European aspiration of the New Right connects it to historical fascism (Bar-On 2008).

The mobile scale attached to fascist uses of self-sufficiency, intimately linked with the definition of identity, clearly emerges as the other key component located in the reflexive “self”. Fascist regimes of the 1930s mobilised self-sufficiency at a national scale to pursue the “political independence” of the nation in the international arena. However, while ruralist discourses in fascist regimes cherished the closeness of the peasant to its land – with “self-sufficiency” enacting here a quasi-mystic connection between the local communities and their land – the local and regional practices of these peasants were of course to be embedded into the nation and subordinated to the political aims of the state. The change to continental scales, as previously presented, does not necessarily imply a major openness, since

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community continues to be defined in ethnic terms and therefore closed (e.g. ethnic Europeans instead of ethnic Italians). The “European autarky” of the 1940s was German-centred and conceived as an antidote to Bolshevism. Therefore, the focus that 1930s National-Socialist definitions of autarky put in closure proves timely here: autarky as a fort represented by the (ethnically homogeneous) village, nation or continent.

In contrast, as mobilised by the majority of back-to-the-landers in the 1960s and 1970s, self-sufficiency was first and foremost about stepping out from the system. In the context of countercultural practices, self-sufficiency was seen as a desirable path to reduce dependency and sever from capitalist relations of production. Thus the emphasis was evidently at the local and regional scales, focused on the reinforcement of autonomy from the capitalist system. This move toward self-sufficiency was not seen as an absolute and final goal, as reminded by E.F. Schumacher in the prologue of John Seymour’s widely disseminated *Complete book of Self-Sufficiency* (1976). In fact, several authors ringed alarm bells about the uncritical and ahistorical appraisal of small-scale communities and the idea of “self-sufficiency”. In his blunt blow against Deep Ecology currents of thought, Murray Bookchin (1987) pointed it out as follows:

“Decentralism, small-scale communities, local autonomy, even mutual aid and communalism are not intrinsically ecological or emancipatory. Few societies were more decentralized than European feudalism, which in fact was structured around small-scale communities, mutual aid and the communal use of land. Local autonomy was highly prized and autarky formed the economic key to feudal communities. Yet few societies were more hierarchical (...). The manorial economy of the Middle Ages placed a high premium on autarky or “self-sufficiency” and spirituality. Yet oppression was often intolerable (...)” (Bookchin 1987)

For his part, André Gorz (1987), acknowledged as a fundamental intellectual source of degrowth (Muraca 2013), rejected “a return to household economy and village autarky” as well as total planning as alternatives to the capitalist system. Instead, he advocated for increasing as much as possible all collective and/or individual autonomous activity while decreasing “what has necessarily to be done (...) to a minimum of each person’s lifetime” (Gorz 1987:124). In the path toward this scenario, he acknowledged that “decentralisation and a certain level of local self-sufficiency” was required, because only small and medium-sized units of production could be controlled by the population and managed by its workers, favouring better working conditions and environmental impacts (Gorz 1987). Nonetheless,

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Gorz explicitly warned against “a drift towards autarky” and underlined the importance of the openness of local communities:

“For communal autarky always has an impoverishing effect: the more self-sufficient and numerically limited a community is, the smaller the range of activities and choices it can offer to its members. If it has no opening to an area of exogenous activity, knowledge and production, the community becomes a prison – exploitation by the family amounts to exploitation of the family. Only constantly renewed possibilities for discovery, insight, experiment and communication can prevent communal life from becoming impoverished and eventually suffocating.” (Gorz 1987:102)

Gorz understood economic activity as embedded in ecological systems, but rejected any mystification or attribution of spiritual values to nature. It is not self-sufficiency, but autonomy, what emerges as the central element in his thought, understood as self-limitation (Muraca 2013).

### 4. “Male autarky”: Self-sufficiency and virility in fascism

The previous section has introduced how a critical approach to “self-sufficiency” entails problematizing both the identities and the scales contained in the “self”. But it can also go further. The very possibility of personal self-sufficiency can also be questioned as an imposed ideal that, in the words of Amaia Pérez-Orozco (2014:112), “rejects vulnerability, interdependence of human lives and ecodependence” In this regard, both ecofeminist literature and research on the political features of fascism may provide valuable insights.

The existence of the *homo economicus* – male, rational, individual and self-sufficient – is one of the central assumptions of neoclassic economic theory. Research on ecological economics and feminist economics have shown how the economic system based in these premises is sustained on the appropriation of care work and natural resources at the same time that obscures their very presence (Gartor 2015). By negating vulnerability and ecodependence as the central conditions of existence, the system “imposes an anthropocentric ideal of self-sufficiency that cannot be universalized, because it can only be reached managing interdependence in terms of exploitation” (Pérez Orozco 2014:53).

The ideal of self-sufficiency thus emerges as a masculinised value, opposed to dependence and vulnerability. Although these critiques to the notion of self-sufficiency mostly take place

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in the sphere of the theoretical discussions about the *homo economicus* and speak to the interpersonal scale and gender relations, its insights can be also transferred to other domains. These perspectives encourage to conceive the economy from the standpoint of interdependence, thus bringing to question the division between self-sufficient subjects (Pérez Orozco 2014).

In the analysis of fascist ideology, the description of self-sufficiency as a masculinist value has also been underlined. The defence of virility and hypermasculinity is a central component of fascist political culture (Woodley 2010). Here, the obsession with self-sufficiency emerges as a building block of the masculinist identity of fascism. Along these lines, in her analysis of the literary work of Italian futurist poet Filippo Tomasso Marinetti, Barbara Spackman (1996) draws a parallelism between the “fantasy of economic autarky” and that of a “male autarky” where autarkic reproduction could take place without the intervention of women. Examining Marinetti’s novel *Mafarka le futuriste* (where Mafarka’s son is conceived through male parthenogenesis) Spackman suggests that both fantasies share an ideological structure:

“Marinetti's fantasy of male autarky is built upon misogyny, threatened with bankruptcy by same-sex relations, and therefore requires the reintroduction of the other in the form of the woman (to be raped). The fantasy of national autarky, I argue, is similarly structured: built upon nationalist xenophobia, it is threatened by the erasure of difference within and therefore requires the reintroduction of the other in the form of the colony (to be raped).” (Spackman 1996:xiii-xiv)

Fascist self-sufficiency is about interdependence managed as exploitation. The paradox produced by the political autarkic imperative and the failure of the national territories to provide for all raw materials needed is resolved with expansion. The nation mutates into empire – where the former can potentially achieve its autarkic goals with the “contributions” (imports) extracted from the latter. The idea of autarky is accommodated through this change in scale, where colonies in the “vital space” of the nation become part of the empire, but are not incorporated into the national community. Nationalist and Imperial discourses interweave, incorporating or excluding the colonies according to its needs (Spackman 1996).

## 5. Conclusions

Historically, the notion of self-sufficiency, often referred to as autarky, has been successfully mobilised by fascist movements. Emerging from the debates on the pros and cons of protectionism, in the midst of the consequences of the Great Depression, “autarky” rapidly jumped from dictionaries to the printed press and radio broadcasts and became a powerful catchword, closely associated with the achievements of fascist political economy in Italy and Germany. Political independence of the nation was to be pursued throughout enhanced economic self-sufficiency. However, as political projects, autarkic regimes were never only economic. They involved top-down social control and repression, as well as cultural closures. In their efforts to exploit national resources they also necessarily constituted ecological projects, showing great attention to reforestation and reclamation schemes, as well as to the production of synthetic substitutes for natural raw materials.

Autarky – absolute rule – stood in contradiction with democracy. The alloy of autarky and autarchy produced by fascism brought together absolute power and economic self-sufficiency, celebrated in opposition to the 19<sup>th</sup> century *laissez-faire*. On the basis of national resources autarkic political economies embraced growth and showed a tendency to shift toward expansive political and ecological projects (Gorostiza & Ortega Cerdà 2016). In order to achieve its national “self-sufficiency” goals, autarkic regimes ripped the autonomy of people to fully incorporating them into the national project, which often spread out of the state borders. In the same manner that the Italian or the Spanish autarkic project saw in Africa the “complement” required to achieve economic self-sufficiency and thus political independence, Nazi Germany saw in the reorganization of occupied Europe and the expansion in the East the shape of an “autarkic Europe” under German command. The potential paradoxes of national self-sufficiency were to be resolved with expansion, and self-sufficiency achieved through the conversion of nation into Empire. Autarky and militarism were closely bounded in the years coming to World War II.

“Self-sufficiency” stands as an apparently neutral concept, but its uses involve specific scales and communities. The definition of scale and community play a pivotal role in fascist uses of self-sufficiency. The national scale was key in the historical experiences of fascist regimes of the 1930s, which featured great attention to ruralist discourses that celebrated the local peasants attachment to the land but encompassed them in the pursue of national goals. During World War II, the discourse of continental self-sufficiency under the grip of Nazi Germany also gained strength, at least in propaganda efforts that portrayed a “New Europe” free of



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tariffs but with a hierarchical distribution of work and production among countries. Specific parts of both experiences are selectively chosen by current neo-fascist movements such as CasaPound as pillars of their “fascism à la carte” (Castelli Gattinara et al. 2013:256). Quite differently, the radical local practices of back-to-the-landers in the 1960s, escaping from system of capitalist economic relations, were not integrated in any national or continental plan.

The analysis of the concept of “self-sufficiency” requires a critical approach that carefully scrutinizes the values, scale and openness upon which it is predicated. Generic uses of the concept do not necessarily make explicit for whom and for what self-sufficiency is claimed for and thus may inadvertently advance the privileged position of specific communities. The use of the notion of self-sufficiency risk closures and neglects the ideas of dependence and cooperation. Evidently, the historical significance of the fascist uses of self-sufficiency does not invalidate any other uses, but may serve as a reminder of the need to apply a careful and critical assessment of its employment. In the past, self-sufficiency policies have of course been applied in non-fascist political regimes. The import substitution policies in Latin America during the 1950s-1970s is a case in point (Hirschman 1968). Today, calls for enhanced self-sufficiency and self-reliance come often hand in hand with the argument of improving the resilience of communities as part of the neoliberal discourse. Nonetheless, the focus of this article has laid in the mobilization of the idea of self-sufficiency in fascist ideology, connecting the 1920s – 1940s with the present day.

“Self-sufficiency” emerges as a masculinist value, much more akin to the catastrophist scenarios of survivalism than to emancipatory movements such as degrowth. The emphasis in “self-sufficiency” may involve a risk of closure. When authors from the New Right such as De Benoist (2009) endorse relocalization and defend local and regional self-sufficiency they are nonetheless using an ethno-cultural understanding of citizenship and therefore envisioning homogenous communities. Despite not using the national scale more akin to historical “autarky”, they combine the emphasis on the local and the regional with a Pan-European aspiration that is connected to historical fascism (Spektorowski 2000; Bar-On 2008). Contrary to the masculinist self-sufficiency and the closure denoted with autarky, degrowth emphasises the importance of cooperation, interdependence and eco-dependence. Autonomy, in particular, emerges as a central value, understood as self-limitation (Muraca 2013) and directly concerned with political freedom. Along these lines, the idea of

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sufficiency (Princen 2005) or eco-sufficiency (Salleh 2009) could be alternative values to “self-sufficiency” more in line with degrowth.

Finally, the current uses of the concept of self-sufficiency or other environmental values, be it by the New Right, survivalist groups or openly neo-fascist movements, offer opportunities to examine the ideological role that they play in the articulation of their worldview. History and literature evidently constitute crucial sources for these radical imaginaries. As remarkably pointed by Wilbur (2013) in his analysis of the back-to-the-land movement, there is a significant bias in the current research toward left-leaning projects, but certainly not all farmers fit in this political profile. Researching the motivations of individuals of communities predicating and practicing “self-sufficiency” as well as other local environmental practices could also adopt this perspective. The ethnographies of CasaPound militants (Castelli Gattinara et al. 2013) or of survivalist groups in the USA (Mitchell 2002) constitute good examples of the potential and relevance of such research.

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RESEARCH PAPER VII

**Dangerous assemblages: Salts, trihalomethanes and endocrine disruptors  
in the water palimpsest of the Llobregat River, Catalonia**



**Figure 1:** *El Cogulló* mine tailing, the largest accumulation of industrial waste in Catalonia, with at least 50 million tons of salts. Source: *La Vanguardia*, 2015.



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## Dangerous assemblages: Salts, trihalomethanes and endocrine disruptors in the water palimpsest of the Llobregat River, Catalonia

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**ARTICLE INFO**

**Keywords**

Political ecology  
Assemblages  
Water pollution  
Environmental history  
Catalonia  
Llobregat River  
Salinization

**ABSTRACT**

Water flows through time are connected to specific instances of sociocultural and sociotechnical assemblages of human and non-human components. We propose the concept of “water palimpsest” in order to characterize the complex histories of chemical and metabolic alterations embodied in water flows, potentially disruptive for humans and other living beings. Through the concept of palimpsest we interpret the configuration of water flows as constantly evolving towards new patterns maintaining at the same time traces of past mixtures. In order to decipher water pollution by means of a political ecology approach we argue that it is necessary to characterize the historical contours under which certain substances in river waters appear, interact and become hazardous. Engaging critically with literature on assemblages but also with chemical and epidemiological scientific literature, and drawing from archival and oral sources, we provide an account of historically produced pollution in the waters of Llobregat River (Catalonia) by unravelling the assemblages that shape the water palimpsest in this river. In parallel, we narrate the advances in instrumentation and analysis which permitted to detect and measure substances beyond recognition by human senses and preceded legal regulations on pollutants, starting from milligrams and (thus far) arriving at nanoscales. Focusing on the emergence of three typologies of pollutants – salts, trihalomethanes (THMs) and endocrine disruptors (EDs) – we unveil how these three assemblages embody specific instances of Llobregat socioenvironmental history, pointing towards a palimpsest characterized by increasing levels of complexity and uncertainty. The concept of water palimpsest allows us to incorporate non-human agency into the analysis of water quality and to infuse political ecology with materiality and thus with a (largely missing) focus on physicochemical and biological processes.

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**1. Introduction**

Critical perspectives in water resources management, particularly those based in political ecology approaches, have for the most part directed their attention towards flows moving from “nature” to “society” (that is, the supply side of the hydrosocial cycle). In contrast specific studies on reverse flows from “society” back to “nature” have received less attention probably because these return flows, usually degraded from their natural state, are many times expressed in specialized scientific and technical terms of little interest for social scientists. Nonetheless, return flows often carry complex histories of metabolic alterations, potentially disruptive for humans and other living beings, which might be metaphorically defined as “palimpsests” in which the composition of water constantly mutates towards new configurations while maintaining traces of past mixtures. In this paper we draw on the geographical literature on assemblages to argue that both new and old water configurations reflect specific instances of

wholes defined by certain specific properties but also open to outside influences (Anderson and McFarlane, 2011; Braun, 2006; Dittmer, 2014; Robbins and Marks, 2009; Swyngedouw, 2006) of non-human and human components including, among other elements, hazardous chemicals, river biota, water purification technologies, institutions, and domestic water consumers.

Assemblage thinking is also useful since it allows us to treat pollutants in historical terms. As Dittmer (2014) asserts, the past of each assemblage is reflected in its composition and relations. Hence pollutants such as those considered in our case study may be seen as elements within larger assemblages and as the product of cultural, economic and political practices leaving dense and long lasting imprints in the river landscape (Braun, 2006). At this point it is also necessary to clarify the differences between assemblages and palimpsests. The latter have been very little used in Geography but could be understood as assemblages not simply evolving in time but signaling moments of intense changes (Haarstad and Wanvik, 2016). The palimpsest exposes

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<http://dx.doi.org/10.1016/j.geoforum.2017.03.005>  
Received 10 May 2016; Received in revised form 18 January 2017; Accepted 6 March 2017  
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**Dangerous assemblages: Salts, trihalomethanes and endocrine disruptors  
in the water palimpsest of the Llobregat River, Catalonia**

Paper published in *Geoforum*, 2017, Vol. 81, pp. 153-162.

Co-authored with David Saurí.

**Abstract:** Water flows through time are connected to specific instances of socio-natural and socio-technical assemblages of human and non-human components. We propose the concept of “water palimpsest” in order to characterize the complex histories of chemical and metabolic alterations embodied in water flows, potentially disruptive for humans and other living beings. Through the concept of palimpsest we interpret the configuration of water flows as constantly evolving towards new patterns maintaining at the same time traces of past mixtures. In order to decipher water pollution by means of a political ecology approach we argue that it is necessary to characterize the historical contours under which certain substances in river waters appear, interact and become hazardous. Engaging critically with literature on assemblages but also with chemical and epidemiological scientific literature, and drawing from archival and oral sources, we provide an account of historically produced pollution in the waters of Llobregat River (Catalonia) by unravelling the assemblages that shape the water palimpsest in this river. In parallel, we narrate the advances in instrumentation and analysis which permitted to detect and measure substances beyond recognition by human senses and preceded legal regulations on pollutants, starting from milligrams and (thus far) arriving at nanoscales. Focusing on the emergence of three typologies of pollutants – salts, trihalomethanes (THMs) and endocrine disruptors (EDs) – we unveil how these three assemblages embody specific instances of Llobregat socio-environmental history, pointing towards a palimpsest characterized by increasing levels of complexity and uncertainty. The concept of water palimpsest allows us to incorporate non-human agency into the analysis of water quality and to infuse political ecology with materiality and thus with a (largely missing) focus on physicochemical and biological processes.

**Keywords:** Political ecology, Assemblages, Water pollution, Environmental history, Catalonia, Llobregat River, Salinization

## **1. Introduction**

Critical perspectives in water resources management, particularly those based in political ecology approaches, have for the most part directed their attention towards flows moving from “nature” to “society” (that is, the supply side of the hydrosocial cycle). In contrast specific studies on reverse flows from “society” back to “nature” have received less attention probably because these return flows, usually degraded from their natural state, are many times expressed in specialized scientific and technical terms of little interest for social scientists. Nonetheless, return flows often carry complex histories of metabolic alterations, potentially disruptive for humans and other living beings, which might be metaphorically defined as “palimpsests” in which the composition of water constantly mutates towards new configurations while maintaining traces of past mixtures. In this paper we draw on the geographical literature on assemblages to argue that both new and old water configurations reflect specific instances of wholes defined by certain specific properties but also open to outside influences (Anderson and MacFarlane, 2011; Braun, 2006; Dittmer, 2014; Robbins and Marks 2009, Swyngedouw, 2006) of non-human and human components including, among other elements, hazardous chemicals, river biota, water purification technologies, institutions, and domestic water consumers.

Assemblage thinking is also useful since it allows us to treat pollutants in historical terms. As Dittmer (2014) asserts, the past of each assemblage is reflected in its composition and relations. Hence pollutants such as those considered in our case study may be seen as elements within larger assemblages and as the product of cultural, economic and political practices leaving dense and long lasting imprints in the river landscape (Braun, 2006). At this point it is also necessary to clarify the differences between assemblages and palimpsests. The latter have been very little used in Geography but could be understood as assemblages not simply evolving in time but signaling moments of intense changes (Haarstad and Wanvik, 2016). The palimpsest exposes processes of inscription of new components of river water over time and shows the partial legibility of past formations. The paper also uses an explicit political ecology approach and in this sense attempts to explore the connections between assemblage thinking and political ecology. The emphasis on history and the criticisms of the inevitability and stability of certain formations (Haarstad and Wanvik, 2016) bring both approaches closer. At the same time, the interest in the non-human world may reinforce the “ecology” in Political Ecology whereas issues of power and dominance and the caution of not

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overemphasizing non-human components (i.e. “naturally occurring pollution”) may strengthen assemblage thinking.

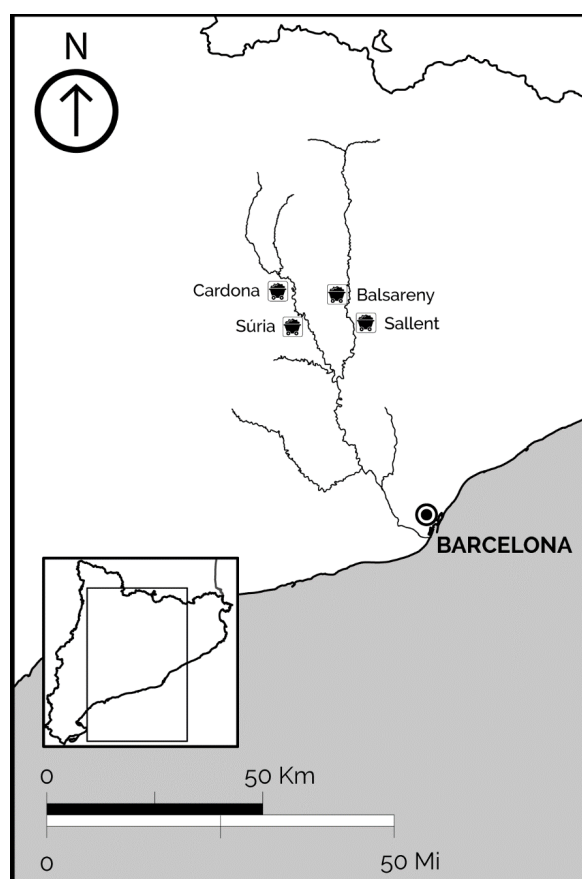
Our objective in this article is to unravel the assemblages that shape water palimpsests through time. More specifically, through a historical perspective, we select three assemblages engraved in the history of the Llobregat River (Catalonia) waters, which revolve around three pollutants namely “salts”, “trihalomethanes” (THMs), and “endocrine disruptors” (EDs). We have chosen these three pollutants over other potential candidates such as heavy metals or pesticides because of their strong continuities in the first two cases and because of the radically new challenges posed by the third. All assemblages carry specific instances of this river’s socioenvironmental history, including water, river biota, mining towns, water supply systems and other elements, pointing towards a palimpsest characterized by increasing levels of complexity and uncertainty in which non-human components play a significant role. Here we recognize the agency of “non-human others” (Ogden et al., 2013) and following Braun (2006) we could argue that assemblages are dominated by a central non-human component, the pollutant, which challenges existing scientific rationalities in the sense that pollutants are uncooperative entities that move in the mixture of ecological relations, political and economic matters, and cultural representations as well.

The Llobregat River runs for some 175 km from the so-called Pre-Pyrenees mountain range to the Mediterranean Sea just south of Barcelona. As the cradle of manufacturing in Catalonia and Spain, the fluvial landscape of the Llobregat River is punctuated with countless textile mills and factories of a very rich hydraulic capital which now constitutes the pillar of flourishing industrial and heritage tourism activities. Especially during the second half of the 20<sup>th</sup> century, industrialization in the mid and lower sections of the watershed deteriorated water quality to levels which, before the massive construction of wastewater treatment plants of the last two decades, made the Llobregat stand among the worst rivers in Europe in terms of water quality for human consumption and fluvial ecosystem health (Marcé et al., 2012) (see figure 2).

Salts are the oldest components of the Llobregat palimpsest but still a major actor in the current scenario. Moreover, as argued time and again by potash mining companies operating in the basin since the 1920s, salts do not need human intervention to act as deterrents of water quality, as they are “naturally occurring pollutants” in a catchment whose geology shows a remarkable presence of these materials. The particular presence of bromide salts, however,

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plays a significant role as an active component in the emergence of the second engraving in the palimpsest considered in this paper, namely Trihalomethanes (THMs). THMs are produced from the reaction of organic matter from industrial and urban origins with chlorine used in water purification plants. THMs have been associated with several types of cancer and therefore have been regulated by American and European legislation. Finally, endocrine disruptors (EDs) constitute the newest addition to the palimpsest and reflect the world of an advanced urban society where synthetic drugs enter the biophysical environment disguised in human wastes, possibly inducing alterations in the river biota and adverse health effects in humans as well. With time and the addition of new components, another trait of the palimpsest is that it becomes increasingly difficult to decipher. Certain components are not only invisible to the human senses, but become blurred by new additions and sometimes can only be made legible (as with the EDs) with very sophisticated laboratory equipment. Scientific and technological improvements are thus necessary to read the modern river palimpsest and make sense of its composition and interactions.



**Figure 2:** Historical potash mining sites in the Llobregat river basin, Catalonia. Source: Own elaboration.

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In this paper we attempt to decipher the pollution palimpsest of the Llobregat River using a historical approach in order to show the linkages between specific pollution moments and the wider and changing ecological, social, and economic characteristics of the river. In this we also aim to contribute to the renewed interest of critical geographers in the materiality of human-environment relations. By providing a political ecology account of historically produced materialities in the waters of the Llobregat River, we wish to explore water and its components as “simultaneously sociotechnical and socionatural” (Bakker, 2012: 616). On this base, we will be better prepared to unmask and adequately discuss “natural factors” and “externalities” in relation to water quality. Finally, the historical view will situate the changing stages of the water palimpsest and its successive layouts as it has unfolded in time.

For our article we draw on a wide number of sources. First, we combine archival materials from private and public records, including the private water company supplying the city of Barcelona – Sociedad General de Aguas de Barcelona (SGAB), and public records held at the Archive of the Spanish Government delegation in Barcelona, among other archives. Second, we have thoroughly surveyed the historical press collection of *La Vanguardia*, the main Catalan newspaper, reviewing public complaints about water quality and acute episodes of pollution. Third, we have reviewed numerous epidemiological and environmental health studies on the Llobregat River that have contributed to the scientific literature regarding salts, THMs and EDs since the 1970s. Finally, we have conducted an in-depth interview with a key person in the history of water monitoring in the case study region, a former staff member of the SGAB laboratory and river police who served between the early 1960s and 2000s.

The paper is organized as follows. After this introduction we begin to develop our narrative of the water palimpsest of the Llobregat River by recounting three moments in its history. The initial moment presents salts as the first and foremost actor, tracing the history of this substance from resource to hazard, and from a “natural” to an “unnatural” pollutant. The second moment still has salts as a visible ingredient, but other substances – paradoxically mobilized to benefit human consumption – intervene and interact to produce new pollution inscriptions in the palimpsest: THMs. In the third moment, salts are almost naturalized in the public discourse and lose preeminence to a new batch of substances (EDs), the traces of which become identifiable in the palimpsest (through usually very sophisticated equipment) but still only decipherable to a limited extent. Through our review of the palimpsest we descend in each step deeper into smaller magnitudes of measurement. Hence, if salts are measured in milligrams, micrograms are used for THMs and nanograms for EDs. Finally, in

the concluding section we attempt to unravel the logic of the water palimpsest of the Llobregat River in relation to wider processes of industrialization and urbanization in the catchment area.

## **2. Pollution as a palimpsest**

As Garcier (2010) argues, pollution is a relatively new concept mostly associated with alterations in the physical and chemical composition and properties of air, waters and soils brought about by industrialization and urbanization. Hence he asserts that pollution can only be understood when it is placed within historically-determined contexts. What constitutes pollution has also much to do with the perceived frontiers between “nature” and “culture”. Defined as “matter out of place” (Douglas, 1966, cited in Garcier 2010:132), pollutants are usually conceived as “human” flowing into “nature”, while changes to air or water composition that are deemed as “natural” are not considered pollution. Therefore the question is not so much about the chemical characteristics of elements in the air, waters or soils themselves, but rather how, when and by whom are these characteristics defined as hazardous and quality standards set. To a large extent, this process is related to the advances in instrumentation and analysis that are increasingly able to detect substances well beyond any recognition by human senses. In the case of river pollution, expanding these analytical capabilities paved the way for typical paradoxes to appear. For example, pristine looking water could in fact be heavily polluted by substances such as heavy metals and, on the other hand, foul looking water could be rather harmless. A related paradox also noted by Garcier (2010) made its appearance when some pollutants (inorganic) were able to destroy other pollutants (organic). Since the latter were in general a more pressing problem for health standards than the former it is not surprising that in some cases certain forms of pollution were considered, again rather paradoxically, beneficial, as exemplified by the history of the use of chlorine to disinfect water (Ellis, 1991; Salzman, 2012). While acknowledging the historically-determined character of the concept of “water quality”, our use of it throughout the paper refers to general human and ecological standards such as the “good chemical status” and “good ecological status” of the EU Water Framework Directive, applying both to humans and ecosystems (European Commission, 2016). Water quality standards and their implementation have been of course subject of critical studies, especially in the development literature, regarding water perceptions and the politics on water management and health (Ahlers et al. 2013; Bakker et al., 2008; Kotsila, 2017).

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In water, as in other mediums, it can therefore be stated that “pollutants are not but they become” using Erich Zimmerman’s well known aphorism about resources (Zimmerman, 1951). As a perfect example of the agency of the non-human world, substances in water may react with one another and produce new substances previously absent so that water palimpsests are not only constituted by the original substances entering water bodies but also by the by-products of the interactions between these substances. Below, we address the case of the emergence of THMs in Barcelona’s waters because as carcinogenic by-products of water disinfection with chlorine, they exemplify such interactions. However, our analysis of the pollution palimpsest could also apply to other mediums such as soils (see Engel-Di Mauro, 2014 for a compelling attempt to engage social scientists in the study of the physical nature of soil science) or air (see Graham, 2015 for a comprehensive review of themes to be addressed by a political ecology of urban air).

As noted above, pollution palimpsests do not develop in a vacuum. Substances may have, and make, their own histories (known or unknown to humans) but, using Marx’s famous dictum, not on the conditions of their own choosing. It is only when pollutants are inscribed in processes such as industrialization and urbanization that they acquire their full meaning and might be better understood and decodified (Massard-Guilbaud and Rodger, 2011). Bringing in the historical processes of industrialization and urbanization, therefore, may give ample room for substances to express themselves. In this sense, our contribution echoes Resource Geography’s renewed interest in the non-human part of the nature-society nexus (Bakker and Bridge, 2006) or, in other words, in the “rematerialization” of the discipline. According to Sneddon (2007) the more sophisticated theoretical approaches to nature-society interactions are those that attempt to give “nature” the same amplitude of scope that is given to “society”. In our case, and by focusing on the different substances and their combinations present in water, we seek to better understand processes of socioenvironmental change and conflict in our study area. It could be argued therefore that human culture along the Llobregat River has been ...“inextricably enmeshed with vibrant non-human agencies” (Bennett, 2010: 13).

Political ecology in particular needs to be infused with materiality because one of the main criticisms of this approach is precisely that it gives extensive room to the “political” while the “ecology” part plays always a minor role (Turner, 2003). Perhaps this can be explained by the fear of political ecologists of falling into the trap of “natural limits” or some other sort of Malthusian argument used to justify human suffering. One way to circumvent this argument would be for political ecology to adopt a more historical approach (Armiero, 2008; Otero et

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al., 2011; Peet and Watts, 2004; Robbins, 2006), but the full encounter between this discipline, environmental history and historical studies of science and technology remains a pending question (Davis, 2009).

In our case study, a historical approach could be useful for developing a political ecology able to recognize the agency of both human and non-human components in three ways. First, polluting substances only acquire and manifest their capacities within specific historical moments in the processes of industrialization and urbanization. Salts in the river mobilize their powers after mining activities begin to release massive quantities of potash processing residues into the environment. Similarly, as by-products of the process of purifying water, THM become problematic at the time when the impetus of urbanization forces the extraction and making drinkable of more and more raw water from the river (for basic as well as sumptuous uses such as swimming pools). It is from this moment that they acquire the capacity of “making history and geography” as Castree (quoted in Bakker and Bridge, 2006: 8) defends.

Second, history is needed to shield us against the perils of naturalization. In the case of pollutants, this is particularly relevant when the existence of a natural “saline” geology has been used to play down pollution originating from human activity, like potash processing, in a similar way perhaps that radioactivity was naturalized in the Cold War (DeLoughrey, 2011), or earthquakes and tsunamis (as powerful and destructive as they are) are used to excuse technological accidents such as the Fukushima disaster of 2011 (Pritchard, 2013). Regarding salts in river water, modern isotopic techniques allow elucidating the source of salinization (“natural”, or related to mine tailings or fertilizers, see Otero and Soler, 2002) but, as we will show, historical social movements and accounts had long before warned about their different origins and denounced its perils. In taking issue with the arguments that naturalize pollution, we concur with Barca (2014a) that scholars should engage both with natural sciences – especially research on Public Health – and environmental humanities if they wish to unveil how narratives of environmental and human health degradation have been silenced and therefore contribute to deconstructing regimes of truth that have sustained processes of ecological degradation. A next step, as advanced by Engel Di-Mauro (2014) for the case of soil science, could be for political ecologists to reclaim the study of waters, soils or the air from the hands of positivist science.



Finally, a historical approach may also be helpful to comprehend how the technological and scientific process of identification and analysis of new pollutants regulates their status from “natural” to “unnatural” and necessarily precedes and shapes environmental regulations in the form of water quality standards. This applies both to the identification of THMs in the 1970s and to the new wave of pollutants that appear to be changing the very biology of certain aquatic species. The increasing amount of antibiotics, painkillers and psychotropic drugs found in river water and in wastewater plants can only be understood from the vantage point of an advanced urban society reworking once more its relationship with nature by creating new components and networks in an already complicated water palimpsest. Their very presence is only problematized when new scientific technologies in the modern laboratory are able to identify these substances, track them and study their potential impacts.

### **3. The Llobregat Water Palimpsest I: A river of salt**

Running parallel to the Llobregat River, hidden from weekenders and school children visiting the old industrial relics, there is a 120 kilometer long pipe transporting 150 liters of salty wastewaters every second. The so-called brine sewer carries the wastewaters produced in the potash mines of inland Catalonia away to the Mediterranean Sea. However, this massive infrastructure, built in the 1980s, has not prevented salts reaching the river. Before the mines started operating, salts were already naturally occurring in the Llobregat and its tributary, the Cardener. A large part of the basin is located in what used to be an ancient sea. When water evaporated saline layers appeared extensively in the North and West of the catchment. For many centuries, salt became the main resource of this area and in medieval times towns such as Cardona gained power and prestige (manifested in the construction of an impressive fortress and in one of the most prestigious nobility titles of Spain) thanks to the economic exploitation of salt, a basic element in the preservation of food until fairly recently (Sauri and Llurdés, 1995).

Therefore, the early versions of the Llobregat River palimpsest already included salt concentrations as one of its distinctive features, and episodes of high mobilization of salts occurred during the periodic Cardener flash floods (Lloret, 2004). In the early 20<sup>th</sup> century, however, the discovery of potash salts – and the decrease in the use and commercialization of common salt – signaled a new era of salt intrusion into the catchment as, irremediably, brine and tailings became pervasive during the production process (Lottermoser, 2010) (approximately three kilograms of salt are produced to obtain one kilogram of potash).

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Unmanaged, brine percolated into the groundwater and/or was discharged directly into the river waters. Solid salt waste accumulated first inside abandoned mine galleries and, after the 1960s, in large piles of debris forming mountains that have kept gaining height and volume to this day (Gorostiza, 2014; Lloret, 2004). *El Cogulló* mine tailing, for example, is the largest accumulation of industrial waste in Catalonia, with at least 50 million tons of salts and around 5000 extra tons being added every day (*El Periódico* 2013). As a landscape produced by almost a century of human labour (Barca 2014b), mountains of salt debris have become non-human actors on their own right. Even if human activity would radically come to a halt, these massive mine tailings would remain in the landscape and continue salinizing the basin for the years to come. Rainfall dissolves the salts and the resulting runoff easily enters aquifers and streams with the subsequent effects on the composition of water (Cañedo-Argüelles et al., 2013; Lloret, 2004). Salt and other inorganic pollutants from mining have been traditionally difficult to remove in treatments at water purification plants (Fernández-Turiel et al., 2000). River microorganisms and invertebrates can also be significantly altered by the salinity caused by mine tailings, promoting the dominance of certain organisms and changing the composition of the invertebrate communities (Cañedo-Argüelles et al., 2012, 2017, Ladrera et al., 2017).

The history of commercial potash extraction in the region started in 1925, but this activity was soon challenged by other river water users. The first legal complaints against the different mining companies were filed by downriver industrial owners, claiming that mining wastewaters were adulterating the river<sup>1</sup>. The Barcelona private water company, SGAB, noticed increasing levels of salinity in the groundwater of the Llobregat valley used to supply the city. Fearing an inexorable worsening of the river conditions – no desalination technologies existed that could be applied to water supply – the SGAB joined the complaints in the early 1930s, and so did fishers and farmers of the Llobregat basin. Protests expanded during the brief democratic period of the Spanish Second Republic (1931-1939). Legal limits to salinity concentrations in river waters were established and the first project of brine sewer was drafted (Gorostiza et al., 2015).

Interestingly, the Barcelona water company was careful enough to complain about salinization while at the same time insisting that water was perfectly drinkable. At any rate,

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<sup>1</sup> “Informe sobre la influencia que tienen las explotaciones mineras en la cuenca del río Llobregat en el aprovechamiento de aguas subálveas del mismo río para el abastecimiento de Barcelona y propuesta provisional”. November 3, 1931. Aigües de Barcelona General Archive (AGAB), box 5615, folder 15.

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the problem most feared was that water could become so salty that people would reject it<sup>2</sup>. But from SGAB's point of view, it involved no risk for human health. In any case, it was feared that foul tasting water could force citizens resorting to private urban wells that the Municipal Laboratory regarded as unsafe (*La Vanguardia*, 1935a). Only some of the anarchist physicians that joined the grassroots groups challenging the mines warned about the long term health implications of drinking salty water (*La Vanguardia*, 1935b; Martí Ibáñez, 1937).

Yet, while several actors blamed the mines for the salinization of Llobregat waters, mining companies argued that salt was a naturally occurring pollutant in the geologically saline region of central Catalonia. As possible causes of the water salinization in Barcelona, companies pointed at the growing population and water consumption in the mining region, or to the possibility of sea intrusion in SGAB wells (Gorostiza et al., 2015). The discussion regarding the causes of salinization stalled. At this point, the Spanish Civil War (1936-1939) significantly decreased the operations of potash mining activities. Under the harsh conditions of the period, with repeated bombings of Barcelona, the workers of the SGAB, now collectivized by anarcho-sindicalists unions, continued monitoring the water quality and determined a very relevant decrease in salinity (Gorostiza et al., 2013). Their archival records challenged the naturalization argument, 65 years before Otero and Soler (2002) tracked the presence of Sulphur isotopes to distinguish between "natural" salinity and that related to potash salts mining in the Llobregat River (Gorostiza et al., 2015).

After Franco's victory in the war, mines resumed their activity and potash extraction increased again, along with salinization. During the first years of the Francoist dictatorship, autarkic policies were implemented by the regime, much in the spirit of its allies fascist Italy and Nazi Germany (Catalán, 1995; Gorostiza and Ortega, 2016). Support for the development of national industries was accompanied by the deregulation of industrial and sanitation procedures (Corral Broto, 2014). In the case of salinity in the Llobregat River, regulations approved in the 1930s were relaxed. At the same time, many of the scientists and doctors who had participated in the protests took the path of exile, persecuted for their political ideas, never to return to Spain (Gorostiza et al., 2015). Although protests on water quality were silenced and no news on the topic can be found in the published press, secret police reports prove that uneasiness around this issue continued among the population<sup>3</sup>. The SGAB

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<sup>2</sup> SGAB director to CISALL president, August 17 1931. AGAB, box 5615, folder 12.

<sup>3</sup> Servicio de Información, boletín decenal nº12. Dirección General de Seguridad. Jefatura General de Policía, Barcelona. 23 April 1948. Archive of the Spanish Government delegation in Barcelona, box 310.

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protested the administrative support of potash mines, painting a quasi-dystopian future for Barcelona should the waters become totally salinized. But, for obvious reasons, protests were kept in private and can only be traced in the archives.<sup>4</sup> The construction of the brine sewer was repeatedly postponed.

In the meantime, water consumption increased in Barcelona, and in 1953 the SGAB obtained a concession to start diverting surface water from the Llobregat River in order to meet the demand of the then rapidly expanding city. Due to deteriorating water quality, it was necessary to build a water purification plant to treat the Llobregat water intake. Surprisingly, this plant was built in the final part of the river, near Barcelona. The engineers' trust in purification technology explains this choice, along with the pre-existing water rights (Honey-Rosés, 2012). Inaugurated in 1955, the plant soon underwent substantial enlargements as the water company obtained additional flows of Llobregat surface waters. While the purification plant effectively removed organic and other pollutants, it left bad odors and chlorine tastes in the water so that water flowing from the taps would often appear whitish and smelly and thus unpleasant to drink. In the 1950s and 1960s, chlorine and the uneasiness of the population regarding some episodes of strong tastes and odors occasionally emerged in the press (*La Vanguardia Española*, 1955; 1958; 1959a; 1967a; 1967b). Newspapers blamed new industries for polluting the river. However, while the problem of new pollutants was very real, the growing salt concentrations were also an unsurmountable difficulty for the new water purification plant. In 1959, Barcelona's city mayor referred to the potash mines pollution in communications to Franco himself when asking to bring water to Barcelona from more distant sources (Porcioles, 1994), while the private water company complained that the activities of the mines had not stopped growing and the brine sewer had not yet been built two decades after the end of the war<sup>5</sup>.

The construction of a first reservoir in the Llobregat basin (Sant Ponç) temporarily alleviated the need for the brine sewer because it allowed the regulation of river flow and thus the dilution of mining spills<sup>6</sup>. It did not, however, prevent episodes of high salinity, such as the record of 2411 mg/liter reached in 1964 – ten times the legal limits of the 1930s. Proposals to

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<sup>4</sup> “Escrito dirigido por esta sociedad, en diciembre de 1949, al Excmo. Sr. Alcalde de la ciudad, relativo al servicio de abastecimiento de agua, actual y futuro, y el problema de la salinidad de la misma, y anejos al escrito Sociedad General de Aguas de Barcelona, Barcelona”. Archive of the Spanish Government delegation in Barcelona (documents awaiting classification, box 9, folder 7).

<sup>5</sup> SGAB director to Minister of Gobernacion, October 22 1956. AGAB, box 10.958.

<sup>6</sup> CISALL to General Director of Hydraulic Works, July 31 1958. Central Archive of the Catalan Water Agency, box 87.

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bring water to Barcelona from more distant sources (later materialized in the Ter River transfer of 1966) sought not only to increase the quantity of water available for Barcelona but also to improve the poor water quality. These were also times when the rising welfare of the Barcelona population meant that some families could afford to buy a small car and tap water from public fountains in the nearby countryside to provide for their weekly drinking needs. Barcelona newspapers also show numerous examples of advertisements for domestic water purification devices, which made explicit reference to the taste of chlorine in water and promised to improve it (see *La Vanguardia Española*, 1959b; 1961; and 1965 for some examples).

Both the construction of reservoirs allowing control over the Llobregat river flows and the Ter water transfer supplying a significant part of the city of Barcelona, contributed to temporarily alleviate the salinity problem and postponed once more the construction of the brine sewer (Honey-Rosés, 2012). Yet while Ter water, coming from the north of Catalonia, supplied the Eastern side of Barcelona since 1966, the more Western neighborhoods – including the affluent Sarrià district – received the unpleasant waters of the Llobregat. As proved by a serious episode of industrial pollution during the summer of 1967, which rendered Llobregat water practically undrinkable for weeks, the Ter River water transfer might have improved the supply of Barcelona, but water quality in the households drinking from Llobregat remained a serious problem (*La Vanguardia Española*, 1967a; 1967b).

In order to prevent contamination from dangerous heavy metals such as chrome, nickel or zinc, the water company established a river police, which monitored spills from the industries of Llobregat and its tributaries, in an effort to minimize the effects of pollution in the water treatment plant (Honey-Rosés, 2012; Lloret 2015, interview). In comparison to the compelling threat represented by heavy metals and other pollutants such as detergents, salinity was apparently a less important issue, either “natural” or naturalized. By the 1970s, five decades of river salinization made salts a taken for granted element in the river palimpsest, where they became buried by a cocktail of metal and industrial components. However, salinization of the underground waters of Barcelona had not ceased growing between 1939 and 1973. In 1974, as the Francoist dictatorship agonized, again a project of brine sewer was approved. To celebrate the occasion, several physicians, chemists and engineers organized a colloquium on the pollution of Barcelona’s waters (Oliver Suñé, 1974). This very same year, however, a discovery was going to shake the foundations of the water treatment regime based on chlorine.

#### **4. The Llobregat Water Palimpsest II: Enter the THMs**

During the early 1970s Johannes Rook, a chemist working at the Rotterdam Water Works, made a puzzling discovery. During routine water analysis, and while checking the performance of treatment techniques for eliminating pollutants, he noticed that after water had been chlorinated gas chromatographs showed four previously unexisting peaks. Concerned, he aimed at identifying these impurities which appeared to be caused by chlorine. Applying advanced techniques, he identified these substances as Trihalomethanes (THMs), a type of haloforms, and chlorination as the cause of their formation under the presence of organic matter and bromide. It followed that if haloforms were determined to be harmful for human life, the use of chlorination would need to be reassessed, maybe restricted, and new techniques or steps of water treatment developed (Rook, 1974).

Soon laboratories around the world started replicating these experiments and searching for THMs in their chlorinated waters (see for example Bätjer et al., 1980; Ventura and Rivera, 1985). Health research soon confirmed Rook's suspicion by positively correlating levels of THMs with several types of cancer (Cantor et al., 1978). Moreover, unlike salts, THMs' penetration into the human body is rather ubiquitous. THMs can be ingested through drinking water, and inhaled or adsorbed when showering or swimming in a pool. Long exposure times implied that effects might not surface for many decades (Villanueva et al., 2006; Villanueva et al., 2007). Later research has identified that the quantity and proportion of THMs in the water would depend on the amount of chlorine added, the quantity of organic matter, bromide concentration as well as pH and temperature, among other factors such as contact time (Gray, 2008; Nikolaou, 2003). Significantly, THMs formation continues after the water is treated, so their concentration may change in different points of the supply system.

The discovery of THMs unveiled a grave paradox. The use of chlorination, possibly the discovery saving more lives during the 20<sup>th</sup> century, generated certain by-products that proved harmful to human health (Salzman, 2012). In the following decades hundreds of disinfection by-products (DBPs) have been identified, but THMs remain the main health concern (Gray, 2008; Nikolaou, 2003). Significantly, it was the technical and technological advances improving the knowledge of the water pollution palimpsest that allowed this finding to happen. For his research, Rook had developed gas chromatographic techniques which, connected to the use of a mass spectrometer, permitted tracking the presence of different components along different points of the water treatment process (Gray, 2008; Rook, 1974). The new scale involved was not milligrams per litre anymore, as with salinization, but

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micrograms per litre. Techniques improving analysis and reaching new (micro)scales – moving from parts per million (ppm) to parts per billion (ppb) – allowed for revealing the paradoxes of chlorinating. These new technologies therefore increased the knowledge about the complexity of the water palimpsest and the ample range of DBPs emanating from chlorination.

However, in the late 1970s, Barcelona water users and water laboratory managers seemed to have more urgent matters to worry about. As the Green movements denounced during the summer of 1978 in their “March for the Llobregat River” (*Marxa del Llobregat*), the salinization of the river waters was no longer the more urgent matter in the face of chemical and metal pollutants such as chrome or cyanide from industrial sources (*La Vanguardia*, 1978a). In fact, later the same year an episode of cyanide contamination in Llobregat waters caused deep concerns in Barcelona (*La Vanguardia*, 1978b). SGAB laboratory workers were collaborating with university researchers who had developed spectrometers and were devoted to tracing different components in the highly polluted Llobregat waters. Starting in 1977, SGAB laboratory analysed the presence of THMs in the Llobregat waters before the intake, and at different points of their treatment plant and chlorination process (Lloret, 2015, interview; Rivera et al., 1982).

The results obtained for total THMs were often higher than 100 micrograms/liter, which was above the limit established by the American EPA for total THMs in drinking waters.<sup>7</sup> Also, the registered levels of bromomethanes (a type of THMs) were higher than those described in the literature by that time. SGAB laboratory managers attributed these results to the presence of high levels of bromide in the Llobregat waters, the precursors or bromomethanes, which, in turn, were related to discharges by the potash mines (Rivera et al., 1982). A similar phenomenon had been observed before in Bremen, where the Weser River carried high levels of bromide due to potash effluents. Despite the low levels of chlorination applied in Bremen, high concentrations of bromoform (a type of THM) were recorded (Bätjer et al., 1980). Further research carried out by the SGAB laboratory by sampling before and after the potash salt mines confirmed that the high levels of brominated THMs of the Llobregat were related to the salinization caused by the activity of the mines. In certain moments, THMs concentrations had reached more than seven times the maximum regulated by the EPA (Nokes, 2003; Ventura and Rivera, 1985; Ventura and Rivera, 1986). After almost 50 years,

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the warnings of 1930s anarchist physicians proved to be justified. Water salinization was not only about bad taste; it could be also about threats to human health.

Equipped with this new knowledge, water quality improvements required first that water processed was as clean as possible, in order to avoid the presence of THM precursors. Second, improvements in treatment processes, such as activated carbon filters or aeration, were also needed in order to reduce the use of chlorine and thus the presence of THMs. Following this path, activated carbon filters were installed in the SGAB purification plant in 1977 (*La Vanguardia*, 1990a; Lloret 2015, interview). However the main possible improvement targeted water quality before processing, and it was the same solution that had been proposed in the 1930s: building a pipe to take mine discharges directly to the sea (Rivera et al., 1982; Ventura and Rivera, 1985; Ventura and Rivera, 1986). Only this time the project finally became a reality. Between 1982 and 1989 SGAB built the brine sewer, which was planned and financed by the reestablished Catalan government (Aigües de Barcelona, 1996).

The brine sewer started operating in 1990 and approximately halved the salinization levels of Llobregat, including its bromide components. Chloride and bromide in Llobregat waters decreased in a similar fashion (Martín-Alonso, 1994) and the frequent complaints about taste and odour also seemed to decrease (*La Vanguardia*, 1990b, 1991). However, despite the situation improving in relation to the 1980s, the presence of bromide was still significant, thus contributing to the formation of THMs (Cancho et al., 1999; Pauné et al., 1998). The first epidemiological studies linking the presence in THM in the waters of Barcelona with bladder cancer were published in 2001 and made the first page of regional newspapers (*La Vanguardia*, 2001; Villanueva et al., 2001). While short-lived, these episodes of mass media frenzy regarding long-term exposure to THM – later repeated in 2007 (*La Vanguardia*, 2007) – illuminated to the general public the limitations of existing water purification technologies. Moreover, this also came at a period of suburban development featuring thousands of new private swimming pools, traditionally equipped with chlorine disinfection systems prone to the generation of THMs.

At any rate the legislation adopted a risk averse position. THMs concentration in water was limited to 150 micrograms/liter in 2003 (when this pollutant was first subject to specific

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<sup>7</sup> The American limit was used as a reference because THM levels were not subject to regulation in Spain until 2003.



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legislation in Spain) and subsequently lowered to 100 micrograms/liter in 2009 to comply with the European Water Framework Directive. These levels were very challenging for Barcelona water processing systems and coincided with a renewed increase in the salinization of the Llobregat waters after the Israeli corporation Iberpotash bought the mines in the late 1990s and expanded extraction. A few years later the brine sewer worked at full capacity (Badia, 2001). Despite further expensive improvements of the brine sewer paid for by the public administration, the pipe became more susceptible to leaks pouring extremely salty materials into the adjacent lands and the Llobregat River.

After all, the policy option chosen to control water pollution in the Llobregat prioritized dealing with salinization at the water purification plants downstream (at increasing energy and economic costs that were rapidly channeled to urban consumers) rather than acting more decisively on the environmental impacts of potash mining upstream (Gorostiza, 2014). In order to ensure compliance with European legislation and appease the mass media concern, end-of-pipe technologies of water treatment prevailed. After 2008, the Llobregat water purification plants incorporated desalination technology. Electrodialysis Reversal (EDR) proved to be able to reduce bromide concentrations and maintain the THMs formation potential under regulated levels (Valero and Arbós, 2010). In 2010, the Llobregat water purification plant of Abrera was the world's largest plant using EDR and was conceived as "a new example of a large scale application of a desalting technology to improve the quality of drinking water." (Valero and Arbós, 2010: 170). Of course, this came at the price of high energy consumption and growing public spending (200 million euros) that worsened the financial situation of public water authorities in Catalonia. In a similar manner, the second water treatment plant of the Llobregat waters implemented Reverse Osmosis (RO) technology, capable of removing all solid compounds, and considered the ultimate frontier of water treatment technology (Greenlee et al., 2009, Honey-Rosés, 2012).

These technologies ensuring compliance with EU legislation regarding THMs were the first step in a changing paradigm of water purification. As catch-all purification technologies, they were able to reduce the formation of THMs by capturing bromides, but also improved the removal of a new generation of emerging pollutants (regulated and non-regulated) that new laboratory technologies were increasingly able to identify at micro concentrations, such as pharmaceuticals, pesticides or endocrine disrupting compounds. These constitute the third and final engraving in the Llobregat palimpsest.

**5. The Llobregat River Palimpsest III: newest participants: Endocrine disruptors, abuse drugs and other elusive substances**

The newest family in the Llobregat palimpsest escapes any previous categorization of pollution since in this case we are not dealing with conventional waste products of mining or industrial origin but with substances and by-products directly related to an advanced urban society and its constellation of chemicals, pharmaceuticals, and other assorted drugs, all firmly entrenched in the daily lives of millions of people. In this regard the Llobregat palimpsest is enriched during this period by anti-inflammatory substances, antibiotics, hormones, detergents, flame retardants, nanomaterials, and the myriad of pharmaceutical by-products consumed massively today in many households. The advanced laboratory technologies that are able to trace substances at unprecedented scales also contribute to extend social alarm about the presence of certain elements. Wastewater treatment plants cannot be realistically expected to retain all these products; however they are hardly tolerated by an increasingly risk adverse urban society eagerly absorbing media stories about strange forms of contamination.

In Barcelona, one of the most successful media pollution stories of the recent years was the “discovery” of cocaine residues in the large wastewater treatment plant located near the end of the Llobregat River. According to the expert that announced the discovery to the press, the quantity of cocaine residue found in the plant amounted to some 20,000 daily doses of the drug (twice that quantity on weekends). The water analyses also detected minor quantities of other drugs (ecstasy, ephedrine, LSD, etc.) as well as countless pharmaceuticals. As noted above, these new members of the palimpsest differ considerably from the former families of pollutants. To begin with, their presence is only ascertainable through sophisticated analytical tools and techniques able to detect substances at extremely low concentrations (micrograms, nanograms), the hazardousness of which usually depends on astronomical consumption figures. For example, immediately after making the headlines with the discovery of cocaine, researchers hastened to add that, at the concentrations found, one person would need to drink thousands of liters of water daily to absorb the equivalent to one dose of cocaine (*El Mundo*, 2008).

A different matter, however, are the effects of these substances on the biophysical environment. Some of the substances can be grouped under the family of so-called endocrine disruptors able to affect river biota at even very low concentrations. Studies in the Llobregat

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river have shown how Alkylphenols, for instance, a type of xenoestrogens, may induce sex changes in fish (males developing female organs) (Petrovic et al., 2002; Sole et al., 2000). At the same time, anti-inflammatories may negatively disrupt micro invertebrate populations and thus alter trophic chains. Recent discoveries of alterations in fish and invertebrate populations add an uneasy concern about the still largely unknown effects of these pollutants (Barceló and López, 2007).

As with THM, media stories about these emerging contaminants have caused growing concern and debate on the capacity of water treatment stations to remove these substances (*La Vanguardia*, 2009; 2010). In the case of Llobregat, several studies have confirmed the presence of endocrine disruptors in the lower course of the river and correlated it with estrogenic activity (Céspedes et al., 2005). Further research on the river identified other emerging contaminants such as pesticides or pharmaceuticals, very often at nano-scales (Kuster et al., 2008). Recent reviews of the river's pollution have analyzed the presence of abuse drugs, surfactants, estrogens and personal care by-products, among other substances (González et al., 2012). In parallel, other studies have analyzed the performance of Reverse Osmosis technologies to remove emerging contaminants, certifying that despite the general high efficiency rates in the removal of pharmaceuticals, some substances were not eliminated so efficiently (Radjenovic et al., 2008). In the latest configurations of the water palimpsest, even small traces of non-removed contaminants can be detected in nano-filtered waters. While the EU has not yet regulated the legal concentrations of these substances in river and drinking waters, the first signs of social protest against the newest pollutants are already emerging. In a recent event (February 2016) in Barcelona, epidemiologists and activists together denounced the stalling of the process of legal regulation of EDs at the European level by industrial lobbyists and demanded its prompt resolution (Ecologistas en Acción, 2016).

### **6. The palimpsest completed: a history of pollution in the Llobregat River**

In this paper we have attempted to elaborate an historical account of pollution in the Llobregat river moving away from conventional cause and effect modes of explanation and bringing in more complex and yet, in our opinion, more illuminating interpretative frameworks. In doing so, we have used the geographical literature on assemblages, introducing the notion of palimpsests to reflect legacies but also discontinuities in water pollution. Assemblages emphasize above all interactions between the human and the non-

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human components of pollution and defy notions of stability and permanence through time. Pollution landscapes therefore are always open to reconfigurations arising from the constant flux of change peculiar to material and social forces. The palimpsest of pollution in the Llobregat River becomes therefore a recorded history of different and increasingly complex assemblages involving the various and changing components of these social and material forces. Social components in the assemblage may interact among themselves (for example, potash mining and environmental legislation) but material aspects may interact among themselves as well (for example chlorine and bromides, forming THMs). Both are endowed with agencies of their own which are then mobilized in the different assemblages.

In order to decipher the water pollution palimpsest by means of a political ecological lens we must characterize the historical contours under which certain substances, visible and invisible, more harmful and less harmful, with greater or lesser powers to interact and create new components, etc. strive and prosper in the river waters. By doing so and as argued above we must leave room to the non-human world and particularly to the rich and complex world of pollutants and their dynamics which may or may not interact with human elements. Thus we may identify moments in the industrialization and the urbanization process in which certain pollutants have been especially active. Salts have been and still are a basic component of the Llobregat palimpsest and massive technological developments have not prevented their persistently active role in the ecology of the river. While intimately related to salts, THMs' inscription in the Llobregat water palimpsest departs significantly from them and acquires a life of their own. First of all, THMs go unnoticed by the human senses even though their approach to the human body may be rather ubiquitous. They can be ingested through drinking water, inhaled when they evaporate, or adsorbed through the skin when showering or taking a swim in the chlorine rich waters of many pools in suburban Barcelona. The technological transition in water treatments (i.e. from chemicals such as chlorine to energy intensive membranes) has not prevented pollutants from remaining active and reappear time and again under more sophisticated disguises to feed tremors among an increasingly risk averse society for which the substance itself and not its quantity or concentration is what really matters. This again reflects the power of the non-human world in this case in raising fears of unseen and unfelt perils. It is rather symptomatic that substances such as the myriad of pharmaceuticals forming part of our daily lives (and in theory improving our welfare) are metabolized in our bodies in forms that later on may become disruptive for us and for the river biota. In this sense, we can also read in the palimpsest recent episodes in the histories of urbanization in

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Barcelona, ranging from the suburban expansion of the last two decades (accompanied by over 50,000 swimming pools in the metropolitan region, all chlorinated and therefore susceptible to exposure to THMs among other problems), to the devastating effects of the current economic crisis in Barcelona and its effects on the consumption of legal and illegal drugs.

The palimpsest also embodies pollution-based socioenvironmental struggles that attempt to unmask the so-called “economic externalities” and treat them “...not as market failures, but as cost-shifting successes that might give rise to environmental movements” (Martínez-Alier, 2002: 257). The historical struggle against potash mines and the unveiling of salt pollution and THM in drinking water not as a natural process but as an outcome of specific accumulation practices represents an example of these conflicts. Considering the long exposure times to THM, the impact of these components in the health of Llobregat water users could be characterized as a process of slow violence (Nixon, 2011) or environmental violence (Barca, 2014a). The 1930s struggles against the impact of potash mines were wiped out by the dictatorship but reemerged after Franco’s death. The current owner of the potash mines has presented ambitious plans for increasing mineral extraction but at the same time is fighting a fierce battle regarding the costs of cleaning up the salt waste mountains emerging crystal white from the brownish landscapes of the middle sections of the Llobregat catchment (*La Vanguardia*, 2014). In 2014, after several protests the EU commission began proceedings against the Catalan and Spanish governments for infringing EU waste directives and endangering the environment and human health in the Bages region where the potash mines are located. Despite acknowledging the important role of potash extraction in the pollution of Llobregat catchment area, one of the Spanish administration arguments was, again, that it was not possible to determine how much pollution was “natural” and how much related to potash extraction (Secretariat-General of the European Commission, 2014). Mine tailings have become a powerful non-human actor in the region and, unless restored (at exorbitant costs), will remain active for the years to come – even if mining activity would cease. According to the plans of reduction and re-use announced by the current owner of the mines, waste will not be eliminated before 2065. The dystopic futures brought about by the salinization of Llobregat waters may have not come true, but the landscape legacies of potash mining continue conditioning river biota and invertebrate communities (Cañedo-Argüelles et al., 2012, 2017, Ladrera et al. 2017) as well as the technology required for human water supply.

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The water palimpsest also embodies the possibility of new accumulation frontiers in an apparently exhausted water cycle, as far as business opportunities are concerned. Thus, the discovery of new families of pollutants such as those described in the previous sections increases social alarm and justifies increases in water prices and taxes to cover the costs of the (expensive) treatments needed to make drinking water perfectly safe, no matter how chimerical this assertion may be. Given the sustained declines in water consumption in many cities of the developed world, the balance sheets of water companies reflect an inability to maintain revenues through time. The breakdown of urban water into a multitude of flows, each one with its own specific materialities, may also open a number of windows of opportunity for reinvigorating the accumulation frontier of water supply and sanitation services that languishes after the failures in privatization processes (in both the developed and the developing world) and the continuous loss of revenues associated with falling consumptions. Flows of different qualities therefore may be marketed accordingly so that the materialities of water can be turned into active sources of revenue. Not surprisingly, the water industry is calling upon, among other areas, wastewater as a resource worthy of close attention for its economic potential. In this sense, water quality rather than water quantity per se may be the next terrain of conflict at a much larger scale than it has been until now. Hence, a deep understanding of the substances present in the water and of their interactions or, in other words, a deep understanding of the water palimpsest, would be of capital importance to ensure just and sustainable outcomes for both the human and the non-human worlds.

Finally, our capacity to read and decipher the water palimpsest comes necessarily mediated by the development of new technologies and scientific techniques that identify, quantify and characterize the impact of new pollutants. The development of new technology and laboratory techniques in the last fifty years has widened the scale of studies to the nano-level and added complexity and uncertainty. A historical approach to political ecology excavates the role of power in the production of knowledge about health and the environment regulating the status of pollutants from “natural” to “unnatural” and necessarily preceding and shaping quality standards and environmental regulations such as the maximum concentrations allowed and regarded as risky for the environment and the human body. At the same time, by unearthing the silenced narratives of resistance to ecological and human health degradation, environmental history can put in value non-scientific and vernacular knowledge and challenge the perils of naturalization.

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## Research article VII: Dangerous assemblages

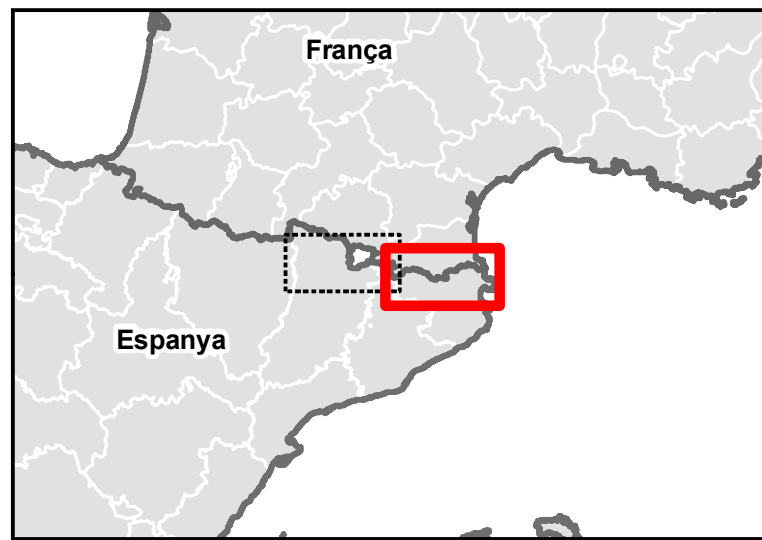
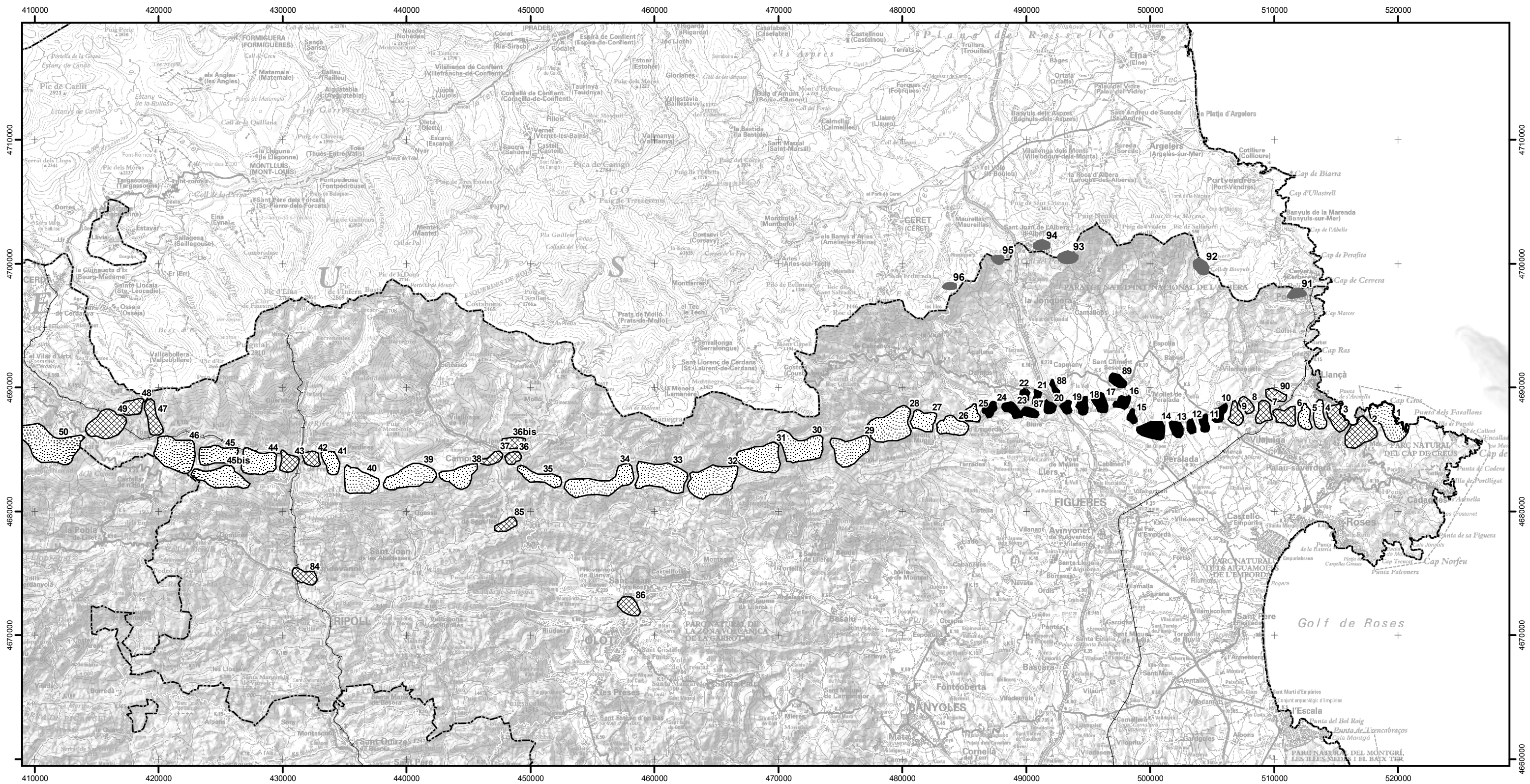
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# **ANNEX I**

## **Pyrenees maps (research article III)**

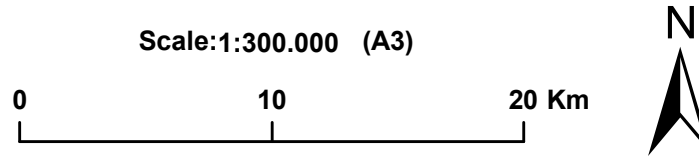






- RC categories**
- A
  - B
  - C
  - CRAv
- Railway** Railway
- State and province borders** State and province borders

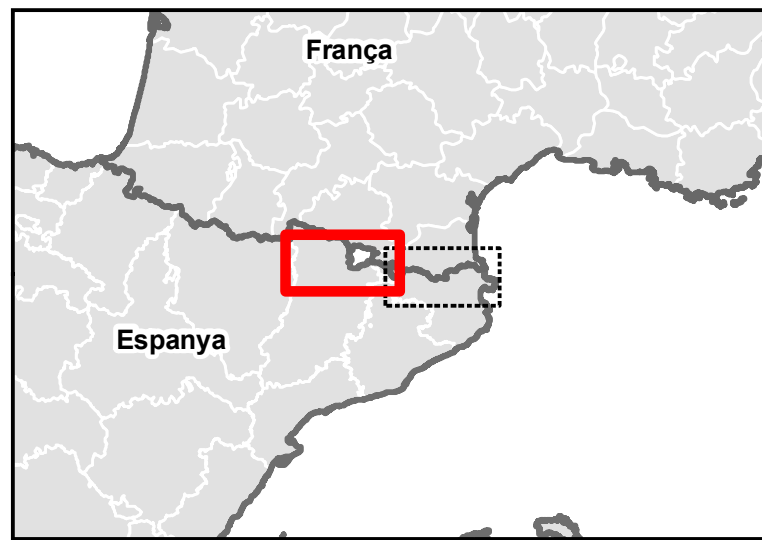
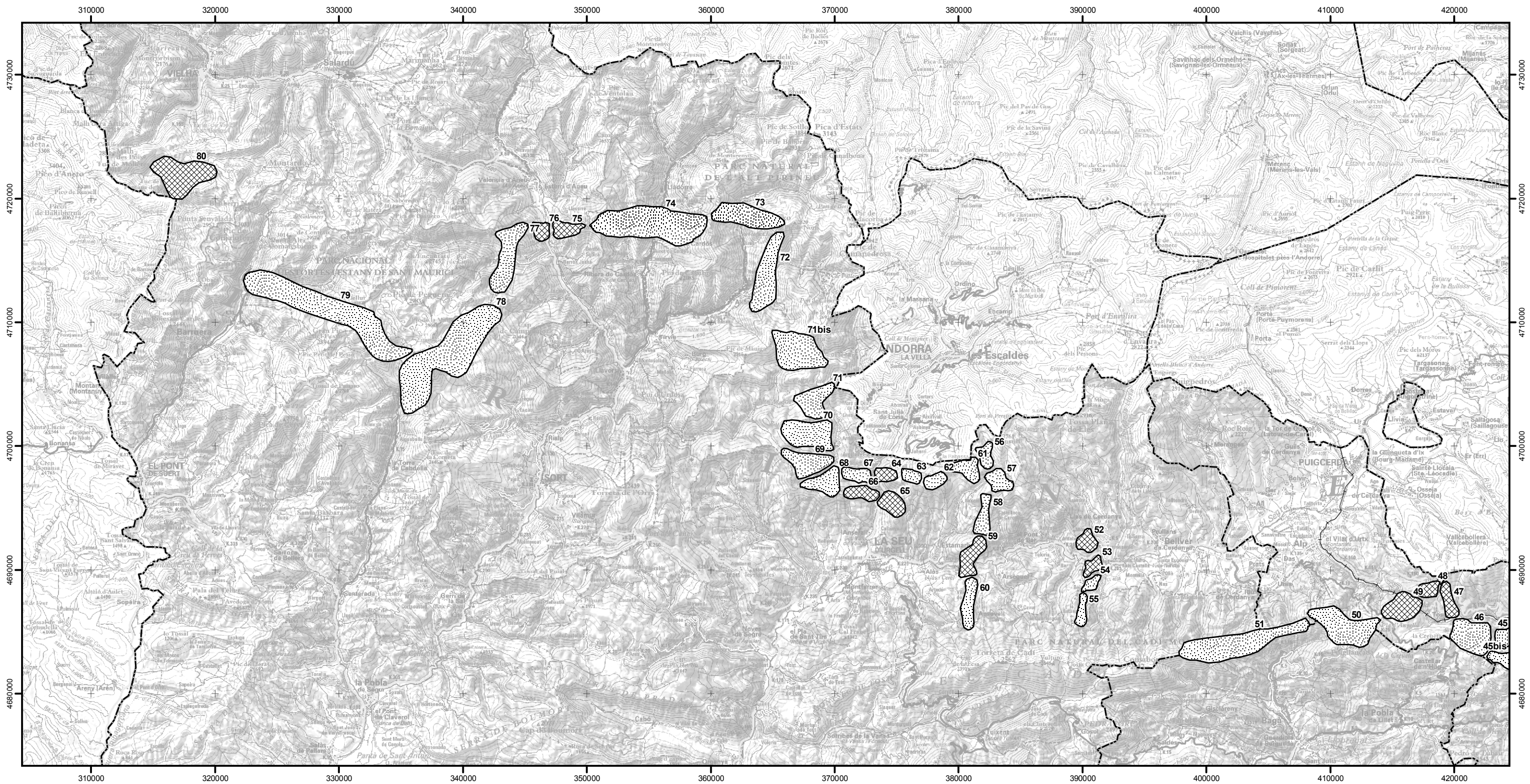
**MAP 1:  
CATEGORIES OF RESISTANCE CENTERS**











- RC categories**
- A
  - B
  - C
  - CRAv
- Railway**
- State and province borders**

**MAP 1:  
CATEGORIES OF RESISTANCE CENTERS**

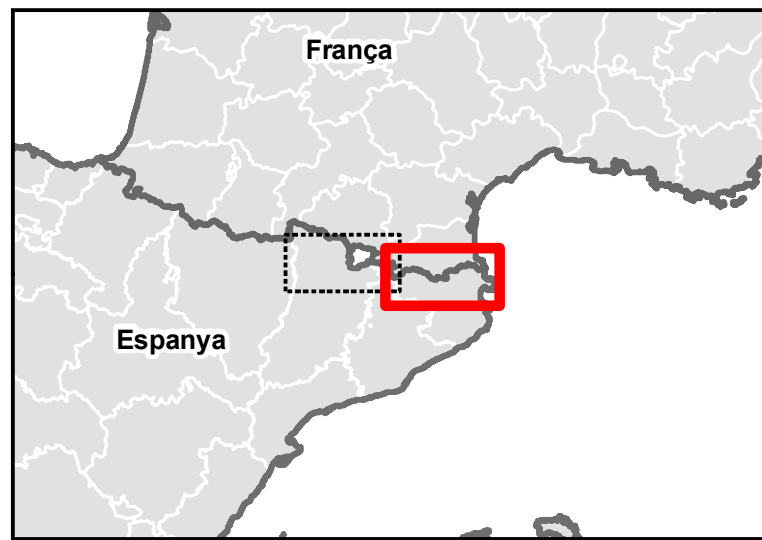
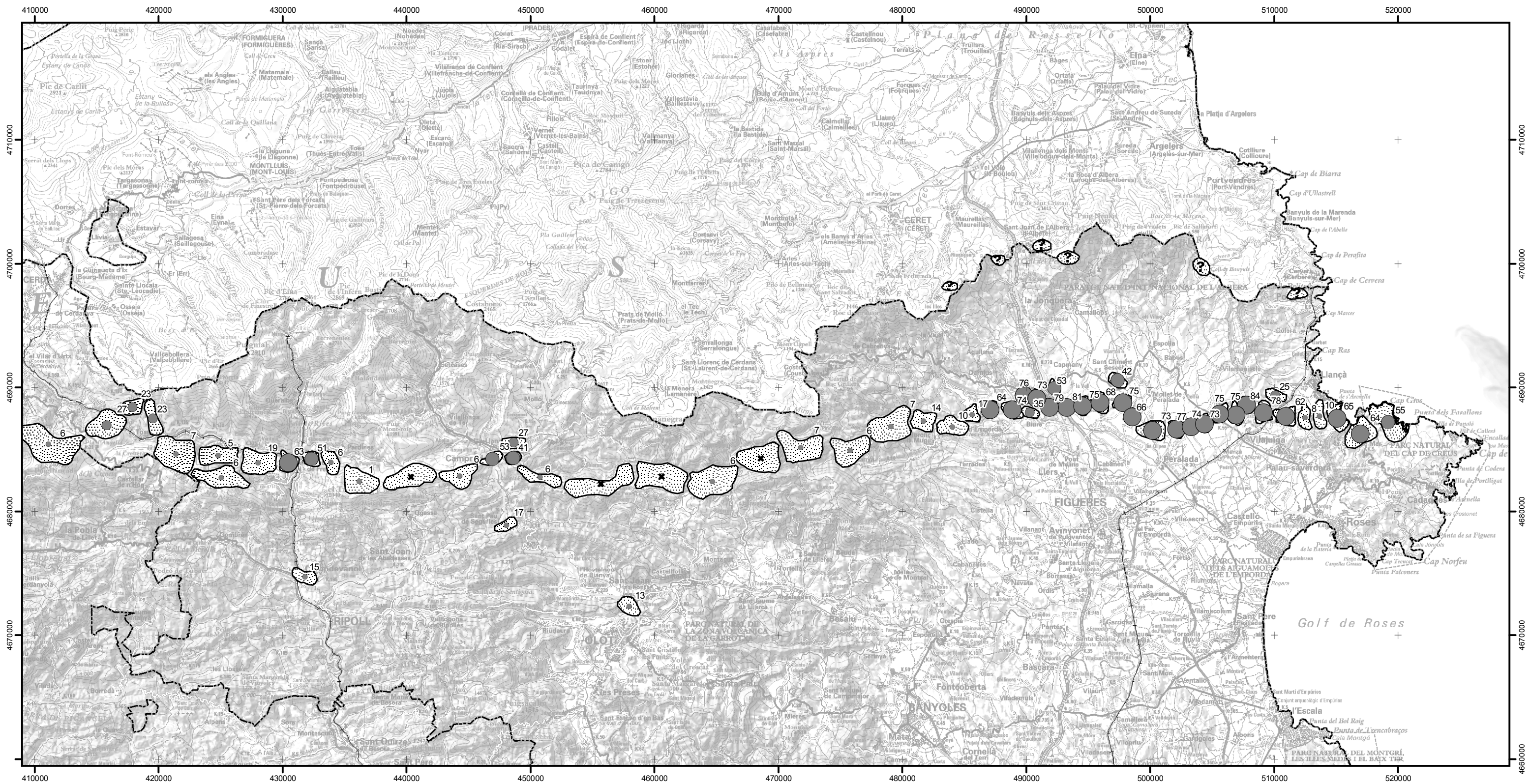
Scale: 1:300.000 (A3)














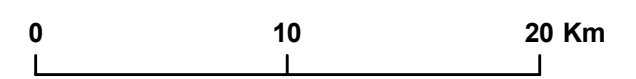




-  Resistance centers
-  Railway
- Fortifications by 10/01/1950**
-  None
-  1 - 20
-  21 - 40
-  41 - 60
-  > 60
-  No data
-  State and province borders

**MAP 2:  
FORTIFICATIONS COMPLETED  
(January 10 1950)**

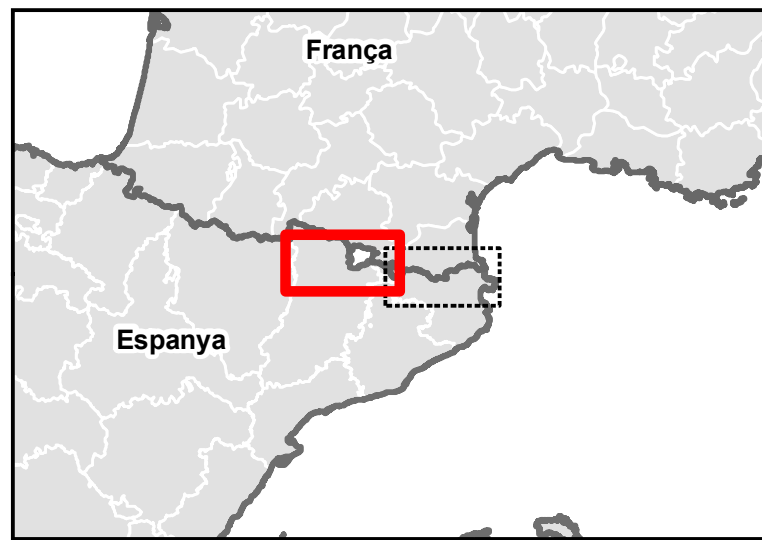
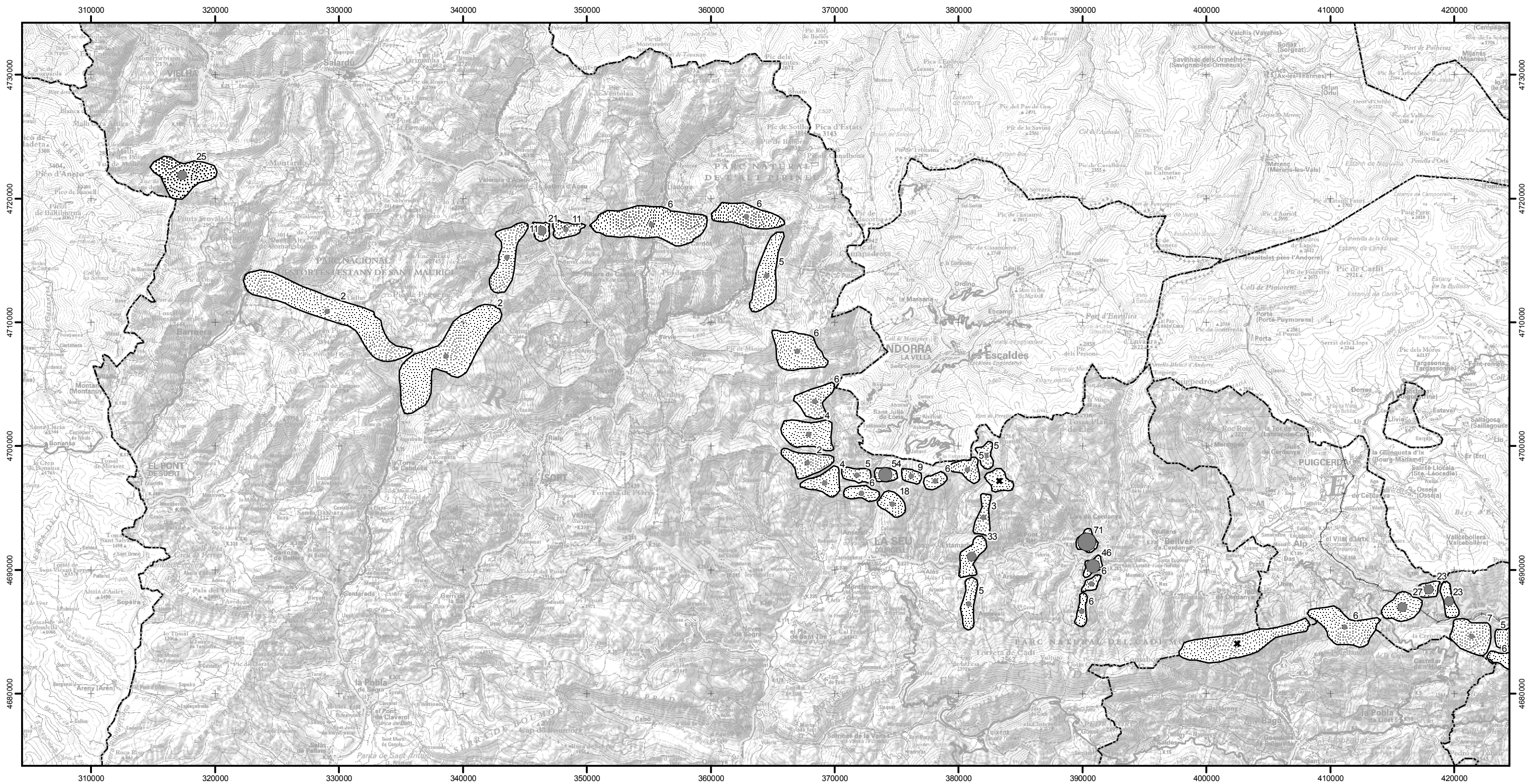
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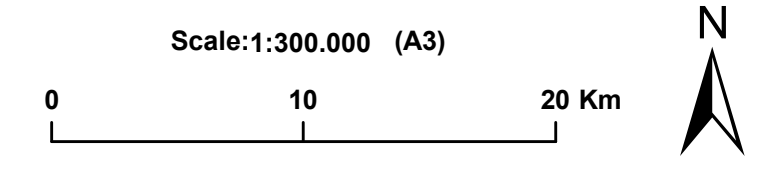






- Resistance centers
- Railway
- Fortifications by 10/01/1950**
- None
- 1 - 20
- 21 - 40
- 41 - 60
- > 60
- No data
- State and province borders

**MAP 2:  
FORTIFICATIONS COMPLETED  
(January 10 1950)**









## **ANNEX II**

### **Collection of advertisements (research article V)**



| Code  | First published | Title  | English translation   | Category                      | Published in   |
|-------|-----------------|--|---|-------------------------------|--|
| A-115 | 20/11/1940      | "Versalles, así fue posible"   | "This is how Versailles was made possible"                                    | Publishing news               | <i>ABC</i> , 20 de noviembre de 1940. p. 11  |
| A-103 | 13/12/1940      | "Los colorantes alemanes triunfaron en los mercados del mundo sobre los colores naturales" | "German colourants triumphed over natural colourants in world markets"        | German creations and products | <i>ABC</i> , 13 de diciembre de 1940, p. 12; <i>Arriba</i> , 29-1-1941, p. 5                                     |
| A-108 | 28/12/1940      | "La inmortal música alemana"   | "Immortal German music"   | German creations and products | <i>ABC de Sevilla</i> , 28 de diciembre de 1940, p. 2  |
| A-110 | 02/01/1941      | Editorial Orbis  | Orbis publishing house  | Publishing news               | <i>ABC</i> , 2 de enero de 1941, p. 8  |
| A-113 | 18/01/1941      | "Los motores alemanes iniciaron la motorización del mundo"                                 | "German engines started off the world's motorisation"                         | German creations and products | <i>Arriba</i> , p. 3; <i>ABC</i> de Sevilla, 29 de enero de 1941, p. 2   |
| A-102 | 06/02/1941      | "Al amparo de los medicamentos alemanes"   | "Under the shelter of German medicine"  | German creations and products | <i>ABC</i> , 6 de febrero de 1941, p. 8  |
| A-?   | 14/02/1941      | "La industria eléctrica alemana"   | "The German electrical industry"  | German creations and products | <i>Arriba</i> , p. 3; <i>ABC</i> , 12 de marzo de 1941, p. 10  |
| A-149 | 06/03/1941      | "Para saber la verdad de la guerra y sus causas". Ediciones España.                        | "To learn the truth about the war and its causes". España publishing house    | Publishing news               | <i>Nueva Economía Nacional</i> , 6 de marzo de 1941, p. 27   |
| A-119 | 15/03/1941      | "La industria óptica alemana"  | "German optical industry"   | German creations and products | <i>Arriba</i> , p. 3; <i>Heraldo de Zamora</i> , 24 de marzo de 1941, p. 3                                       |
| A-?   | 20/03/1941      | "Alemania país de origen de la medición eléctrica"   | "Germany, country of origin of electrical measuring"                          | German creations and products | <i>ABC</i> , 20 de marzo de 1941, p. 12  |
| A-161 | 24/04/1941      | "Alas germanas sobre Europa" (Librería General de Victoriano Suárez, Preciados 46, Madrid) | "German wings over Europe" (Victoriano Suárez Bookshop, Preciados 46, Madrid) | Publishing news               | <i>Nueva Economía Nacional</i> , 24 de abril de 1941, p. 28  |
| A-125 | 26/04/1941      | "La maquinaria textil alemana"   | "German textile machinery"  | German creations and products | <i>ABC</i> de Sevilla, 26 de abril de 1941, p. 2   |
| A-167 | 04/05/1941      | "La locomotora más rápida del mundo"   | "The world's fastest locomotive"  | The world's largest           | <i>Arriba</i> , p. 3; <i>ABC</i> , 7 de mayo de 1941, p. 6   |
| A-165 | 08/05/1941      | "¿Quién produce más en menor extensión?"   | "Who produces more in less space?"  | Our New Continental Europe    | <i>Nueva Economía Nacional</i> , 8 de mayo de 1941, p. 13  |
| A-162 | 08/05/1941      | "Al ataque de Inglaterra!" (Editorial Orbis)   | "Attack Engand!" (Orbis publishing house)                                     | Publishing news               | <i>Nueva Economía Nacional</i> , 8 de mayo de 1941, p. 29  |
| A-154 | 28/05/1941      | "¿Quién puede cubrir su consumo de cereales?"  | "Who can meet its own cereal consumption?"                                    | Our New Continental Europe    | <i>ABC</i> , 28 de mayo de 1941, p. 9; <i>Y</i> , nº42, jul. 1941, p. 2  |
| A-168 | 28/05/1941      | "La máquina de extracción mayor del mundo"   | "The world's largest extraction machine"                                      | The world's largest           | <i>Imperio, Diario de Zamora de Falange</i> , 28 de mayo de 1941, p. 5; <i>Arriba</i> , 30 de mayo de 1941, p. 2 |
| A-184 | 06/06/1941      | "El mayor buque diesel-eléctrico del mundo"  | "The world's largest electric-diesel ship"                                    | The world's largest           | <i>Arriba</i> , p. 3; <i>El Pensamiento Alavés</i> , 17 de junio de 1941, p. 2                                   |
| A-189 | jul-41          | "¿Qué ha entorpecido hasta ahora el aprovisionamiento propio?"                             | "What was hindering our own materials supply until now?"                      | Our New Continental Europe    | <i>Y</i> , nº42, jul. 1941, p. 45  |
| A-187 | 06/07/1941      | "La locomotora para el transporte de estériles mayor del mundo"                            | "The world's largest locomotive to transport mine tailings"                   | The world's largest           | <i>ABC</i> , 6 de julio de 1941, p. 10   |

|       |            |   |   |   |   |
|-------|------------|---|---|---|---|
| A-199 | 08/07/1941 | Rotaprint (multicopista)                                | Rotaprint (copy machine)                                | German companies and German chamber of commerce | ABC , 8 de julio de 1941, p. 12   |
| A-192 | 09/07/1941 | "¿Qué significa África para nosotros?"                  | "What does Africa mean to us?"                          | Our New Continental Europe                      | Y , nº43, ago. 1941, p. 2; ABC de Sevilla , 9 de julio de 1941, p. 2; ABC , 16 de octubre de 1941, p. 9                     |
| A-142 | 10/07/1941 | "Dos economías que engranan"                            | "Two interlocking economies"                            | German companies and German chamber of commerce | Nueva Economía Nacional , 10 de julio de 1941, p. 28  |
| A-211 | 18/07/1941 | "¿Quién fue el mejor colaborador de Ibero-América?"     | "Who collaborated best with Ibero-America?"             | Our New Continental Europe                      | Y , nº43, ago. 1941, p. 6; ABC , 18 de julio de 1941, p. 28; ABC de Sevilla, 9 de octubre de 1941, p. 2                     |
| A-214 | 19/07/1941 | Arri (máquina cinematográfica)                          | Arri (film projector)                                   | German companies and German chamber of commerce | ABC , 19 de julio de 1941, p. 9   |
| A-210 | 03/08/1941 | "La mayor prensa de extrusión del mundo"                | "The world's largest extrusion press"                   | The world's largest                             | El Pensamiento Alavés, 5 de agosto de 1941, p. 7; Arriba , 6 de agosto de 1941, p. 3; ABC , 3 de agosto de 1941, p. 9       |
| A-205 | 05/08/1941 | Castell (regla)   | Castell (ruler)   | German companies and German chamber of commerce | ABC , 5 de agosto de 1941, p. 12  |
| A-193 | 08/08/1941 | "¿Quién será independiente en el porvenir?"             | "Who will be independent in the future?"                | Our New Continental Europe                      | ABC de Sevilla , 8 de agosto de 1941, p. 2  |
| A-226 | 25/08/1941 | "El piñón entre las dos economías es la Feria de Viena" | "The gear between the two economies is the Vienna fair" | German companies and German chamber of commerce | El Pensamiento Alavés , 25 de agosto de 1941, p. 7  |
| A-231 | sep-41     | "La mayor máquina del mundo"                            | "The world's largest machine"                           | The world's largest                             | Vértice , nº48; ABC , 9 de septiembre de 1941, p. 14; Y , nº45, oct. 1941, p. 6   |
| A-215 | 07/09/1941 | Ringsdorfe (carbones eléctricos)                        | Ringsdorfe (carbon brushes)                             | German companies and German chamber of commerce | ABC , 8 de septiembre de 1941, p. 15  |
| A-232 | 09/09/1941 | "La mayor prensa del mundo"                             | "The world's largest press"                             | The world's largest                             | Imperio: Diario de Zamora de Falange , 9 de septiembre de 1941, p. 2; Arriba , 21 de septiembre de 1941, p. 4               |
| A-256 | 28/09/1941 | "¿Dónde está la verdad?"                                | "Where is the truth?" (book collection)                 | Publishing news                                 | ABC , 28 de septiembre de 1941, p. 14   |
| A-233 | 07/10/1941 | "La mayor instalación del mundo"                        | "The world's largest facility"                          | The world's largest                             | Arriba , 7 de octubre de 1941, p. 5; ABC , 7 de octubre de 1941, p. 11; El Pensamiento Alavés , 13 de octubre de 1941, p. 2 |
| A-244 | 08/10/1941 | Degussa (colores para cerámica)                         | Degussa (colours for ceramic)                           | German companies and German chamber of commerce | ABC , 8 de octubre de 1941, p. 12   |
| A-246 | 14/10/1941 | Secator (cortador autógeno)                             | Secator (autogenous cutter)                             | German companies and German chamber of commerce | ABC, 14 de octubre de 1941, p. 17   |
| A-235 | 05/11/1941 | "El mayor martinete del mundo"                          | "World's largest pile driver"                           | The world's largest                             | ABC , 5 de noviembre de 1941, p. 10; Arriba , 9 de noviembre de 1941, p. 6  |
| A-270 | 06/11/1941 | "El problema judío"                                     | "The Jewish problem"                                    | Publishing news                                 | ABC , 6 de noviembre de 1941, p. 12   |
| A-271 | 11/11/1941 | "El problema judío"                                     | "The Jewish problem"                                    | Publishing news                                 | ABC , 11 de noviembre de 1941, p. 13  |

|       |            |   |  |   |  |
|-------|------------|---|--|---|--|
| A-257 | 11/11/1941 | "El gigante y el enano"   | "The giant and the dwarf"  | Our New Continental Europe                      | ABC , 11 de noviembre de 1941, p. 24; Y , nº50, dic. 1941, p. 42   |
| A-272 | 15/11/1941 | "El problema judío"   | "The Jewish problem"   | Publishing news                                 | ABC , 15 de noviembre de 1941, p. 11   |
| A-262 | 18/11/1941 | Marklin (juguetes metálicos)  | Marking (metallic toys)  | German companies and German chamber of commerce | ABC , 18 de noviembre de 1941, p. 10   |
| A-268 | 02/12/1941 | Zyklon ("El mejor sistema para mezclar")  | Zyklon ("The best system to mix")  | German companies and German chamber of commerce | ABC , 2 de diciembre de 1941, p. 2   |
| A-259 | 03/12/1941 | Kronprinz (tubos de precisión)  | Kronprinz (precision tubes)  | German companies and German chamber of commerce | ABC, 3 de diciembre de 1941, p. 11   |
| A-284 | 05/12/1941 | "Rotas las cadenas... encontrarán las Naciones en la Nueva Europa Continental..." | "Once the chains are broken... nations will find in the New Continental Europe..." | Our New Continental Europe                      | ABC , 5 de diciembre de 1941, p. 16; <i>Heraldo de Zamora</i> , 12 de diciembre de 1941, p. 3; ABC , 19 de diciembre de 1941, p. 6; Y , nº48, enero 1942, p. 45  |
| A-252 | 10/12/1941 | Volman (tornos, fresadoras, máquinas de agujerear)                                | Volman (lathes, milling machines, piercing machines)                               | German companies and German chamber of commerce | ABC , 10 de diciembre de 1941, p. 12   |
| A-285 | 01/01/1942 | "Un solo corazón"   | "One single heart"   | Our New Continental Europe                      | ABC , 1 de enero de 1942, p. 46; <i>Imperio: Diario de Zamora...</i> , 8 de enero de 1942, p. 7; <i>Heraldo de Zamora</i> , 8 de enero de 1942, p. 3; <i>Sí, suplemento semanal de Arriba</i> , 8 de febrero de 1942, p. 2; Y , nº49, febrero 1942, p. 25. |
| A-304 | 03/02/1942 | "La primer dínamo inventada"  | "The first dynamo ever invented"   | Ideas and accomplishments                       | <i>Arriba</i> , 3 de febrero de 1942, p. 2; ABC , 3 de febrero de 1942, p. 20; Y , nº50, mar. 1942, p. 21  |
| A-368 | 21/02/1942 | "El primer motor diésel del mundo en condiciones para el trabajo"                 | "The world's first diesel engine in working conditions"                            | Ideas and accomplishments                       | <i>Mundo</i> , nº146, 21 de febrer de 1942; ABC , 7 de febrero de 1943, p. 2   |
| A-317 | 14/03/1942 | "El primer tranvía eléctrico del mundo"   | "The world's first electric tram"  | Ideas and accomplishments                       | <i>Arriba</i> , p. 5; Y , nº51, abr. 1942, p. 29   |
| A-334 | abr-42     | "Otto Lilienthal es considerado como el precursor de la aviación»"                | "Otto Lilienthal is regarded as the precursor of aviation"                         | Ideas and accomplishments                       | <i>Vértice</i> , nº55; ABC , 7 de mayo de 1942, p. 5; Y , nº53, jun. 1942, p. 39   |
| A-318 | 14/04/1942 | "El primer motor útil de carburación"   | "The first carburetted engine"   | Ideas and accomplishments                       | <i>Arriba</i> , p. 2; Y , nº52, may. 1942, p. 47   |
| A-336 | may-42     | "El primer automóvil con motor de petróleo"                                       | "The first automobile with a petroleum engine"                                     | Ideas and accomplishments                       | <i>Vértice</i> , nº56; ABC , 4 de junio de 1942, p. 5; ABC de Sevilla, 20 de junio de 1942, p. 2; Y , nº54, jul. 1942, p. 2  |
| A-338 | 19/07/1942 | "La primera locomotora eléctrica del mundo"                                       | "The world's first electric locomotive"  | Ideas and accomplishments                       | ABC , 19 de julio de 1942, p. 9; <i>Vértice</i> , nº58, agosto 1942; Y , nº55, ago. 1942, p. 2   |
| A-350 | 09/08/1942 | "Contabilidad Europea"  | "European Accounting"  | Our New Continental Europe                      | ABC , 9 de agosto de 1942, p. 5; Y , nº56, sept. 1942, p. 2.   |
| A-375 | 09/09/1942 | "Autarquía Europea"   | "European Autarky"   | Our New Continental Europe                      | ABC de Sevilla , 9 de septiembre de 1942, p. 8; ABC de Madrid , 22 de septiembre de 1942, p. 4; Y , nº57, octubre 1942, p. 2; <i>Nueva Economía Nacional</i> , 12 de noviembre de 1942, p. 27.   |
| A-378 | 04/10/1942 | La imprenta   | The printing press   | Ideas and accomplishments                       | ABC , 4 de octubre de 1942, p. 7; <i>Mundo</i> , 11 de octubre de 1942, nº127; Y , nº58, nov. 1942, p. 2   |

|       |            |   |  |                            |   |
|-------|------------|---|--|----------------------------|---|
| A-141 | 19/10/1942 | "La voz de Alemania para España"                  | "The voice of Germany for Spain"           | Publishing news            | <i>Hoja Oficial del Lunes</i> , 19 de Octubre de 1942, p. 4   |
| A-384 | dic-42     | "Vitalidad"                                       | "Vitality"                                 | Our New Continental Europe | <i>Y</i> , nº59, diciembre 1942, p. 2; <i>Ion</i> , nº18-19, enero-febrero 1943, contraportada  |
| A-390 | 13/12/1942 | "La primera locomotora eléctrica para minas"      | "The first electric locomotive for mines"  | Ideas and accomplishments  | <i>Mundo</i> , nº136; <i>Y</i> , nº60, ene. 1943, p. 2  |
| A-391 | 24/01/1943 | "Primavera"                                       | "Spring"                                   | Our New Continental Europe | <i>ABC</i> , 24 de enero de 1943, p. 20; <i>Y</i> , nº61, febrero 1943, p. 2.   |
| A-396 | 05/03/1943 | "El suelo de Europa alimenta a todos sus pueblos" | "The soil of Europe feeds all its peoples" | Europe can live by itself  | <i>Imperio: Diario de Zamora</i> ..., 5 de marzo de 1943, p. 3 y 25 de abril de 1943, p. 3; <i>ABC de Sevilla</i> , 14 de marzo de 1943, p. 4; <i>La Vanguardia Española</i> , 18 de marzo de 1943, p. 6; <i>El Mundo Deportivo</i> , 21 de marzo de 1943, p. 2; <i>ABC</i> , 21 de marzo de 1943, p. 36 y 1 de abril de 1943, p. 60; <i>Y</i> , nº43, abril 1943, p. 2 y |
| A-415 | 01/05/1943 | "Naranjas de España"                              | "Oranges of Spain"                         | Europe can live by itself  | <i>Ion</i> , nº22, mayo 1943, contraportada; <i>Imperio: Diario de Zamora</i> ..., 12 de mayo, p. 3; <i>Sí, suplemento semanal de Arriba</i> , 16 de mayo de 1943, p. 2; <i>ABC</i> , 1 de mayo de 1943, p. 6; <i>ABC de Sevilla</i> , 16 de mayo de 1943, p. 4; <i>Y</i> , nº65, junio de 1943, p. 2.  |
| A-420 | 01/06/1943 | "Olivares de España"                              | "Spanish olive groves"                     | Europe can live by itself  | <i>Ion</i> , nº23, junio 1943, contraportada; <i>Imperio: Diario de Zamora</i> ..., 13 de junio de 1943, p. 3; <i>ABC de Sevilla</i> , 20 de junio de 1943, p. 4; <i>ABC de Madrid</i> , 27 de junio de 1943, p. 10; <i>Y</i> , nº66, julio 1943, p. 2.   |
| A-412 | 01/07/1943 | "Minería española"                                | "Spanish mining"                           | Europe can live by itself  | <i>Ion</i> , nº24, julio 1943, contraportada; <i>ABC de Madrid</i> , 18 de julio de 1943, p. 32; <i>Y</i> , nº67, agosto 1943, p. 2.  |
| A-411 | 01/08/1943 | "El corcho español"                               | "Spanish cork"                             | Europe can live by itself  | <i>Ion</i> , nº25, agosto 1943, contraportada; <i>La Vanguardia Española</i> , 21 de agosto de 1943, p. 4; <i>ABC de Madrid</i> , 22 de agosto de 1943, p. 24 y <i>ABC de Sevilla</i> , 27 de agosto de 1943, p. 16.  |
| A-416 | 11/09/1943 | "Riqueza vinícola española"                       | "Spanish wine wealth"                      | Europe can live by itself  | <i>La Vanguardia Española</i> , 11 de septiembre de 1943, p. 4; <i>ABC</i> , 12 de septiembre de 1943, p. 8; <i>ABC de Sevilla</i> , 24 de septiembre de 1943, p. 16; <i>Y</i> , nº69, octubre 1943, p. 2.  |



**asi fué posible...**

*J. Agero*

hace en su presente trabajo un resumen de amplio alcance y basado en un profundo conocimiento de los nexos históricos de los antecedentes de la actual guerra, que califica de segunda crisis europea del siglo XX. El autor comienza haciendo una descripción de la política británica de cerco que fué la causa de la guerra mundial de 1914 y examina a continuación los errores y las injusticias cometidas en Versalles. En vivos colores pinta la situación angustiosa de Alemania en la postguerra, así como la obra reestructiva del nacionalsocialismo. El camino recorrido por el Führer desde que fué cabo hasta llegar a la incipiente revisión del Tratado de Versalles está trazado con breves y enérgicas palabras. Uno de los méritos de este libro estriba en que en forma concisa y clara relata, en sólo 150 páginas, la política europea desde 1914 hasta el momento de estallar la guerra en 1939

*Ptas. 6.-*

**RUBIÑOS-EDITOR**

Madrid - Alcalá, 104 - Tel. 52239



✠ SERVICIO DE PUBLICIDAD - FERNÁNFLOR, 8 - MADRID

“This is how Versailles was made possible”, code A-115, first published 20 November 1940.



## *Los colorantes alemanes triunfaron*

en los mercados del mundo sobre los colores naturales. Desde entonces se prefieren en todas partes los colorantes alemanes de alquitrán. Vender colores no es simplemente un negocio sino que viene a ser una especie de misión cultural, ya que significa compenetración con las más sutiles variaciones y manifestaciones de los gustos, de las tradiciones y del progreso de las naciones. El amor al colorido es dinamismo, tendencia positiva hacia las cosas. En lo sin color se manifiesta decadencia de los sentimientos. Los colorantes de Alemania con su indeleble esplendor unen a todos con la alegría que del color emana y que al color tiende.

## **LOS PRODUCTOS ALEMANES**

al restablecerse juntamente con la paz, la normalidad en las relaciones comerciales, volverán a encontrar la grata acogida que ya les están preparando sus amigos españoles, puesto que continúan

## **SIEMPRE EN VANGUARDIA**

SERVICIO DE PUBLICIDAD - FERNANFLOR, 6 - MADRID  
A 103

“German colourants triumphed over natural colourants in world markets”, code A-103, first published 13 December 1940.





## *La inmortal música alemana*

radiada diariamente desde las grandes emisoras del Imperio, tiende a través del eter un lazo de hermandad entre los pueblos.

Los aparatos receptores alemanes, incomparables en su perfección técnica, en la purísima reproducción del sonido y en la elegancia de sus formas, son fuente de goce para el aficionado a la buena música, centro y adorno de todo hogar amante de la cultura.

Los más grandes investigadores y hombres de Ciencia, los mejores ingenieros y mecánicos colaboran en la industria de radiodifusión cuyo amplio programa abarca desde la más potente emisora a la más pequeña de las válvulas incluyendo, dentro de su plan, la generalización de la televisión.

Gracias a los aparatos alemanes, pronto no existirán distancias ni para el ojo ni para el oído.

## **LOS PRODUCTOS ALEMANES**

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## **SIEMPRE EN VANGUARDIA**

SERVICIO DE PUBLICIDAD - FERNANFLOR, 6 - MADRID

"Immortal German music", code A-108, first published 28 December 1940.



### ***Alemania en sus instituciones sociales***

SESENTA PAGINAS de interesantísima información gráfica nos enseñan en una gran diversidad de fotos lo que significa para la vida de una nación la grandiosa obra de un verdadero socialismo. Un pueblo sano y vigoroso unido por la fe en los que dirigen su destino forma una nación invencible por su fuerza física y moral.

PTAS. 6.—

### ***ADOLF HITLER su vida y su obra***

ERICH BEIER - LINDHARDT nos traen en esta obra, aunque a grandes rasgos, la biografía de Adolf Hitler, su vida ejemplar, llena de patriotismo y de bondad, forjada en el yunque de su férrea voluntad, que supo conducir a Alemania a la vanguardia de una civilización nueva, basada en principios absolutamente humanos.

EN RUSTICA PTAS. 9.— EN TELA PTAS. 12.—

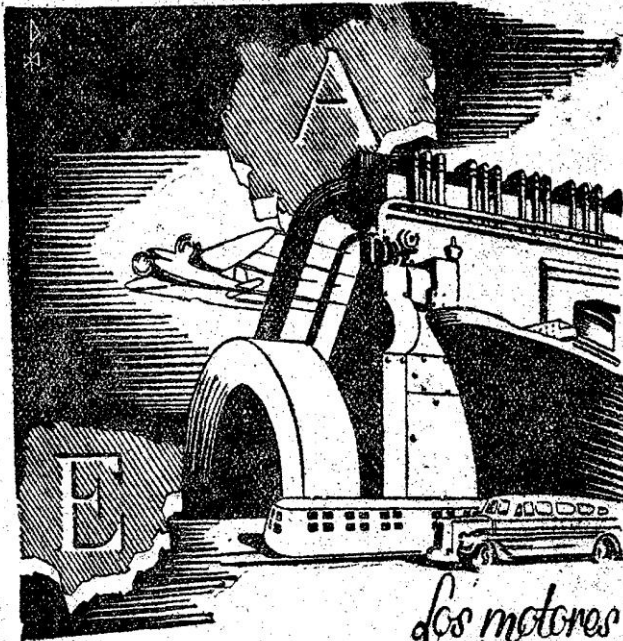
### ***El origen de la guerra de 1939***

EL BARON WERNER VON RHEINBABEN pone de relieve en esta interesante obra documentada por una copiosa recopilación de datos auténticos, cómo Alemania agotó todos los medios para salvar la paz y cómo las democracias llenas de odio provocaron la guerra.

PTAS. 3,50

SERVICIO DE PUBLICIDAD - FERNANFLOR, 6 - MADRID

“Orbis publishing house”, code A-110, first published 2 January 1941



*Los motores  
alemanes*

*iniciaron la motorización del mundo*

En 1864 se construyó en Alemania el primer motor útil de carburación y en 1876 el primero de 4 tiempos. Esta creación fué de trascendental importancia para los sistemas industriales y de la locomoción. Hoy día los motores dominan las vías de comunicación terrestres, aéreas y marítimas. Las más grandes empresas guerreras que conoce la historia se realizaron con motores alemanes, y el intenso cultivo de la tierra es inimaginable sin ellos. Su funcionamiento, ya sea a base de aceite pesado, gasolina, gas o madera, siempre cumple con las máximas exigencias tanto en tiempos de guerra como en tiempos de paz.

## **LOS PRODUCTOS ALEMANES**

al restablecerse juntamente con la paz, la normalidad en las relaciones comerciales, volverán a encontrar la grata acogida que ya les están preparando sus amigos españoles, puesto que continúan

**SIEMPRE EN VANGUARDIA**

SERVICIO DE PUBLICIDAD · FERNANFLOR, 6 · MADRID



la vida llegó a ser más digna de ser vivida. Epidemias y dolores ya no son como antaño tan temibles y tristes compañeros de nuestra existencia. Hoy se curan muchas enfermedades contra las que nada podía antes la ciencia médica. Haber contribuido a ello más que ninguna es el mérito que corresponde a la ciencia e industria química-farmacéutica alemanas. La escrupulosa producción siempre exacta de los medicamentos alemanes, que les valió la confianza absoluta del mundo entero, al cual se suministran aun en plena guerra, es más que un éxito científico-comercial, una ingente obra ética que favoreciéndolos une a los pueblos del mundo.

## **LOS PRODUCTOS ALEMANES**

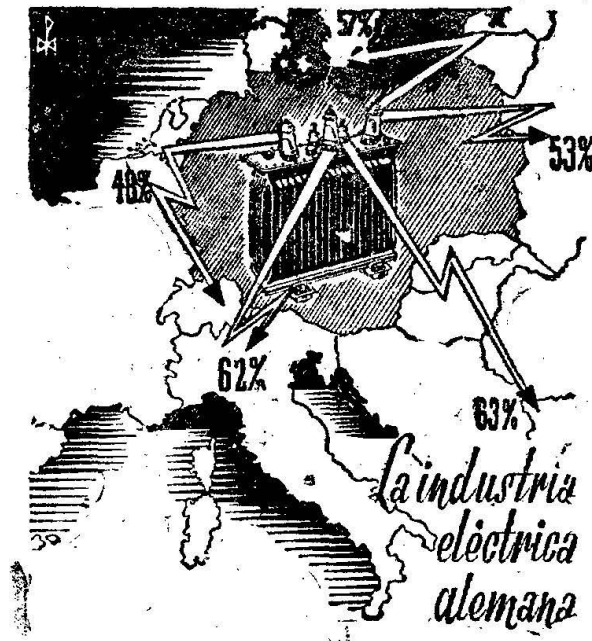
al restablecerse juntamente con la paz, la normalidad en las relaciones comerciales, volverán a encontrar la grata acogida que ya les están preparando sus amigos españoles, puesto que continúan

## **SIEMPRE EN VANGUARDIA**

SERVICIO DE PUBLICIDAD - FERNANFLOR, 6 - MADRID

A102

“Under the shelter of German medicine”, code A-102, first published 6 February 1941.



como mayor exportadora del mundo de material eléctrico no envía sino una cuarta parte de su cupo de exportación a los países de Ultramar. Ante todo provee a Europa habiendo cubierto ya antes de la guerra más de la mitad de las necesidades de los países vecinos. Suministra toda clase de maquinaria e instrumentos eléctricos para todos los fines industriales, del transporte, de la telecomunicación, de la sanidad, de la ciencia y, no en último término, del hogar. Aún en tiempos de guerra, la industria eléctrica alemana ha demostrado su capacidad de atender las necesidades de sus vecinos y amigos europeos.

## **LOS PRODUCTOS ALEMANES**

al restablecerse juntamente con la paz, la normalidad en las relaciones comerciales, volverán a encontrar la grata acogida que ya les están preparando sus amigos españoles, puesto que continúan

**SIEMPRE EN VANGUARDIA**

“The German electrical industry”, code A-?, first published 14 February 1941.



# Para saber la verdad de la guerra y sus causas



- 1 Francia Soldado de Inglaterra:**  
 Por el Dr. F. REICHERT  
 Estudio demográfico comparativo que demuestra como Inglaterra ha utilizado a Francia como carne de cañón contra Alemania, para mantener su hegemonía económicoimperialista. Pts. 1,—
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- 3 Decadencia y Hundimiento del Imperio Británico**  
 Por ROBERT BRIFFAULT  
 (Prólogo, extracto y notas de ALAN SINCLAIR SIDGWICK). El nombre del prologuista basta para advertir el interés de esta obra, de resonancia mundial, tanto porque son ingleses los que enjuician el estado social, moral y económico del imperio británico, como por el cúmulo de verdades que encierra. Pts. 2,50
- 4 Armisticio 1918-1940**  
 Exámen comparativo de las cláusulas de ambos convenios, por el que se demuestra el generoso trato que ha dado la Alemania vencedora a Francia. Pts. 1,50
- 5 Del Bidasoa al Danubio bajo el pabellón del Reich:**  
 Por LUIS DE GALIN SUGA  
 Impresiones de su viaje a Berlín a través de la Francia ocupada por el ejército alemán, en las que se señalan las reacciones sentimentales del país conquistado ante la generosa conducta de las fuerzas germanas. Pts. 6,—
- 6 La Verdad sobre la guerra actual**  
 Por THE BRITISH PEOPLE'S PARTY (PROXIMA A PUBLICARSE)  
 Nada tan impresionante como esta demostración documentada aportada por el Partido Popular Británico, de la responsabilidad de Inglaterra como única causante del actual conflicto bélico, que pudo evitarse, según se comprueba por los mismos documentos oficiales que sirven de base al enjuiciamiento de dicho Partido. Pts. 5,—

Importe total de las 6 obras . . . . . Ptas. 17,—  
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"To learn the truth about the war and its causes". España publishing house, code A-149, first published 6 March 1941.

**La industria óptica alemana**

con la afamada casa Zeiss en primer término coopera mediante la creación de insuperables instrumentos de precisión de un modo decisivo en la labor investigadora y en los descubrimientos de nuestros hombres de ciencia, que sin la ayuda de estos perfectísimos instrumentos ópticos no podrían revelar los misterios del microcosmo y del macrocosmo. La excelente instalación de laboratorios y talleres unida a la proverbial exactitud alemana característica, en los obreros especializados facilitan la creación de instrumentos que responden plenamente a toda exigencia que la investigación científica requiere. Estos instrumentos así como las gafas, lentes y sobre todo las potentes fotocámaras alemanas conquistaron fama mundial.

**LOS PRODUCTOS ALEMANES**

al restablecerse juntamente con la paz, la normalidad en las relaciones comerciales, volverán a encontrar la grata acogida que ya les están preparando sus amigos españoles, puesto que continúan

**SIEMPRE EN VANGUARDIA**

“German optical industry”, code A-119, first published 15 March 1941.

*Alemania  
país de origen*



*de la medición  
eléctrica*

Todo el sistema internacional de centímetros a gramos a segundos, debe su existencia a hombres de ciencia alemanes. Así se comprende que las numerosas fábricas alemanas de instrumentos eléctricos de precisión mantengan desde hace más de un siglo una hegemonía absoluta en su especialidad gracias a las generaciones de técnicos especializados formados por las experiencias progresivamente renovadas y aumentadas. Porque es evidente que el valor de estos instrumentos está integrado en un 99%, por el resumen de las experiencias adquiridas en su creación y perfeccionamiento y sólo en un 1%, por el material invertido en ellos. Se emplean estos instrumentos en la técnica del calor para medir las más altas temperaturas, para el análisis de gases de combustión, para medir la presión de laminajes, para registrar vibraciones, en la navegación, en la mecánica, e incluso en la agricultura. El haber podido restringir en muchos países en más de un 35% el consumo de carbón por unidad de energía generada se debe a los instrumentos alemanes de medición eléctrica que son por lo tanto indispensables para el progreso y la economía de todos los países.

## **LOS PRODUCTOS ALEMANES**

al restablecerse juntamente con la paz, la normalidad en las relaciones comerciales, volverán a encontrar la grata acogida que ya les están preparando sus amigos españoles, puesto que continúan

**SIEMPRE EN VANGUARDIA**

“Germany, country of origin of electrical measuring”, code A-?, first published 20 March 1941.



A 161

**Ha aparecido el interesantísimo libro de Spectator**

El conocido autor, uno de los más populares cronistas durante la guerra de liberación, describe con independencia de juicio y exacto criterio de la realidad los hechos dramáticos de los tiempos bélicos que pasamos. Este nuevo libro se ofrece a nuestra ávida curiosidad de españoles, de espectadores que siguen con verdadera emoción las horas y los rumbos trágicos del viejo mundo, como una realidad visible y tangible. Más de la mitad del breve tomo, que se lee de un tirón, constituye precioso álbum gráfico con las figuras, aspectos, modelos, objetivos, aparatos de aviación y resultados de la tremenda guerra, impuesta por las alas.

**PRECIO Ptas. 5.-**

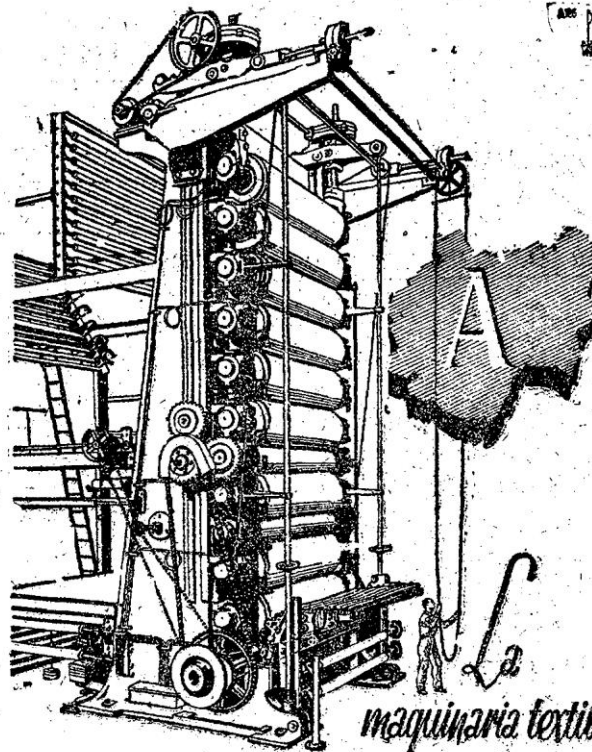
**ALAS GERMANAS SOBRE EUROPA**

**LIBRERIA GENERAL DE VICTORIANO SUAREZ, PRECIADOS, 46, MADRID**

De venta en la "LA CAMPAÑA DE LOS 18 DIAS Y LA RENDICION DEL misma librería: EJERCITO BELGA" por Saint-Yves, Folleto gráfico, Ptas. 2.-



“German wings over Europe” (Victoriano Suárez Bookshop, Preciados 46, Madrid), code A-161, first published 24 April 1941.



es preferida desde hace mucho tiempo en el mundo entero porque reúne en su construcción exacta el resumen de una larga experiencia con las ideas más modernas del progreso. Especialmente en la construcción de máquinas destinadas a la elaboración de los modernos tejidos a base de fibra artificial y material mixto se manifiesta la superioridad de la fabricación alemana.

Incluso durante la guerra es atendida la exportación de maquinaria textil alemana en su forma acostumbrada. Técnicos y comerciantes están como siempre a la disposición de su antigua y nueva clientela para aconsejarla en la elección de las máquinas más indicadas en cada caso y para tenerla al corriente sobre los últimos adelantos introducidos en la construcción moderna.

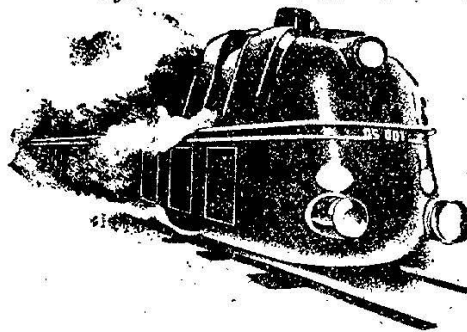
## **LOS PRODUCTOS ALEMANES**

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## **SIEMPRE EN VANGUARDIA**

“German textile machinery”, code A-125, first published 26 April 1941.

*La locomotora más rápida  
del mundo*



es este gigante aerodinámico construido en Alemania por BORSIG. Actualmente en servicio para el recorrido de Berlín a Hamburgo desarrolla una velocidad de más de 200 kms. por hora.



*Insuperables siguen siendo las  
obras cumbre de la técnica alemana*

**¿ QUIEN PRODUCE MAS EN MENOR EXTENSION ?**

En el espacio vital más reducido del mundo, que apenas alcanza 5 millones de kmq. viven estrechamente unos 400 millones de europeos, o sea alrededor

| Kilómetros cuadrados             | Habitantes por kilómetro cuadrado |
|----------------------------------|-----------------------------------|
| EUROPA CONTINENTAL<br>5 MILLONES |                                   |
| ASIA y AUSTRALIA<br>50 MILLONES  |                                   |
| AMERICA<br>43 MILLONES           |                                   |
| AFRICA<br>10 MILLONES            |                                   |

de 80 personas por kmq. mientras que a otros espacios, 6 y hasta 10 veces mayores, corresponden solamente 24, es más, sólo 6 ó incluso 5 por kmq.

1. de la superficie terrestre



2. EUROPA CONTINENTAL SIN INGLATERRA Y URSS.

Pero este espacio, mínimo en cuanto a su extensión superficial, constituye el mayor espacio económico del mundo, puesto que de todos los existentes, es el que obtiene mayor producción y el de más intenso comercio exterior.

3. de participación en el tráfico mundial



**NUESTRA NUEVA EUROPA CONTINENTAL**



A.165

“Who produces more in less space?”, code A-165, first published 8 May 1941.



**El ataque de Inglaterra!**

**POR EL COMANDANTE DE AVIACION  
H. ADLER.**

El lenguaje militar sobrio y lacónico de los partes de guerra no facilita sino a las personas competentes una idea clara de la moderna guerra aérea. Lo que este significa hoy en día, lo relatan detalladamente en este libro los mismos héroes del aire. Los vuelos de reconocimiento, combates aéreos, ataques contra convoyes, etc., se describen de un modo singularmente sugestivo que hace de este libro una obra importantísima de sumo interés para todos por su gran actualidad.

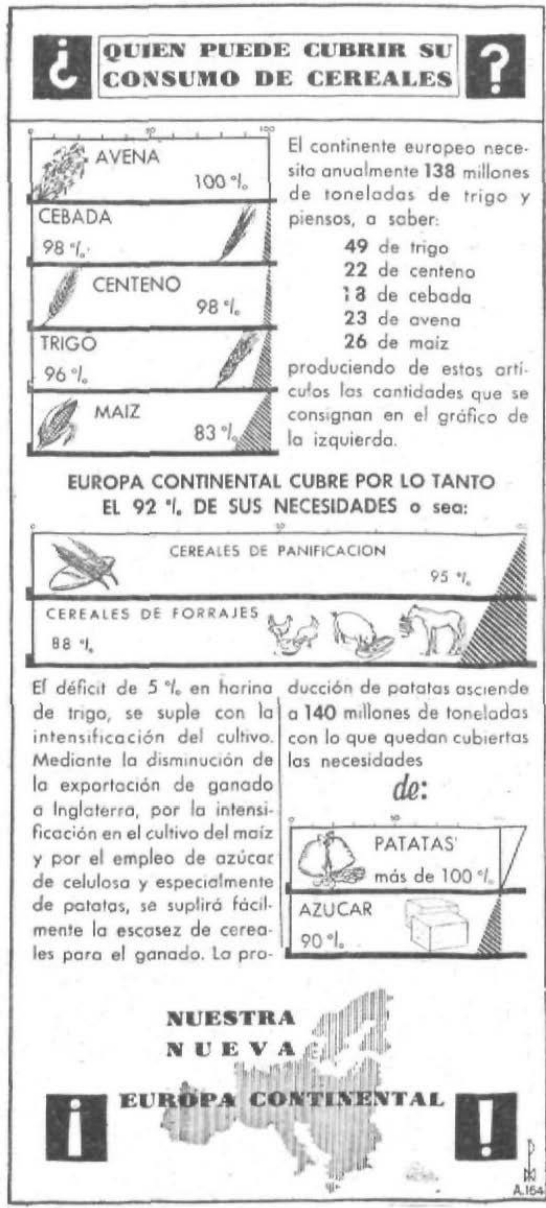
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**EL ORIGEN DE LA GUERRA DE 1939** » 3,50

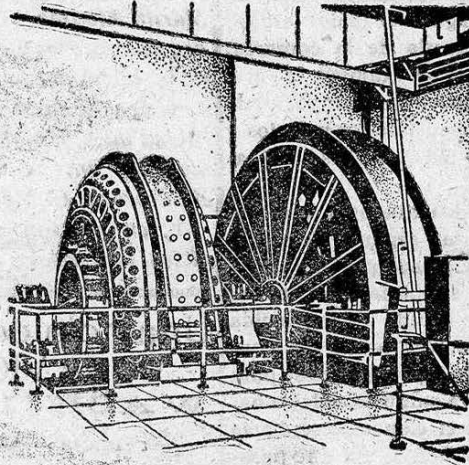
A.162

“Attack Engand!” (Orbis publishing house), code A-162, first published 8 May 1941.



“Who can meet its own cereal consumption?”, code A-154, first published 28 May 1941

## *La máquina de extracción mayor del mundo*



se halla en Alemania occidental, construida por  
la AEG y DEMAG. 7,5 m. de diámetro  
tiene su volante; 5 m. el motor de una potencia  
máxima de 10.000 HP.



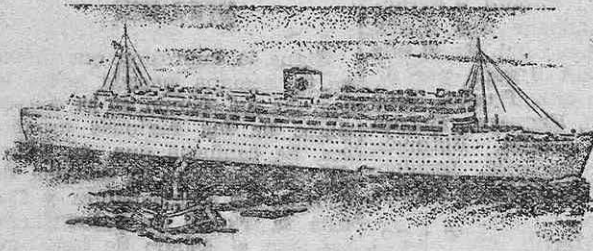
*El continente de posibilidades ilimitadas es  
hoy día **EUROPA**, para cumplir su nueva mis-  
sión realiza las obras más trascendentales*

*Insuperables siguen siendo las  
obras cumbre de la técnica alemana*

A.168

“The world’s largest extraction machine”, code A-168, first published 28 May 1941.

## *El mayor buque Diesel-eléctrico del mundo*



es el célebre buque almirante "ROBERT LEY" de la organización "FUERZA POR ALEGRIA" de 27.300 toneladas. Sus potentes motores Diesel hacen funcionar 6 dinamos de un rendimiento de 1.500 Kilowatios-Amperios que son la central de energía de los 2 motores eléctricos de popa.



*El continente de posibilidades ilimitadas es hoy día **EUROPA**, para cumplir su nueva misión realiza las obras más trascendentales*

*Insuperables siguen siendo las obras cumbre de la técnica alemana*

A.184

"The world's largest electric-diesel ship", code A-184, first published 6 June 1941.



**¿ QUE HA ENTORPECIDO HASTA AHORA EL APROVISIONAMIENTO PROPIO ?**

**IMPORTACION A EUROPA**



**EXPORTACION DE EUROPA**



**Las Islas Británicas**, fuera de nuestro continente, que no han necesitado preocuparse por una producción propia, por disponer de las riquezas de sus Dominios y Colonias y de las que podía importar del continente, han impedido a Europa hasta ahora, *bastarse a si misma*, lo que constituye una realidad. La vieja Europa, incluida la Gran Bretaña, importaba hasta ahora por valor de 10.000 millones de RM en víveres, mientras que exportaba solamente por valor de 5.000 millones. Este déficit en sus dos terceras partes se debía a Inglaterra que solamente produce una cuarta parte de su consumo en productos alimenticios.

**La Europa continental** en cambio exportaba víveres por valor de 4.000 millones de RM contra 5.000 millones que importaba. Esta diferencia de mil millones recaía en parte en materias primas grasas y principalmente en artículos de placer. La falta de grasas la *suple la Europa continental* por sí misma; a los artículos de placer ha podido renunciar desde hace tiempo. El perjuicio sólo lo sufren los países de Ultramar. A base del nuevo orden económico queda asegurado por largo tiempo el suficiente abastecimiento de

**NUESTRA NUEVA EUROPA CONTINENTAL**



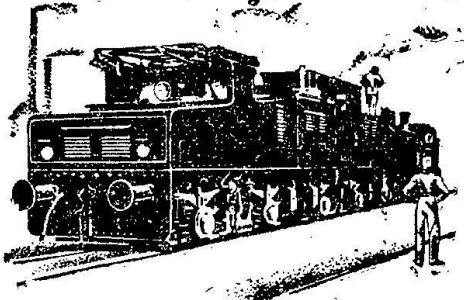
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**i**

A.189

“What was hindering our own materials supply until now?”, code A-189, first published July 1941.

*La locomotora para transportes  
de estéril, mayor del mundo*



fue construida por SIEMENS para el servicio en las minas alemanas de carbón fósil. Tiene 6 motores de tracción, que con corriente continua de 1200 voltios dan un rendimiento de 1560 kilowatios. (Esta locomotora es capaz de transportar en una sola carga la cantidad de tierra equivalente al volumen de una casa mediana).



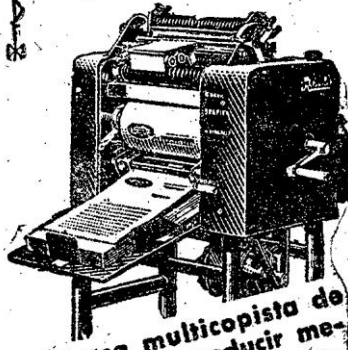
*Es continente de posibilidades ilimitadas es hoy día EUROPA para cumplir su nueva misión realiza las obras más trascendentales*

*Insuperables siguen siendo las obras cumbre de la técnica alemana*

A-187

“The world’s largest locomotive to transport mine tailings“, code A-187, first published 6 July 1941.

# Rotaprint



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LA HISPANENSE, S. A.  
P. Calvo Sotelo, 21 - MADRID

A. 199

Rotaprint (copy machine), code A-199, first published 8 July 1941.



**QUE SIGNIFICA AFRICA  
PARA NOSOTROS**



Tan pronto como se llegue a una colaboración metódica de las naciones interesadas en Africa, en virtud del nuevo orden que está madurándose en "el viejo mundo", y que ha de incluir el espacio complementario de la Europa continental, se conseguirá un aumento de sus energías productoras que sobrepasa ampliamente nuestras necesidades.



Hay, misma, en Africa puede cubrir p a este de la importación europea de



A esto hay que añadir la riqueza del suelo africano en hierro, plomo, estaño, zinc y bauxita. Y la participación de Africa en la producción mundial de cobalto = a un 85 %, de cromo = a un 33 %, de cobre = a un 16,5 % (por no hablar de la de oro que alcanza un 40 %). Finalmente su riqueza en maderas, resinas, fibras, curtidos, cueros, especias, etc. Desde esta perspectiva empero, el resto del mundo deberá tener en cuenta lo siguiente:

- 21,4 % de la población del globo
- 25,4 % de la superficie terrestre
- 40,8 % del volumen del comercio mundial

comprende este nuevo gran espacio económico que a pesar de todos los obstáculos nacerá y será dirigido por

**NUESTRA  
NUEVA**

**EUROPA CONTINENTAL**



“What does Africa mean to us?”, code A-192, first published 9 July 1941.



A.142

*Dos economías que engranan*

Si las economías de dos países se completan mutuamente de una forma tan ideal como las de España y Alemania, pueden compararse en realidad con dos ruedas dentadas en el engranaje de un mecanismo perfecto, cuya fuerza motriz es el potente motor de la economía europea.

Los numerosos productos agrícolas del fértil suelo de España y la riqueza de sus mares y de su subsuelo son la base de la exportación española que compensa la importación de maquinaria y del sinfín de productos de la perfecta industria alemana. Entre las muchas organizaciones que ayudan en su tarea a las autoridades que determinan el ritmo del engranaje económico, figuran las Cámaras de Comercio, que, conscientes de su misión, están siempre dispuestas a facilitar informes y consejos al comercio en general y especialmente a sus socios.

LA CAMARA DE COMERCIO ALEMANA PARA ESPAÑA que desde su fundación en 1923 en Barcelona, viene prestando valiosos servicios, ha trasladado su sede a Madrid para mejorar aún el desarrollo de sus funciones, dejando una Delegación en Barcelona.

**Las dos oficinas**  
**CAMARA DE COMERCIO ALEMANA PARA ESPAÑA**

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con su perfecta organización

**FOMENTARAN EL INTERCAMBIO ECONOMICO ENTRE ESPAÑA Y ALEMANIA**

“Two interlocking economies”, code A-142, first published 10 July 1941.



“Who collaborated best with Ibero-America?”, code A-211, first published 18 July 1941.

Los P.K.'s



del victorioso ejército alemán  
usan toma-vistas  
**ARRIFLEX**  
el aparato insuperable  
construido por  
**ARNOLD Y RICHTER, MUNICH**

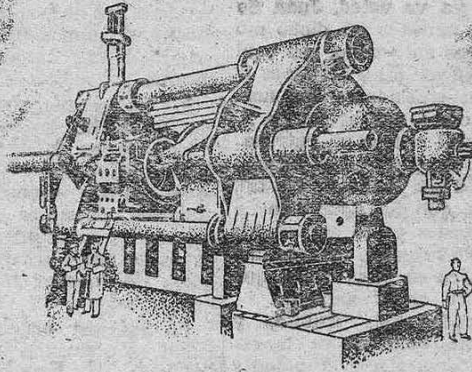


La marca cinematográfica de fama mundial

**En España: Rodolfo Wassmann**  
Lope de Vega, 47, Madrid

Arri (film projector), code A-214, first published 19 July 1941.

*La mayor prensa de  
extrusión del mundo*



es la gigantesca prensa hidráulica de la  
EUMUCO A. G. de Leverkusen, de 5.000 t.  
de presión, para tubos y barras, la cual contribuyó  
considerablemente al desarrollo de la industria  
de metal ligero y de la construcción de aviones.



*Insuperables siguen siendo las  
obras cumbre de la técnica alemana*

A.210

“The world’s largest extrusion press”, code A-210, first published 3 August 1941.





**CASTELL**  
A. W. F. A. 205 R

*la regla  
de cálculo  
perfecta.*

Hoy escasea pero volverá a medida de que sea factible la importación.

representante general  
**EMILIO MENZEL**  
Calle de Cartagena, 50 - MADRID

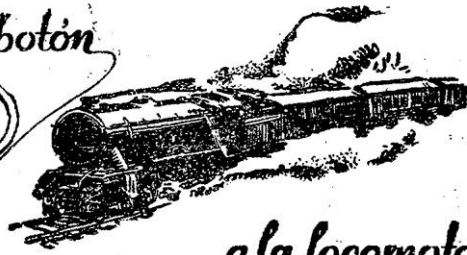
Castell (ruler), code A-205, first published 5 August 1941.



**QUIÉN SERÁ INDEPENDIENTE EN EL PORVENIR**



*Del botón*



*a la locomotora*

El querer fabricarlo todo por sí mismo en cada país, desde los botones para pantalón hasta las locomotoras, creando al objeto industrias antieconómicas de elevados costes que no tienen ninguna razón de existir y que únicamente pueden ser mantenidas en pie merced a subvenciones, prohibiciones de importación o aumento de tarifas aduaneras esto es una locura económica (dijo el Ministro del Reich Dr Funk en la Feria de Viena de 1940)

Los botones para pantalón y las locomotoras se producirán allí donde puedan fabricarse más económicamente. Las explotaciones cultivadas con artificio rebajan el nivel de vida de los respectivos pueblos y tienen que desaparecer.

No así las industrias "arraigadas", en sentido nuevo. Ganará terreno una sana división del trabajo entre los países, que elevará el nivel de vida de todos dentro de la nueva y absoluta independencia de

**NUESTRA  
NUEVA  
EUROPA CONTINENTAL**



"Who will be independent in the future?", code A-193, first published 8 August 1941.

A.226

*El piñón,  
entre las dos  
economías,  
es la  
Feria de Viena*

Que tendrá lugar del 21 al 28 de Septiembre de 1941 como tradicional feria de otoño. Este certamen de rango internacional facilita valiosas orientaciones sobre los menesteres y posibilidades de los distintos mercados de la nueva Europa continental.

**Para consultas se ofrecen:**

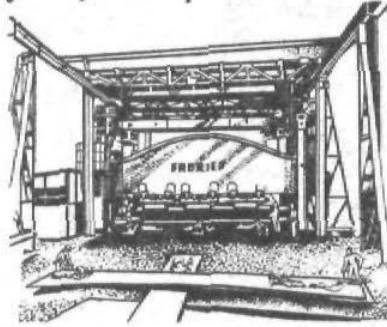
EL SR. JEFE DE LA SECCIÓN DE EXPANSIÓN COMERCIAL DEL MINISTERIO DE INDUSTRIA Y COMERCIO, MADRID  
TELÉF. 50189 - TELEGR. SERCOM PARA EXPANSIÓN

LA CAMARA DE COMERCIO ALEMANA PARA ESPAÑA  
Oficina central: Madrid, Olózaga, 5      Delegación: Barña. R. Universidad, 10  
Teléf. 51760 - Telegr. DEHAKA      Teléf. 14675 - Telegr. DEHAKA

EL DELEGADO DE LA FERIA DE VIENA:  
D. JULIO DOBRICKY, SANTA ENGRACIA, 38, MADRID  
TELÉFONO 45444 - TELEGR. DOBRICKY MADRID

“The gear between the two economies is the Vienna fair”, code A-226, first published 25 August 1941.

## *La mayor máquina del mundo*



para curvar planchas de hierro para construcciones navales, fue construida por la casa FROBERG / RHEIDT. Este coloso pesa 720.000 Kg. y con una presión del rodillo de 5.000 toneladas, es capaz de curvar en frío, completamente, planchas de 12.500 mm. de ancho y de 50 mm. de espesor.



*El continente de posibilidades ilimitadas es hoy día **EUROPA**, para cumplir su nueva misión realiza las obras más trascendentales*

*Insuperables siguen siendo las obras cumbre de la técnica alemana*

A. 231

“The world’s largest machine”, code A-231, first published September 1941.

**CARBONES  
ELECTRICOS  
RINGSDORFE**

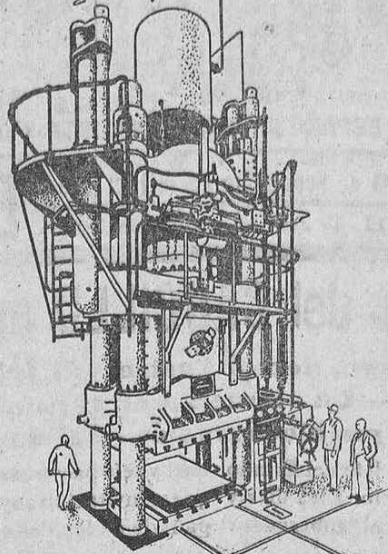
para Cine, fotogra-  
bado, faros, electro-  
medicina, fotografía, etc.,  
continúan como todos  
los productos alemanes  
siempre en vanguardia.

Representante para  
**ESPAÑA:**  
**RÓDOLFO WASSMANN**  
**MADRID**  
Lope de Vega, 47  
Teléf. 19679

HO  
A215

Ringsdorfe (carbon brushes), code A-215, first published 7 September 1941.

## *La mayor prensa del mundo*



para la fabricación de resina artificial, de una presión total de 5.000.000 de kilos, fué construída por la casa BECKER & van HÜLLEN, de Krefeld, para satisfacer la necesidad de la fabricación de piezas muy grandes de resina artificial.



*El continente de posibilidades ilimitadas es hoy día **EUROPA**, para cumplir su nueva misión realiza las obras más trascendentales.*

*Insuperables siguen siendo las obras cumbre de la técnica alemana*

A. 232

“The world’s largest press”, code A-232, first published 9 September 1941.

A. 256

**¡ Un** EXITO DE VENTA  
**¡ Do** y NOMBRES:  
JOSE J. ESTRADA  
Y JUAN AGERO

Con las palabras de  
**HITLER, CHURCHILL Y ROOSEVELT**  
ha sido escrito

**¿ Dónde está**  
**la verdad ?**

Pedidos a: EDICIONES ESPAÑA  
DUQUE DE SEXTO, 17 - MADRID

Este libro que consta de cuatrocientas páginas y una  
portada a dos colores se vende al precio de 10 Ptas.

“Where is the truth?” (book collection), code A-256, first published 28 September 1941.

## *La mayor instalación del mundo*



de destilación de hulla, para la fabricación de gasolina sintética, de más de 1.500.000.000 de m<sup>3</sup> teóricos de gas sintético de capacidad, fue construida por la casa KOPPERS de Essen (Rensania), según sistema de Fischer-Tropsch. Esta instalación consta de siete instalaciones de las que solo cinco se ven en la figura.



*Insuperables siguen siendo las  
obras cumbre de la técnica alemana*

A-233

“The world’s largest facility”, code A-233, first published 7 October 1941.



A.244

**COLORES**



**PARA**

**CERAMICA**

**Y LUSTRES PARA DECORAR  
LOZA, PORCELANA Y VIDRIO**



**"DEGUSSA"**

**DEUTSCHE GOLD & SILBER-  
SCHEIDEANSTALT vorm.  
ROESSLER FRANKFURT/M.**

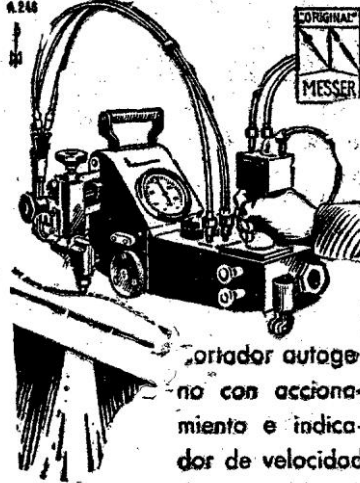
Representantes:

**EUGENIO LAMPARTER**  
Santa Ana, 9 - SEVILLA

Degussa (colours for ceramic), code A-244, first published 8 October 1941.

# SECATOR

A.246



Portador autogé-  
no con acciona-  
miento e indica-  
dor de velocidad  
de corte MESSER

Representante exclusivo:

**MARTIN MARTEN**  
BARCELONA - SEVILLA

Secator (autogenous cutter), code A-246, 14 October 1941.

*El mayor martinete del mundo*



fué utilizado por GRUEN & BILFINGER, A. G. de Mannheim en la construcción del puente de Lidingsö cerca de Estocolmo sobre un estrecho de 750 m. de ancho. El martinete colocó en el fondo del mar postes de cemento armado de 40 m. de largo y 1 m. de diámetro.



*El continente de posibilidades ilimitadas es hoy día EUROPA, para cumplir su nuevo misión realiza las obras más trascendentales.*

*Insuperables siguen siendo las obras cumbre de la técnica alemana*

A. 235

“World’s largest pile driver”, code A-235, 5 November 1941.

A270

**El PROBLEMA JUDIO**

*Un libro que despeja la incógnita que el pueblo de ISRAEL ha planteado al mundo.*

Por el gran intelectual mejicano

**ALFONSO DE CASTRO**  
con un prólogo de **RUBÉN SALAZAR MALLÉN**

Un tomo de 304 páginas, al precio de 12 pesetas (en provincias, 13 ptas.)

**EDITORIAL RUBIÑOS**  
ALCALÁ, 104 - MADRID

A-271

**El PROBLEMA JUDIO**

UN LIBRO DE PALPITANTE ACTUALIDAD  
Por el gran intelectual mejicano

**ALFONSO DE CASTRO**  
con un prólogo de **RUBÉN SALAZAR MALLÉN**

Un tomo de 304 páginas, al precio de 12 pesetas (en provincias, 13 ptas.)

**EDITORIAL RUBIÑOS**  
ALCALÁ, 104 - MADRID

A-272

*Una incógnita que se despeja en*

**El PROBLEMA JUDIO**

UN LIBRO DE

**ALFONSO DE CASTRO**  
con un prólogo de **RUBÉN SALAZAR MALLÉN**

Un tomo de 304 páginas, al precio de 12 pesetas (en provincias, 13 ptas.)

**EDITORIAL RUBIÑOS**  
ALCALÁ, 104 - MADRID

“The Jewish Problem”, codes A-270, A-271 and A-272. First published 6 November 1941.



*El gigante  
y el enano*

En plena guerra ha salido de los talleres de la fábrica mayor de Europa de locomotoras, de Henschel e hijo, Kassel (Alemania), la locomotora número 25.000, para trenes expresos, que alcanza una velocidad de 175 kms. por hora.

A pesar de la guerra se trabaja activamente para la paz en

**i** NUESTRA NUEVA  **!**  
EUROPA CONTINENTAL

A. 257

“The giant and the dwarf”, code A-257, 11 November 1941.

A-262



**MÄRKLIN**

Toda clase de  
JUGUETES METÁLICOS FINOS  
GEBR MÄRKLIN & CIA.  
GÖPPINGEN (Württemberg) ALEMANIA

Representante:  
HNO DE GUILLERMO LEOPOLD  
AVENIDA JOSÉ ANTONIO, 642  
BARCELONA

Marklin (metallic toys), code A-262, first published 18 November 1941.



*El mejor sistema  
para mezclar*

**"ZYKLON"**

Para instalaciones completas, fábricas de productos químicos en general, metalúrgicas, altos hornos, etc.  
EBERHARD HOESCH & SÖHNE, DÜREN - RI (Alemania)

REPRESENTANTE PARA ESPAÑA:  
DISTRIBUIDORA "DIAPAM"  
E. A. BRANDT  
AVDA. JOSÉ ANTONIO, 45 - MADRID

Zyklon ("The best system to mix"), code A-268, first published 2 December 1941.

A 259



**KPZ**

**TUBOS DE PRECISION**  
**<KRONPRINZ>**  
**FABRICACION ALEMANA**

TUBOS DE ACERO DE PRECISION  
SIN SOLDADURA, HASTA 120 mm

TUBOS DE ACERO DE PRECISION  
SOLDADOS, HASTA 100 mm

TUBOS ABIERTOS, HASTA  
60 mm DIAMETRO EXTERIOR

PARA APLICACIONES ESPECIALES  
TUBOS DE ACERO FINO, SIN SOLDADURA,  
INOXIDABLES Y RESISTENTES A LOS ACIDOS

Representante para España  
**ERNESTO H. BRACKER**  
RAMBLA CATALUNA, 66 - BARCELONA

Kronprinz (precision tubes), code A-259, first published 3 December 1941.

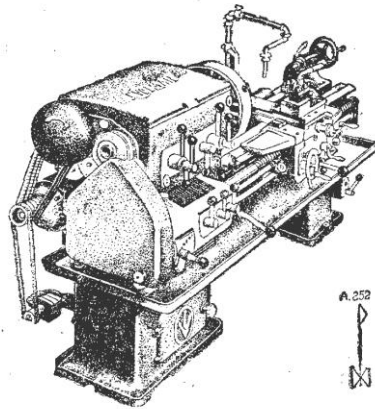


...encontrarán las Naciones en  
**LA NUEVA EUROPA  
CONTINENTAL**  
la base primordial y la razón de  
su prosperidad en la riqueza de  
su suelo y en el rendimiento de su  
trabajo, y sus productos les ser-  
virán para adquirir fuera de sus  
fronteras cuanto puedan necesitar.

A 284 DW

“Once the chains are broken... nations will find in the New Continental Europe...”, code A-284, first published 5 December 1941.

# J.VOLMAN



## **TORNOS**

rápida de gran precisión, con dispositivo para cortar roscas pronunciadas.

## **TORNOS-REVOLVER**

de gran rendimiento para trabajos en barras.

## **TORNOS**

para mecánica fina, óptica y otros trabajos.

## **FRESADORAS**

para tallar engranajes con procedimiento de fresar dientes con fresas helicoidales.

## **FRESADORAS UNIVERSALES**

## **MAQUINAS**

de agujerear hasta 50 milímetros de diámetro.

## **PARA ESPAÑA "OCIMEX"**

Avenida José Antonio, 27  
Teléfono 23988 - Apartado n.º 701

**MADRID**

Volman (lathes, milling machines, piercing machines), code A-252, first published 10 December 1941.



El corazón de Europa supo impulsar a través de las arterias del Mundo la savia fecunda de su genio.

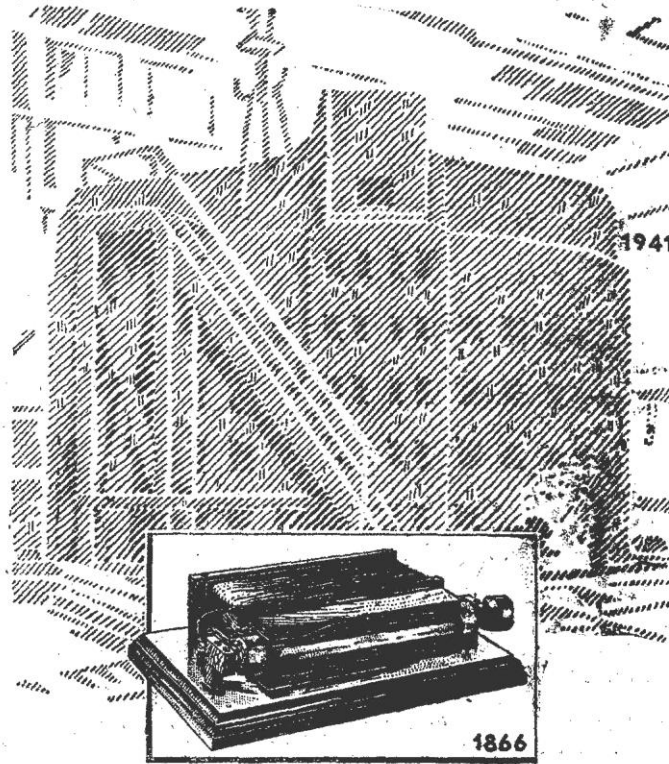
Los pueblos, fundidos en el crisol de un mismo corazón, contribuirán a completar la economía de sus Estados Europeos, creando así una colectividad potente y vigorosa en

La

**NUEVA EUROPA CONTINENTAL**

“One single heart”, code A-285, first published 1 January 1942.

# Una idea una realización



Hace 75 años, el 17 de Enero de 1867, el ingeniero alemán Werner Siemens presentó a la Academia de Ciencias de Berlín su célebre informe sobre su primer dinamo inventada ya por él en 1866. Con su descubrimiento del principio dinamoeléctrico, Siemens proporcionaba al mundo el medio para engendrar corrientes eléctricas de la intensidad que se deseara. De la realización de esta idea se beneficia hoy el mundo entero con la aplicación de la electricidad en todas las actividades humanas.



Europa, siendo el Continente de posibilidades ilimitadas, fecunda las obras más trascendentales del mundo entero.

A-304

W

“The first dynamo ever invented”, code A-304, first published 3 February 1942.

A-368

*Una idea  
una realización*

1897

En el año 1897 se llegó a construir en Alemania el primer "MOTOR DIESEL" del mundo en condiciones para el trabajo.

Esta genial construcción que hace época, fué conseguida venciendo enormes dificultades en el transcurso de los años 1893 al 1897, por su inventor el Ingeniero alemán RUDOLF DIESEL y sus colaboradores.

Hoy día, industrias alemanas se encuentran capacitadas para construir instalaciones con motores DIESEL, cuya potencia asciende a unos 10.000.000 de HP.

La obra de RUDOLF DIESEL y de sus colaboradores, verdadera revolución de la técnica, regaló al mundo una fuente inagotable de energías.

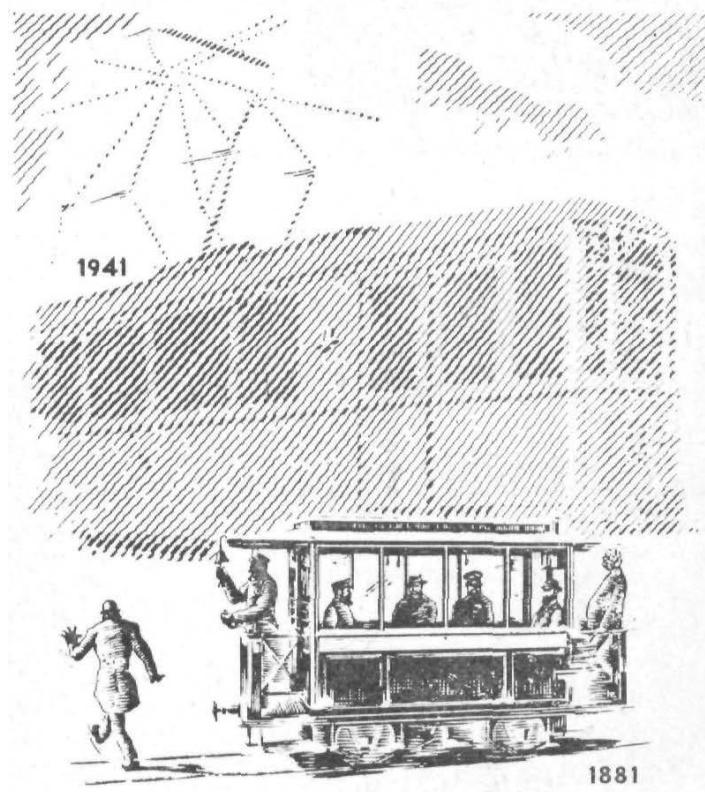
1943



*EUROPA, siendo el continente de posibilidades ilimitadas, fecunda las obras más trascendentales del mundo entero.*

"The world's first diesel engine in working conditions", code A-368, first published 21 February 1942.

# Una idea una realización



En el año 1881 se construyó en Alemania el primer tranvía eléctrico del mundo. La corriente de 110 voltios se le suministraba a través de los rieles, de forma, que si en el cruce de los caminos una caballería pisaba al mismo tiempo los dos rieles, recibía una descarga eléctrica. Posteriormente se hizo que los cruces estuviesen desprovistos de corriente y los tranvías los pasaban por su fuerza de inercia. Y así, mejorando siempre, 60 años de trabajos dan como resultado el tranvía de hoy, que une a la belleza de su línea todos los adelantos que aseguran la comodidad de los viajeros y la seguridad de su funcionamiento.



Europa, siendo el Continente de posibilidades ilimitadas, fecunda las obras más transcendentales del mundo entero.

A-317

DW

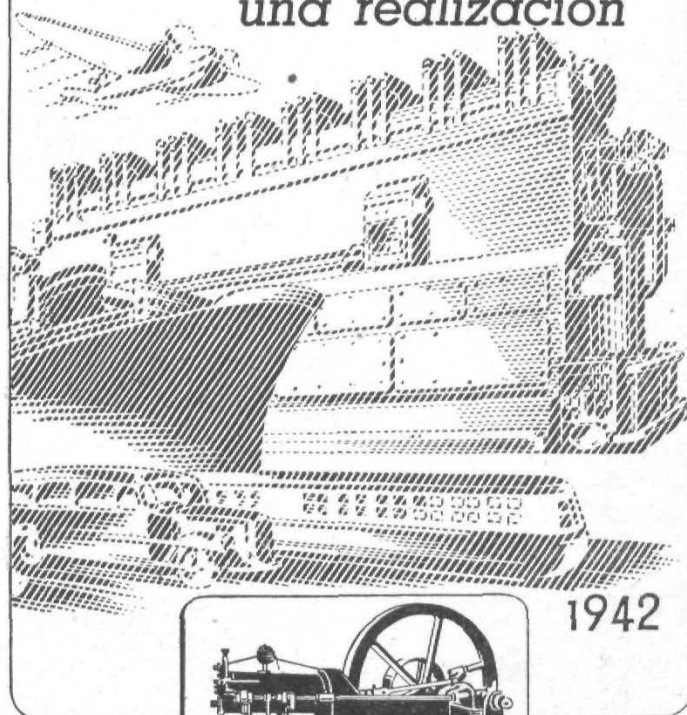
“The world’s first electric tram”, code A-317, first published 14 March 1942.



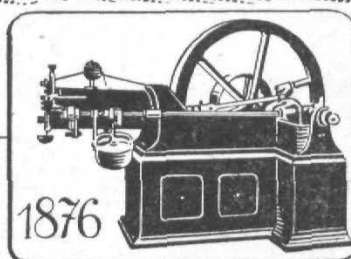
“Otto Lilienthal is regarded as the precursor of aviation”, code A-334, first published April 1942.



# Una idea una realización



1942



1876

En el año 1864 fué construido por el ingeniero alemán Otto, en Deutz (Alemania) el primer motor útil de carburación y en 1876 el primero de cuatro tiempos. A la realización de esta idea se deben los grandes adelantos conseguidos en la locomoción, así como demás industria, tanto es así, que los motores dominan hoy día las grandes vías de comunicación aéreas, terrestres y marítimas para beneficio mundial.



Europa, siendo el Continente de posibilidades ilimitadas, fecunda las obras mas transcendentales del mundo entero.

A-318

D  
W

“The first carburetted engine”, code A-318, first published 14 April 1942.



## Una idea una realización

1889



1942



En el año 1889 fué construido el primer automóvil con motor de petróleo y sus transmisiones necesarias, inventado por el mecánico alemán Teófilo Daimler, siendo notable esta fecha, pues de ella data la vulgarización de los motores de petróleo aplicados a los automóviles. A este gran invento se debe el máximo perfeccionamiento conseguido en la construcción de los automóviles contemporáneos, hoy al alcance de una gran mayoría, que puede disfrutar de eficientes servicios que comenzaron a desarrollarse en aquella fecha hasta llegar a su plenitud actual.



Europa, siendo el Continente de posibilidades ilimitadas, fecunda las obras más trascendentales del mundo entero.

A-336

D  
W

“The first automobile with a petroleum engine”, code A-336, first published May 1942.



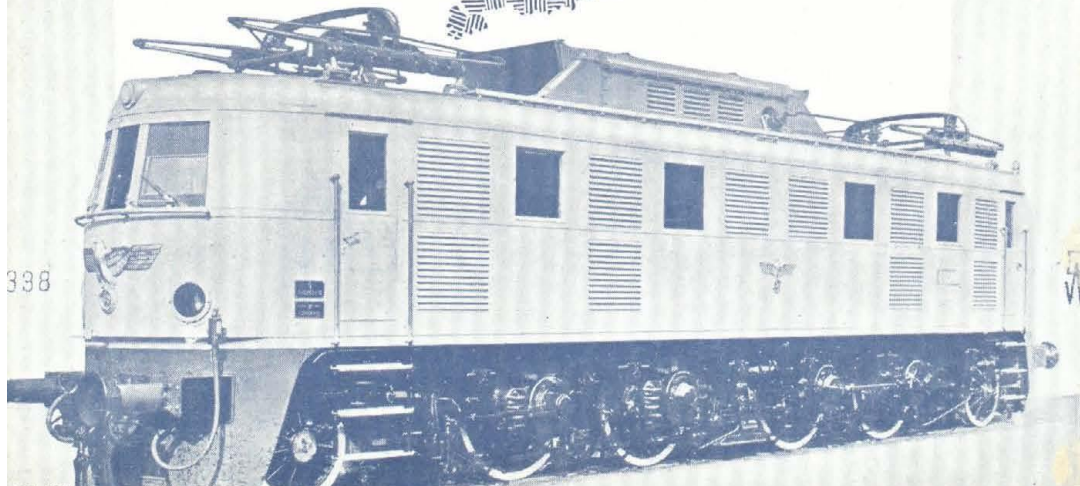
## UNA IDEA UNA REALIZACION

En el año 1879 se construyó en Alemania la primera locomotora eléctrica del mundo. Esta locomotora arrastraba 3 coches, cada uno para 6 viajeros, en un recorrido circular de 300 metros.

Perfeccionando esta primera construcción, año tras año, se llegó a fabricar en el año 1940 la mayor locomotora eléctrica del mundo, con bastidor enterizo de 8.000 HP. de potencia, pudiendo arrastrar una carga de 360 toneladas a la velocidad de 200 kilómetros por hora.



*Europa, siendo el Continente de posibilidades ilimitadas, fecunda las obras mas transcendentales del mundo entero.*



“The world’s first electric locomotive”, code A-338, first published 19 July 1942.



# Contabilidad EUROPEA



El libro Mayor, abierto sobre el mapa de Europa — cuyas partidas y contrapartidas tendrán rumor de mares de espigas, ruidos de máquinas y martillos, penachos de humo de las fábricas, aromas de frutos selectos de las huertas y brisas de los productos del mar — será el que encierre la vida propia de la

## NUEVA EUROPA CONTINENTAL

y las potencias económicas de sus estados colaboradores.

A-360

D  
W

“European Accounting”, code A-360, first published 9 August 1942.

A-375



*Autarquía*  
**EUROPEA**

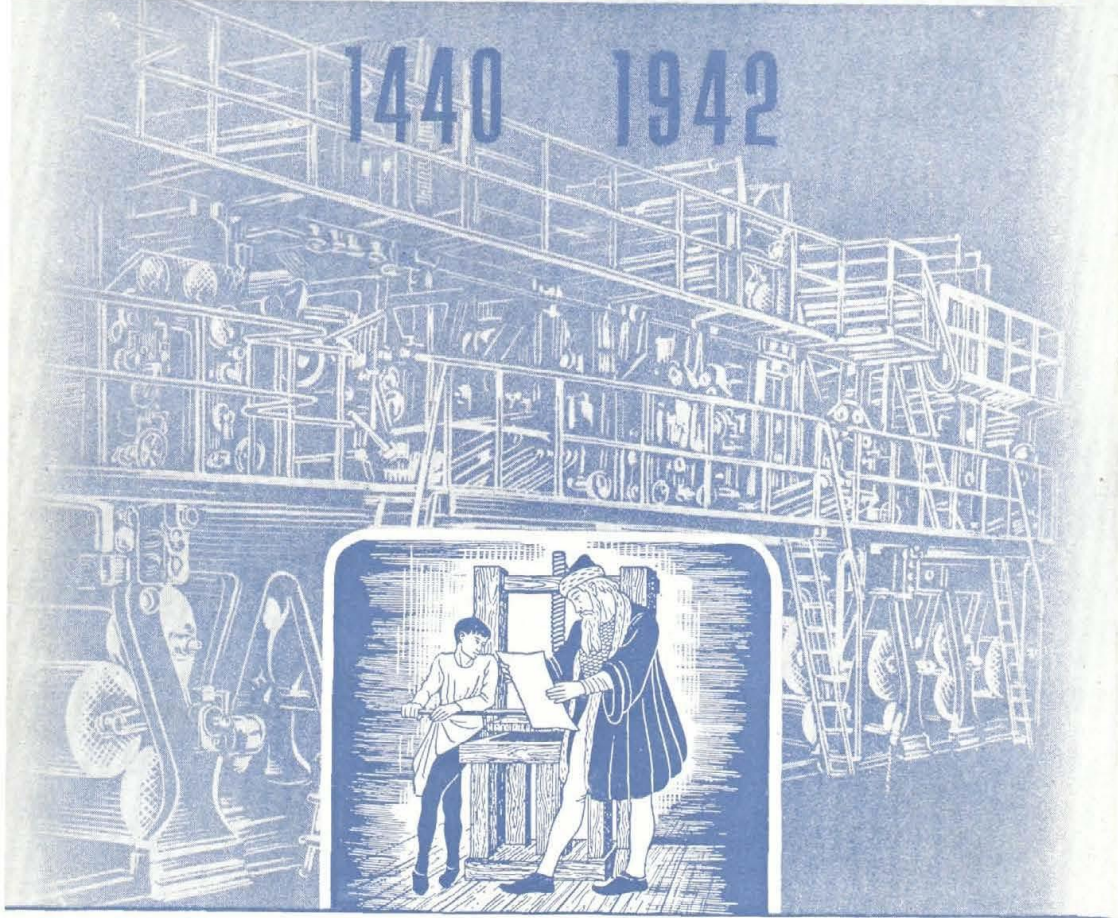
Europa con el genio de su trabajo crea obras mundiales para el beneficio de la Humanidad. Este rendimiento de su labor, en su suelo, costas, minas, fábricas y laboratorios asegura a los Estados Europeos la VIDA PROPIA de la **NUEVA EUROPA CONTINENTAL**

RV

“European Autarky”, code A-375, first published 9 September 1942.



# UNA IDEA UNA REALIZACION



En el año 1440 nació la historia de la Imprenta. En dicho año, el inventor alemán Johannes Gutenberg imprime por primera vez en sus talleres libros mediante tipos sueltos.

Debido a este genial invento, el Arte Gráfico ha llegado hoy día a obtener una perfección completa que se refleja en la maquinaria moderna, como por ejemplo: Una rotativa de fabricación alemana del año 1942 que imprime de un solo movimiento 64 páginas en multicolor, pesando la instalación total de esta rotativa 200.000 Kgs.



Europa, siendo el Continente de posibilidades ilimitadas, fecunda las obras mas transcendentales del mundo entero.

A-378

DW

“The printing press”, code A-378, first published 4 October 1942.

## LA VOZ DE ALEMANIA PARA ESPAÑA

### HORARIO

**DE ONDAS CORTAS**

| m 16,89 = D. J. E.<br>19,74 = D. J. B.<br>20,75 = D. Z. H. |                | m 24,73 = D. Z. E.<br>25,31 = D. J. P.<br>28,45 = D. Z. D. |                                | m 29,16 = D. Z. C.<br>31,09 = D. J. W.<br>31,38 = D. J. A. |   | m 41,15 = D. J. I.<br>48,47 = D. X. G.<br>48,86 = D. X. X. |   |
|--|----------------|--|--------------------------------|--|---|--|---|
| Hora local   | Metros         | Hora local   | Metros                         | Hora local   | Metros  | Hora local   | Metros                                    |
| de 14.00<br>a 14.14  | 19,74          | de 18.30<br>a 18.45  | 24,73                          | de 0.30<br>a 0.45  | 48,47   | de 3.00<br>a 3.15  | 31,09 - 25,31<br>41,15 y 31,38            |
| de 14.00<br>a 14.15  | 16,89          | de 22.00<br>a 22.15  | 29,16                          | de 1.00<br>DL a 1.15                                       | 31,09 - 25,31<br>41,15 y 31,38                  | de 3.15<br>a 3.30  | 31,09 - 25,31<br>41,15 y 31,38            |
| de 15.00<br>a 15.15  | 24,73          | de 22.59<br>a 23.02  | 29,16                          | de 1.15<br>DL+ a 1.30                                      | 31,09 - 25,31<br>41,15 y 31,38                  | de 4.00<br>a 4.15  | 29,16 - 31,09<br>25,31 - 41,15<br>y 31,38 |
| de 16.30<br>a 16.45  | 20,75<br>24,73 | de 0.00<br>a 0.15<br>DL                                    | 31,09 - 25,31<br>41,15 y 31,38 | de 2.00<br>a 2.15  | 28,45 - 48,86<br>31,09 - 25,31<br>41,15 y 31,38 | de 4.15<br>a 4.30<br>DL+                                   | 29,16 - 31,09<br>25,31 - 41,15<br>y 31,38 |
| de 17.00<br>a 18.30<br>División Azul                       | 24,73          | de 0.15<br>a 0.30<br>DL+                                   | 31,09 - 25,31<br>41,15 y 31,38 | de 2.15<br>a 2.30<br>+                                     | 31,09 - 25,31<br>41,15 y 31,38                  | de 5.00<br>a 5.15  | 29,16 - 31,38<br>31,09 y 41,15            |

**DE ONDAS NORMALES**

| m 338,6<br>470,2                     |        | KHZ 886<br>638      |                  | Emisores<br>Alpas<br>Praga |                     | m 278,6<br>470,2  |        | KHZ 1.077  |        | Emisores<br>Bordesux |  |
|--------------------------------------|--------|---------------------|------------------|----------------------------|---------------------|-------------------|--------|------------|--------|----------------------|--|
| Hora local                           | Metros | Hora local          | Metros           | Hora local                 | Metros              | Hora local        | Metros | Hora local | Metros | Hora local           | Metros                                     |
| de 15.00<br>a 15.15                  | 278,6  | de 18.00<br>a 18.45 | 278,6            | de 21.30<br>a 21.45        | 470,2<br>y<br>338,6 | de 0.30<br>a 0.45 | 338,6  |            |        |                      |  |
| de 17.00<br>a 18.30<br>División Azul | 278,6  | de 20.30<br>a 20.45 | 470,2 y<br>338,6 | de 23.30<br>a 23.45        | 470,2<br>y<br>338,6 |                   |        |            |        |                      | DL = Días laborables.<br>+ = Sin noticias. |

Informes: "ALEMANIA" - Alcalá, 42 - MADRID

A-141

DW

“The voice of Germany for Spain”, code A-141, first published 19 October 1942.



A-384

# VITALIDAD

DW

Brazos fuertes y cerebros geniales del Viejo Continente crean, en beneficio del mundo, las más trascendentales obras.

Esta vitalidad de los Estados Europeos asegura asimismo la VIDA PROPIA de la

## NUEVA EUROPA CONTINENTAL

“Vitality”, code A-384, first published December 1942.



# Una idea una realización



1882



1939

En el año 1882 se construyó en Alemania la primera locomotora eléctrica para minas.

Perfeccionando esta primera construcción año tras año, se llegó a fabricar en el año 1939 la locomotora eléctrica de descombro, más pesada del mundo, pues su peso neto es de 150 toneladas y puede arrastrar 325 metros cúbicos, con un peso total de 1.000 toneladas. Su equipo eléctrico es de 6 motores con una potencia total de 2.000 HP.



*Europa, siendo el Continente de posibilidades ilimitadas, fecunda las obras más transcendentales del mundo entero.*

A-390

DW

“The first electric locomotive for mines”, code A-390, first published 13 December 1942.





A 391

DW

# PRIMAVERA

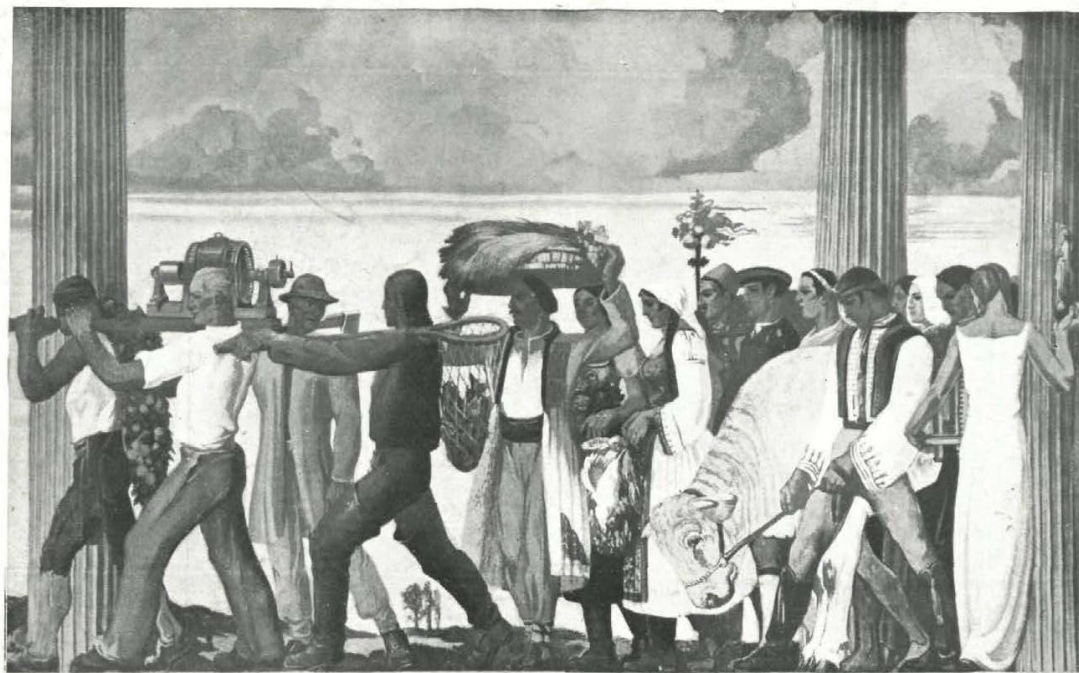
A golpes de hacha, perdió el viejo tronco sus ramas secas y al llegar la Primavera recobró el árbol su lozanía y vigor.

El esfuerzo y el ingenio de los Estados Europeos se verán compensados en la alegría del mañana con el florecimiento fecundo de la

**NUEVA EUROPA CONTINENTAL**

“Spring”, code A-391, first published 24 January 1943.





CUADRO DE EMIL BLOCK

## EL SUELO DE EUROPA ALIMENTA A TODOS SUS PUEBLOS

Suficiencia en los recursos vitales, capacidad para vivir sin tutelas, energía espiritual y fuerza material para resolver sus propios problemas. Todo esto lo dá el suelo de Europa a sus pueblos.

Cada pueblo Europeo con su personalidad destacada, con su fisonomía peculiar, laborando dentro de la gran familia europea, hará que tenga VIDA PROPIA la NUEVA EUROPA

A-396

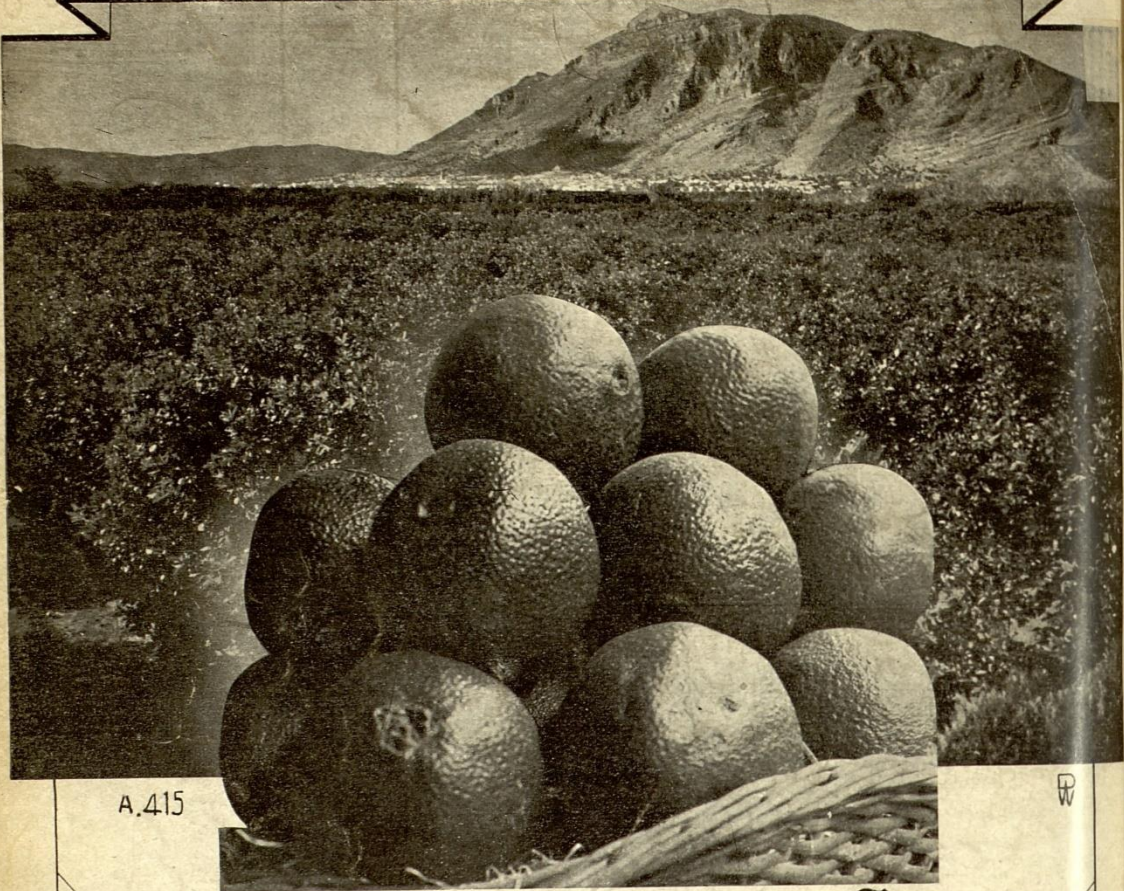


**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“The soil of Europe feeds all its peoples”, code A-396, first published 5 March 1943.



**EUROPA PUEDE VIVIR POR SI MISMA**

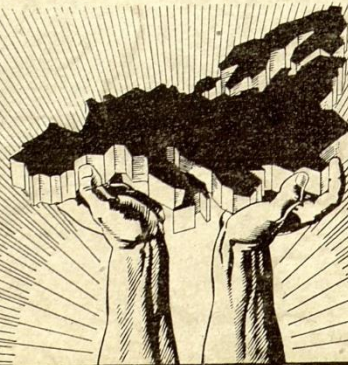


A.415



## **NARANJAS DE ESPAÑA**

La naranja española, sin rival en el mercado mundial, es el orgullo del comercio exterior de España y constituye por si sola, uno de los fuertes pilares de la economía europea.



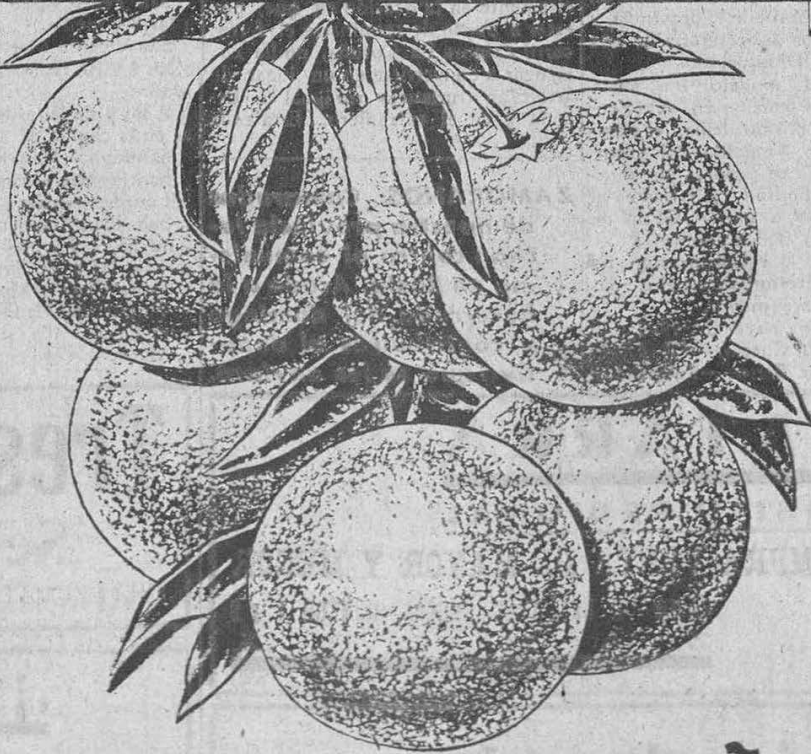
**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Oranges of Spain”, code A-415, first published 1 May 1943.



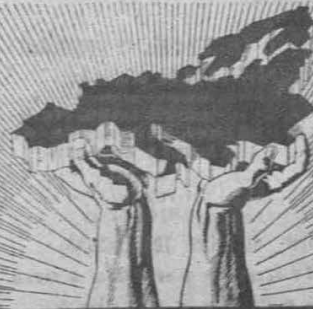
**EUROPA PUEDE VIVIR POR SI MISMA**

A. 415



## **NARANJAS DE ESPAÑA**

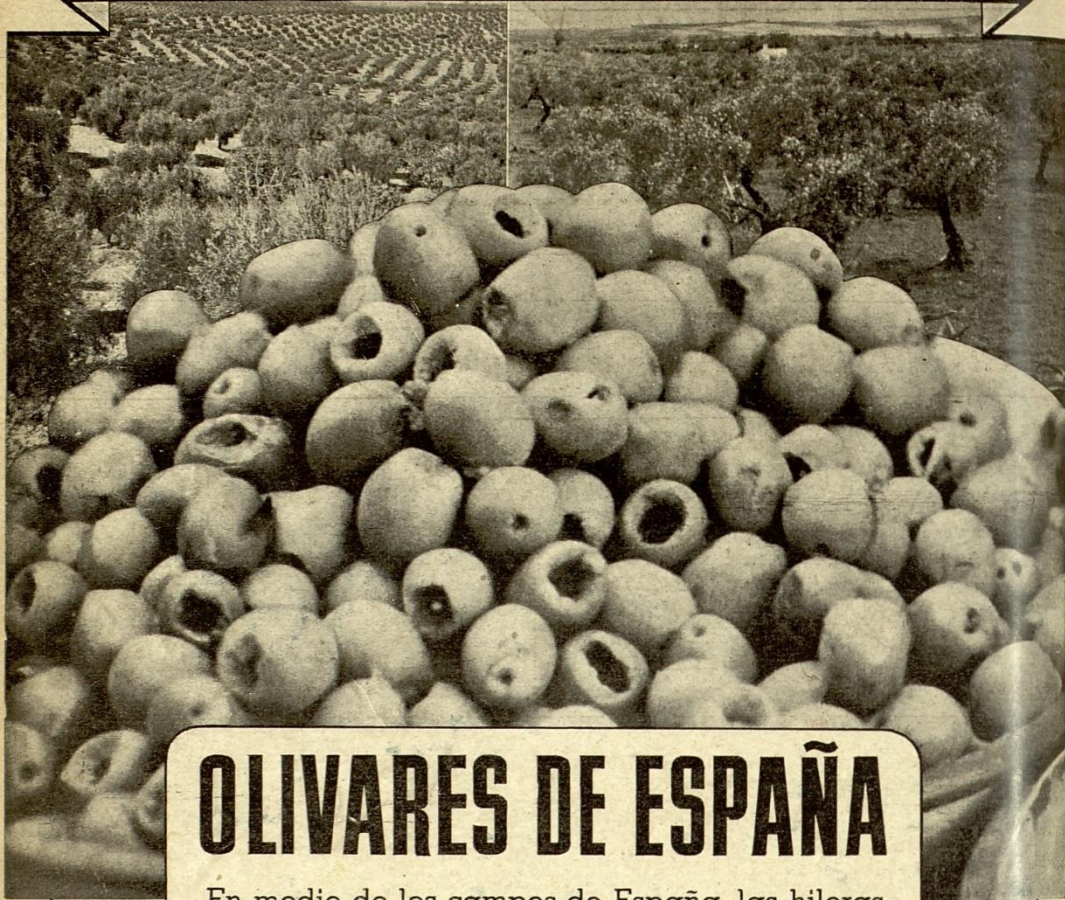
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**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Oranges of Spain”, code A-415, first published 1 May 1943.

**EUROPA PUEDE VIVIR POR SI MISMA**



## **OLIVARES DE ESPAÑA**

En medio de los campos de España, las hileras de olivares con sus hojas de plata, son como formaciones en el ejército de la producción. En la economía europea son un factor importantísimo los aceites españoles.

A-420

DW

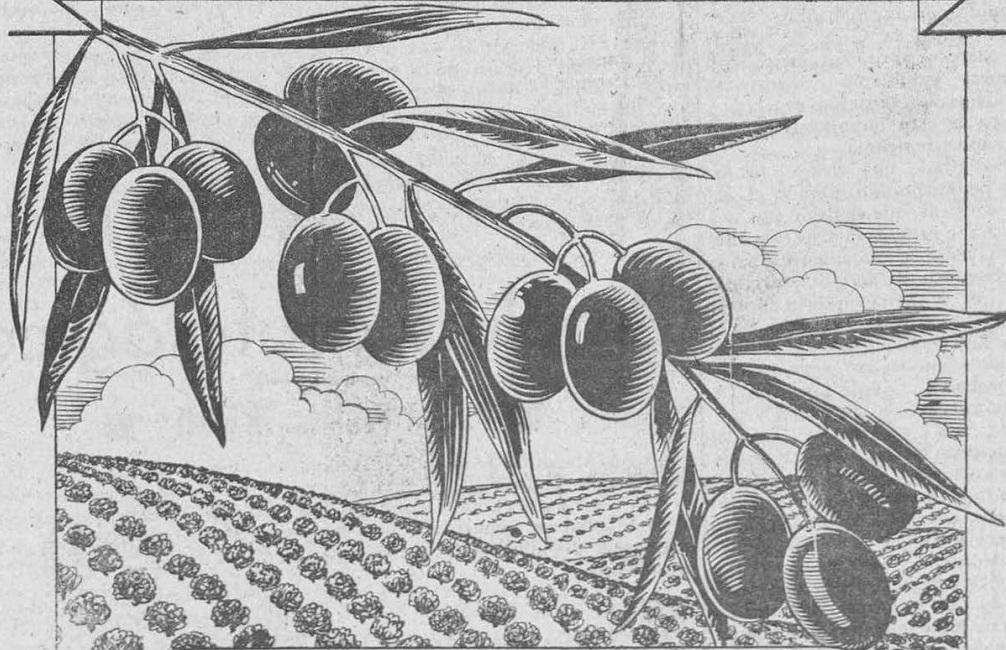


**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Spanish olive groves”, code A-420, first published 1 June 1943



**EUROPA PUEDE VIVIR POR SI MISMA**



## **OLIVARES DE ESPAÑA**

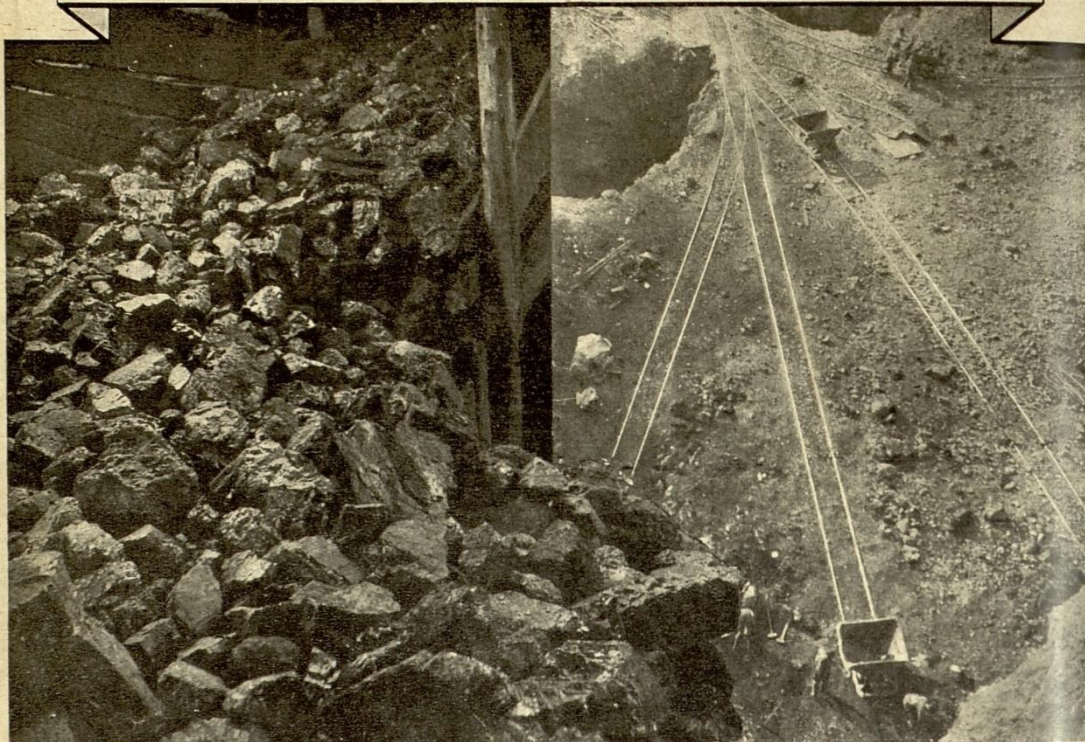
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**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Spanish olive groves”, code A-420, first published 1 June 1943

**EUROPA PUEDE VIVIR POR SI MISMA**



## *Minería española*

Las piedras minerales que el esfuerzo español extrae de las entrañas de su suelo, servirán para cimentar su colaboración eficaz en la nueva economía europea.

A 412



**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Spanish mining”, code A-412, first published 1 July 1943.



**EUROPA PUEDE VIVIR POR SI MISMA**



## *El corcho español*

El alcornoque añoso como la encina, ha presenciado a través de los siglos como su corteza era una riqueza netamente española. En los tiempos actuales, las innumerables aplicaciones del corcho, hacen de este producto un factor importante de la economía europea.



**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Spanish cork”, code A-411, first published 1 August 1943.



**EUROPA PUEDE VIVIR POR SI MISMA**



## *El corcho español*

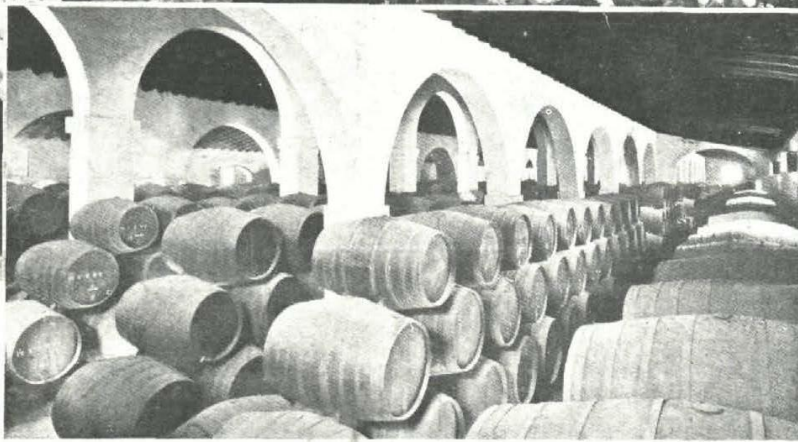
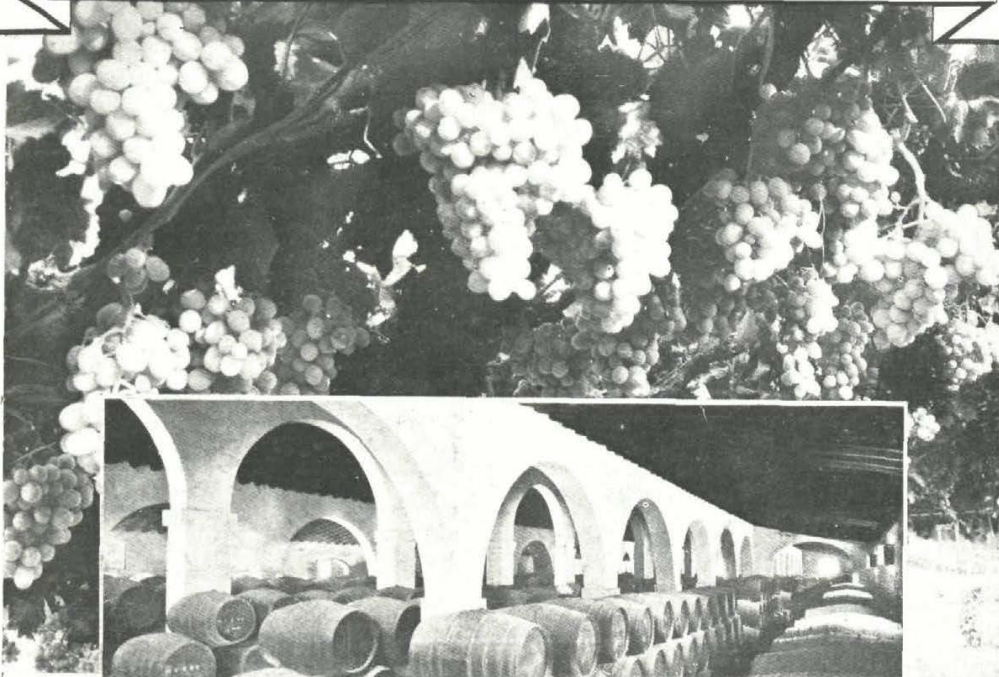
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**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Spanish cork”, code A-411, first published 1 August 1943.

**EUROPA PUEDE VIVIR POR SI MISMA**



## **RIQUEZA VINICOLA ESPAÑOLA**

El sol de España cuajado en la esmeralda de las viñas produce el vino español que cruza el mundo, dejando alegría en las almas y bienestar en los cuerpos, mientras constituye una fuente de riqueza dentro de la comunidad de los pueblos europeos

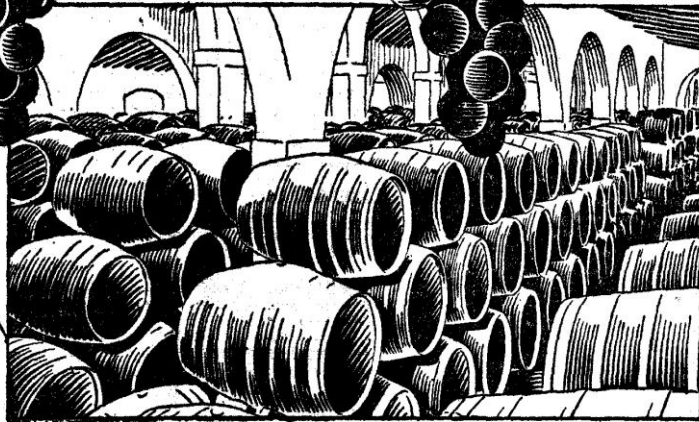


A416

**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Spanish wine wealth”, code A-416, first published 11 September 1943.

**EUROPA PUEDE VIVIR POR SI MISMA**



**RIQUEZA VINICOLA ESPAÑOLA**

El sol de España cuajado en la esmeralda de las viñas produce el vino español que cruza el mundo, dejando alegría en las almas y bienestar en los cuerpos, mientras constituye una fuente de riqueza dentro de la comunidad de los pueblos europeos

A 416

**CEREBROS Y BRAZOS EUROPEOS PRESERVAN A EUROPA DEL BOLCHEVISMO**

“Spanish wine wealth”, code A-416, first published 11 September 1943.