THE MATERIAL CULTURE REVIEW

REVUE DE LA CULTURE MATÉRIELLE

Volume 94
Thematic Issue: *The Social Lives of Maps*, vol. 2
Guest Editor: Dr. Lauren Beck

FALL 2022 / L'AUTOMNE 2022

Material Culture Review

Revue de la culture matérielle

Web Site / Site Internet
www.materialculturereview.com

Material Culture Review gratefully acknowledges the support of the Social Sciences and Humanities Research Council and the Cape Breton University Press

La *Revue de la culture matérielle* est reconnaissante de l'appui qui lui est offert par le Conseil de recherches en sciences humaines et les Cape Breton University Press

Material Culture Review

Revue de la culture matérielle

Table of Contents/Tables des matières

Special Issue: The Social Lives of Maps, Volume 2

Guest Editorial/Éditorial Invité

Exhibit Reviews/Comptes rendus d'expositions

The Social Lives of Maps, Volume 2

LAUREN BECK
Mount Allison University

Introduction to *The Social Lives of Maps*, Volume 2

As Bill Brown and Arjun Appadurai have observed, the biographical lives of things inform us about not only a thing's existence, from its creation until its demise, as well as how it has been used, valued, and commoditized. They also inform us about human interaction with things in ways that can allow us to understand the experiences of marginalized and unexpected interlocutors of a thing's existence. Maps as documents have complex lives. In some ways, maps might be considered eternal in that they are subject to revision and these updates comprise moments or stages of their life spans as living documents. In others, maps live short lives when inserted into books that get destroyed, deemed out of date, grow ragged and decrepit, or end up torn out of the book altogether and introduced into entirely new vertical contexts as wall maps.

Maps are everyday objects, but they are also highly esteemed and valued as antiques, rarified and conserved in the special collections of archives, libraries, and museums who catalogue their lives or provenance. Maps experience in this sense class and privilege much the way that humans do, which gives us pause to consider whether other areas of identity are experienced by maps as well. Contemporary mapping platforms such as Google Maps offer entanglements with our own lives; they collect data about our movements, desires, and interactions, and attempt to interact with us through these connected nodes. Artificial intelligence, machine learning, and responsive software designed to interact with humans increasingly make maps living interactions that adapt to and engage directly with us. Finding ourselves on an analogue, paper map offers a similar function in that humans consistently consult the map to both find and see themselves through it.

This thematic series of issues of the *Material Culture Review* engages with all aspect of the social lives of maps in any way that underlines this material object's lifespan. *The Social Lives of Maps* highlights and explores signature areas of a map's biography as an object, as a living entity subject to being updated and transformed for new audiences, and as a container of knowledge and wisdom capable of influencing human activity.

As the project's guest editor, I will reserve an analytical introduction for the third and final volume of the series, and take the opportunity here to introduce the five essays contained in *The Social Lives of Maps*, vol. 2.

The first of this issue's articles is by Graciela Favelukes (CONICET/Universidad de Buenos Aires, Argentina), titled

"Voyages of a 17th Century Map of Buenos Aires: From Spies and Sailors to Printers and Scholars." The author undertakes an exploration of the long and rich life span of a city map of Buenos Aires and its changing settings by following more than 15 versions of Barthelemy de Massiac's 1669 map of the city produced between 1669 and 1981 while shining light on the map's different uses and purposes over the centuries. Her analysis makes plain the political and social ideologies that influence the map and its contents. At the same time, she traces the complex lifespan of a map that, like the cat, has more than 15 lives.

The next article is by Cortney Berg (CUNY, USA), titled "Sanudo's Vision, Vesconte's Expertise, and the Ghost Hand: Reception of the Maps in the MS Additional 27376." In the fourteenth century, Marino Sanudo authored his lengthy work, *The Book of Secrets of the Faithful of the Cross*, or *Secreta*, and commissioned sets of maps to accompany the text, and dozens of copies of this work wound up as gifts that have since come to reside in the national libraries of various countries, including England and the Vatican. This article considers two such copies from the workshop of the influential cartographer, Pietro Vesconte, the MS Additional 27376 in the British Library with the MS Tanner 190 in the Bodleian Library, in order to compare the images and maps, and posit what the differences between the two illustrate about Sanudo as an author and a statesman. The author also turns from what the maps tell us about their creators to consider what experiences they have had themselves. Berg works to uncover a ghost hand that has intervened into these manuscripts in order to meditate on how medieval maps become reinscribed as political documents about the state of the world.

The third article is by Heather Rogers and Kelly Chang (McGill University, Canada), titled "Mapping Ecological Imperialism: A Digital Environmental Humanities Approach to Japan's Colonisation of Taiwan." In this article, the authors assess the role of cinchona—a tree whose bark yields quinine alkaloids key to the treatment of malaria—in Japan's imperialist expansion through both historical maps and digital mapping tools. They seek to provide the first detailed historicization of the intertwinement of nature, people, and nation building using maps as a platform for this knowledge, showing how historical maps and digital mapping tools can elucidate complex rooted networks within colonial societies.

The penultimate article is by Karen Rose Mathews (University of Miami, USA), titled "Mapping, Materiality, and Merchant Culture in Medieval Italy (12th-14th Century)." Over the course of the twelfth century, Pisan merchants formulated cognitive skills that fostered a perception and assessment of the world through the lens of cartographic knowledge and inventories of commodities, places, and trade routes. The development of a "mapping eye" among the mercantile elite of this maritime republic combined two complementary visual systems. The production and distribution of Mediterranean luxury goods encouraged the development of cartographic tools to facilitate navigation and maritime commerce. In turn, the creation of portolan charts and texts, with their diagrammatic format and conceptualization of space into interconnected but distinct ports of call, determined the arrangement of goods acquired

through Mediterranean trade in a series of heterogeneous visual ensembles that juxtaposed material objects of various media, origin, and signification. Maps, then, were products of human ingenuity and necessity that in turn transformed the ways of seeing of those who created and used them, formulating a visual matrix through which information was processed and defining social relationships between people but also between people and things.

The final article is by Adam McKeown (Tulane University, USA), titled "Mapping Ideas in the Fortress-Cities of *Civitates orbis terrarum*." Using maps from the influential sixteenth-century *Civitates orbis terrarum* series, this article considers how the two-dimensional ichnographic city plan, which emerged in the late fifteenth century, developed rapidly during the military crisis of the sixteenth century when many European cities scrambled to rebuild walls in response to new fire weapons. The two-dimensional city plan was instrumental in this sweeping and costly reconfiguration of the European built environment in that it allowed architects and civic leaders to see the urban complex as a continuous system. The new urban plans also had the effect of transforming the city into militarized space, however, as vectors of gunfire and lines of communication drove planning considerations. The city plans that survive in manuscripts and printed books testify to the enthusiasm for militarizing the human environment throughout the sixteenth and seventeenth centuries, but they also reveal how artists explored and developed aesthetic ideals under the auspices of military optimization. The new designs tended to subordinate military considerations to Vitruvian ideals, to the extent that geometric regularity became for no practical reason an ideal of military design. Fortification designs in this way often possessed lives well in advance of any real-world manifestation of the infrastructure itself.

In this issue, we also include exhibition reviews by Trudy Watt and Mohsen Veysi.

TRUDY WATT
University of Wisconsin Milwaukee

Review of
Renegades: Bruce Goff and the American School of Architecture. Christopher C. Gibbs College of Architecture, The University of Oklahoma, Fred Jones Jr. Museum of Art, Norman, OK. January 23 – April 5, 2020.

It would be easy to mistake the sensuous hummocks, psychedelic spirals, feathered angles, crystalline towers, mysterious depths and lush otherworldly landscapes that beckon from the walls of the *Renegades* exhibition at the Fred Jones Jr. Museum of Art at The University of Oklahoma (OU) for mere idiosyncratic fantasy (figure 1). Upon investigation, however, one quickly learns that the imaginative generosity and visual diversity of this work stems from a uniquely humble approach to teaching architecture developed by Bruce Goff, Herb Greene and their colleagues during the 1950s and '60s at what is now known as the Christopher C. Gibbs College of Architecture at OU. We might call this 'student-centered' pedagogy – which rings somehow radical in United States architecture schools even today. This approach to teaching, in which student creativity and self-expression were cultivated over adherence to prevailing design norms, produced not only a dazzling array of form and space in drawings and built work but also a vulnerability to disdain and demolition. However brilliant the approach and giddy the work, a Midwestern context and Goff's homosexuality (for which he eventually resigned his leadership of the school) underscore the fragility of this uniquely 'American School of Architecture' in a time of rampant Modernism and, that other Midwesterner, Frank Lloyd Wright's final career climax. It is perhaps still too easy to overlook the work of a gay man in 'fly-over' country.

Figure 1
Ernest Burden, *Untitled*, Advanced Study of Materials (Architecture 250) student assignment, 1955. Ernest Burden Collection, American School Archive, University of Oklahoma Libraries.

The design team for *Renegades: Bruce Goff and the American School of Architecture* was led by exhibition designer Michael Hoffner, research and curation were led by Luca Guido and the richly illustrated exhibition catalog was edited by Luca Guido, Stephanie Pilat and Angela Person, with a foreword by Aaron Betsky.

Consisting of a physical installation in the Nancy Johnson Records Gallery at the Fred Jones Jr. Museum of Art, an online exhibit (accessible at: https://gibbs.oucreate.com/renegadesonline/) and the exhibition catalog, *Renegades* ran from January 23 to April 2, 2020 and, therefore, almost directly into the global COVID-19 pandemic that shut institutional doors beginning in March 2020. Just before the shutdown, the College of Architecture hosted a well-attended national conference entitled *Schools of Thought: Rethinking Architecture Pedagogy*, in which key questions around decolonizing pedagogy, experiments in teaching, participatory design and equity in architecture schools dovetailed neatly with the story of Goff, his colleagues and their students. Questions about architecture education in transition could not have been timelier, as this conference and opportunity to experience the exhibition were almost surely among the last in-person events for many of the attendees.

A gently spiraling floor plan and material palette dominated by plywood, brown kraft paper and heavy-duty corrugated cardboard transformed the gallery into a space reminiscent of the design studio. This material sensibility gave the space a feeling of being a work in progress, somewhat like a student study model – a reference to the importance of Goff's pedagogy that was well-balanced by the sophisticated forms that reference his built work. The aforementioned spiral form floor plan is a clear reference to Goff's Bavinger House (which features a logarithmic spiral in plan) while large-scale shingle configurations in the primary display walls gesture toward Herb Greene's voluptuously shingled "Prairie Chicken House," a study model of which can be seen in the foreground of the exhibition view shown here (figure 2).

Figure 2
Exhibition photograph, *Renegades,* photo credit Joseph Mills.

The theme of student-driven creative expression at OU's American School, the astonishing professional work that grew out of this context and the ways that otherness expose both process and product to destruction are present throughout the exhibition. At the entrance to the main exhibition hall, the visitor encounters an installation of magazine spreads from the 1957 publication of the Annual Publication of the National Association of Students of Architecture, where the wall text reads, "No other school departed from the Bauhaus approach so clearly and so radically" (Wall Text 2020). Indeed, the spread depicting the OU student work stands apart in almost all possible ways, from the exuberant forms the students explored to the black background of the page – a literal contrast to the surrounding pages full of sober, rectilinear projects in the International Style. At every turn, the OU student and faculty work strides boldly in a novel direction. Neither formal language nor materiality hold the work together – rather a feeling of joyful camaraderie and delight in sensitive place-based architecture experiments weaves the cohort of people and projects

together. Quoting Arn Henderson, scholar of Goff's work and 70-year member of the OU community, the curators note that in the American School, "there was no formula or rules," (Wall Text 2020). Students learned via a Socratic method of inquiry rooted in a global history of the built environment and were explicitly not urged to imitate the work of the faculty or published work in the pages of architectural magazines. The colorful, vital results of this approach to empowering and amplifying student intellect and instinct populate the walls of the exhibition and include not just enthusiastic student work but also extensive documentation of built work by Goff, Greene and students who graduated the program.

The theme of loss plays a somber undertone in parallel to the productive and hopeful energy of the pedagogical story, student work and built works that flourished as a result of the American School approach in the mid-20th century. As the visitor is gently led to the center of the spiral, the vivid student work and breathless years of building give way to a story of demolition. In this section of the exhibition, "Lost Works of the American School Period," before and after photos mounted on headstone-like vertical panels memorialize buildings that have been demolished. This is a current story of loss in progress as many of these works, such as Chayo Frank's oceanic AmerTec Building (figure 3), have been torn down in just the last decade. One cannot help but think of these buildings in the context of other vulnerable structures at this moment in history, many of which share a tendency towards flamboyant form – such as Bertrand Goldberg's Prentice Women's Hospital (demolished in Chicago in 2013) (Stott 2013). The funeral march concludes at the center of the spiral where two panels are devoted to Goff's Bavinger House.

Figure 3
Chayo Frank, *AmerTec Building*, Hialeah, Florida, 1967. Courtesy Chayo Frank.

Two large scale photographs showing the Bavinger House intact and during demolition are flanked by chalkboard panels that invite visitors to share a memory (on the left) and name a teacher who had a positive influence (on the right). The latter question seems to conclude the exhibition, leaving the visitor in a state of reflection on those who devote their lives to teaching and who, like Bruce Goff, privilege the development of a student's own individual strengths and intentions over the demands of prevailing style, so often dictated by elite coastal institutions in the United States. It is important that the American School led by Goff, Greene and their colleagues arose in the middle of the country. Here, distance from the most obvious centers of cultural power certainly played a role in both creating the space for this unique school of thought to flourish and in forming the conditions under which such abundant and energetic work can have been overlooked. Thanks to the curators, designers and researchers of the *Renegades* exhibition, the legacy of the American School at OU has a freshly

laid foundation for current and future researchers to learn how "not to remember" for themselves (Guido 2020, 71-72).

References

Guido, Luca. 2020. "We Preach No Dogma: The Curriculum Under Bruce Goff." In *Renegades: Bruce Goff and the American School of Architecture*, edited by Luca Guido, Stephanie Pilat and Angela Person. 71-72. Norman: The University of Olkahoma Press.

Stott, Rory. 2013. "AD Classics: Prentice Women's Hospital / Bertrand Goldberg." ArchDaily, https://www.archdaily.com/432976/ad-classics-prentice-women-s-hospital-bertrand-goldberg.

Wall text, *Renegades: Bruce Goff and the American School of Architecture.* 2020. Norman: Christopher C. Gibbs College of Architecture.

MOHSEN VEYSI
Independent Scholar

Review of
Jeff Koons. Shine. Palazzo Strozzi, Florence, Italy. October 2, 2021 – January 30, 2022.

From October 2, 2021, to January 30, 2022, the Palazzo Strozzi of Florence hosted the exhibition of the American contemporary artist Jeff Koons who was born on January 21, 1955, in York, Pennsylvania. Koons, who studied at the Maryland Institute College of Art in Baltimore and the School of the Art Institute of Chicago, is known for his stainless-steel sculptures of *Puppy*, *Rabbit*, and the huge floral sculpture *Balloon Dog* (JeffKoons.com 2021). As the true heir to Marcel Duchamp and Andy Warhol, his work explores themes like pop culture, sexuality, ready-made, and kitsch. The exhibition is entitled, *Jeff Koons. Shine* and curated by Arturo Galansino and Joachim Pissarro, who have gathered thirty-three of the artist's most celebrated works from the mid-seventies to the present day.

The exhibition begins with the monumental *Balloon Monkey (Blue)* (2006-2013) installed in the courtyard of the Palazzo Strozzi (figure 1). Thirty-two other works have been distributed in eight rooms inside the building. Upon entering, in the first room, the viewers see two mirror-polished stainless steel with transparent color coating statues *Seated Ballerina* (2010-2015) and *Sacred Heart* (1994-2007). In the second room, seven pieces from the *Luxury and Degradation*, and *Statuary* series are installed. Two examples on display in the show are *Jim Beam - J.B. Turner Train* (1986), and his most iconic work the *Rabbit* (1986) which in 2019 at Christie's New York has been sold for $91,075,000 and broke the record of the most expensive living artist of the time (Christie's 2021). The third room holds five sculptures and paintings including *Balloon Dog (Red)* (1994-2000) (figure 2), and *Bread with Egg* (1995-1997). Most works installed in this room are from the *Celebration* series. Five works installed in room four come from Koons's early ready-mades such as Sponge *Shelf* (1978). Room five, hosts three works, *Dolphin* (2002) and *Lobster* (2007-2012) from the Popeye series that began in 2002, and *Hulk (Tubas)* (2004-2018) from the *Hulk Elvis* series. In room six, there are five pieces including two statues and three paintings from the *Gazing Ball* series (figures 3). Rooms seven and eight hold four sculptures such as *Metallic Venus* (2010-2012) from the *Antiquity* series and the oil on canvas painting *Olive Oyl* (2003) from the *Popeye* series.

Figure 1
Jeff Koons. *Balloon Monkey (Blue),* 2006-2013. Stainless-steel. Courtesy of Palazzo Strozzi. Photograph by the author Ela Bialkowska.

The pieces which represent forty years of the career of Jeff Koons explore the concept of *shine*. Through this concept, the artist questions man's relation to reality and the work of art. Stainless steel is the main material of Jeff Koons's art production that he started using in the mid-eighties with his *Luxury and Degradation* series. Through employing stainless steel, the work of art becomes a shiny mirror in which spectators see themselves and the surrounding environment. As a result, the viewer, the work of art and the environment unite. The idea has its roots in the theory of the role of the viewer in the creation of the work of art or the *beholder's share*, first introduced by the Austrian art historian Alois Riegl in the early 1900s, and developed by the likes of Ernst Kris, Ernst Gombrich and their followers.

The theory was first introduced to Jeff Koons by the winner of the 2000 Nobel Prize in Physiology or Medicine and Dr. Eric R. Kandel, the author of *The Age of Insight: The Quest to Understand the Unconscious in Art, Mind, and Brain, from Vienna 1900 to the Present,* 2012. The book traces the interaction between art, neuroscience and psychology from Vienna 1900 until recent times to explore how the human brain perceives and responds to the work of art. Accordingly, we perceive the outside world through our senses. The brain analyzes the received sensory information through hypothesizing and referring to memories and experiences and creates internal representations of the external world. What we see is the creation of our brain, and vision is a creative act. Thus, when looking at a work of art, each viewer brings their acquired memories, and experiences and interprets the piece differently (Kandel 2013).

In a conversation between Jeff Koons, Ann Temkin and Dr. Eric Kandel titled "An Artist's Creative Process in Action" at the New-York Historical Society, on January 26, 2017, Jeff Koons explains how he always wanted to find a psychiatrist, or somebody involved with the study of the mind, to write about his work. He used to watch Dr. Kandel on the Charlie Rose show, so he decided to contact him to see his work. After visiting his show where Koons's *Gazing Ball* series was on display, Eric emailed him and said, "Jeff, I went, I saw your exhibitions today, and I am blown away. You have contributed to the beholder's share" (Columbia University 2017).

Gazing Balls is a series of works produced from 2013 to 2021. In these series, Jeff Koons attached a blue glass shining ball on the replicas of classical sculptures, and paintings of the artists of the past from old masters such as Botticelli, Giotto, Rembrandt and Goya to modern artists like Picasso, Gauguin and Monet, among others (figures 3). When the viewer stands in front of each piece and looks at the work of art, they see themselves and their immediate environment in the shiny ball. Accordingly, viewers unite with the

artworks, and bring their unique emotions, thoughts and memories and interpret them in their manner. This union, and the participation of the beholder in the creative process, according to the artist, is the goal of his work (Needham 2015).

Figure 2
Jeff Koons. *Balloon Dog,* 1994-2000. Mirror-polished stainless steel with transparent color coating. Courtesy Palazzo Strozzi. Photograph by Ela Bialkowska.

Koons then describes how Dr. Kandel's explanation of the historical context of the beholder's share helped him to put what he has been doing for years in the art-historical frame. Later in 2017, he was selected as the first Artist-in-Residence at Columbia University's Mortimer B. Zuckerman Mind Brain Behavior Institute. Dr. Kandel who also is the co-director of the Zuckerman Institute explained the goal of inviting Koons as the first Artist-in-Residence was making a bridge between brain science and art. There Jeff could explore the science of the brain and mind and have scientists visiting his studio and exchanging ideas with him. All these experiences helped him to understand how the brain perceives, engages and reacts to works of art (Zuckerman Institute 2017).

Figure 3
Jeff Koons. *Gazing Balls (Apollo Lykeios)*, 2013. Plaster and glass. Courtesy Palazzo Strozzi. Photograph by Ela Bialkowska.

Jeff Koons' works link art to science, kitsch to academic, art history to pop culture and tradition to contemporary. Just like his art, the exhibition of his works in Florence, the cradle of the Renaissance, creates an encounter between the old and the new, past and present, and historical and contemporary. It ignites a dialogue between one of the most celebrated and controversial artists of our time: Jeff Koons, and one of the greatest masters of the Renaissance: Michelangelo, between two of the most famous statues of all times: *David* (1501-1504) and *Rabbit* (1986).

For more information on this event, please visit: https://www.palazzostrozzi.org/en/archivio/exhibitions/jeff-koons-shine/.

References

2017. "Artist Jeff Koons to Join Columbia's Neuroscience Institute as First Artist-in-Residence." Zuckerman Institute. Accessed December 27, 2021. https://zuckermaninstitute.columbia.edu/artist-jeff-koons-join-columbias-neuroscience-institute-first-artist-residence.

2017. "Lecture - Koons, Temkin and Kandel: An Artist's Creative Process in Action," Columbia University. Accessed December 27, 2021. https://www.youtube.com/watch?v=JpDdIFW4MEs.

2021. "Koons, Jeff, Biography – Summary." Jeffkoons.com. Accessed December 27, 2021. http://www.jeffkoons.com/biography-summary.

2021. "*Rabbit* by Jeff Koons – A Chance to Own the Controversy." Christie's. Accessed December 27, 2021. https://www.christies.com/features/Jeff-Koons-Rabbit-Own-the-controversy-9804-3.aspx.

Kandel, Eric R. 2013. "What the Brain Can Tell Us About Art." *The New York Times*. Accessed December 27, 2021. https://www.nytimes.com/2013/04/14/opinion/sunday/what-the-brain-can-tell-us-about-art.html.

Needham, Alex. 2015. "Jeff Koons on His Gazing Ball Paintings: It's Not About Copying," *The Guardian*. Accessed December 27, 2021. https://www.theguardian.com/artanddesign/2015/nov/09/jeff-koons-gazing-ball-paintings-its-not-about-copying .

GRACIELA FAVELUKES
Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) / Universidad de Buenos Aires (UBA), Argentina

*Voyages of a 17th-Century Map of Buenos Aires: From Spies and Sailors to Printers and Scholars**

In 1660, Barthélemy de Massiac,[i] a French *gentilhomme* and military engineer at the service of the Portuguese crown, took a journey from Angola on a ship that carried goods and enslaved Africans to trade in Buenos Aires and Brazil, with plans to later return to Portugal. The trip ended badly. Not only was foreign trade then forbidden in Buenos Aires, but on its arrival, Massiac's ship fell victim to an act of piracy by a Dutch ship and lost its merchandise. Being an unauthorized foreigner, he was imprisoned and subjected to trial. After two years of confinement, he managed to secure a trip to Spain where he was finally released. As a result of his stay, he envisaged a plan for the French to take over the Río de la Plata, an advantageous point of entry to the wealth of Potosí (presented in the coming pages), of which he later drew three maps: one of the fort of Buenos Aires (not found), one of the layout of the city, and another of its surroundings (both extant in manuscript). The city map was the only one to outlive its original purpose; in fact, it was copied and reissued several times in different places and contexts.

Alfredo Taullard published the first collection of historical maps of the city of Buenos Aires in 1940. On the book cover, Taullard (1940) presented a silhouette of the federal district of Buenos Aires, comprising inside it the map of study, thus denoting the book's timespan (figure 1), which presented 54 maps from the Spanish foundation of the city in 1580 to its federalization as the capital city of Argentina in 1880. Taullard believed the map he reproduced was from the 1750s, as it had appeared in the *Histoire de Paraguay* by the Jesuit father Pedro de Charlevoix, which was published in Paris in 1756. In the decades prior to Taullard's book, students and antiquaries such as Della Paolera (1936) and Furlong (1936), had discussed whether this map portrayed the city at the time of Charlevoix's publication, or whether it reflected a prior situation, and had, thus, been accomplished before. A Dutch view of Buenos Aires from 1628, or the visit in the region of Jesuit priest Joseph Quiroga in 1745, were proposed as potential dates or circumstances behind the creation of the map. Taullard favoured the attribution to Charlevoix.

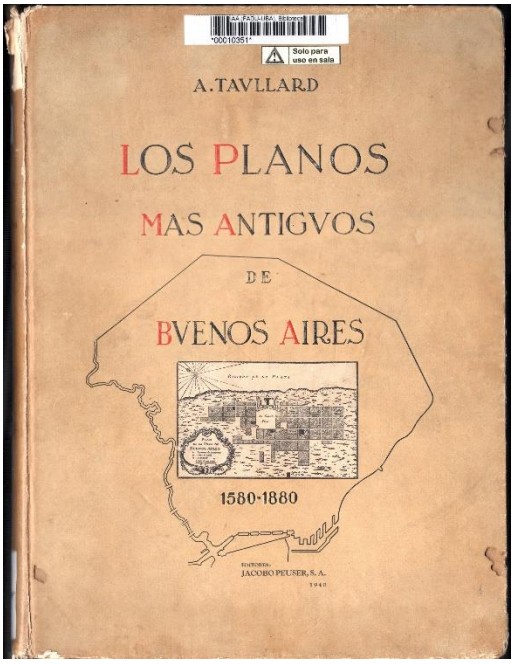

Figure 1
Front cover of Alfredo Taullard's *Los planos más antiguos de Buenos Aires*, Buenos Aires: Peuser, 1940.

Its origins were fully traced when Maud de Ridder de Zemborain (1999) published the results of her research in Argentinian, Portuguese, and French archives, making a fairly complete portrait of Massiac's life and plans available to the public. Only then it became certain that the author of the map had been the Seigneur de Sainte-Colombe on behalf of his brother, Barthélemy de Massiac. Based on the observations made by Barthélemy during his compulsory stay in the city between 1660 and 1662, the brothers wrote and submitted a memoir to minister Colberts's brother. At Colbert's request for further information, the said map was drawn in 1669.

This paper follows the wide, long, and rich life span of this city map of Buenos Aires and its changing settings by tracing the many copies, editions, formats, and supports in which it circulated among diverse audiences over three centuries. While the scope is narrow, it can also be considered wide since we follow the lives of one map; or rather the lives of an urban layout as drawn first in the 17th century, and its reiterations along a broad time span and across changing places and interests, as it passed from being a secret manuscript to public display, as it became interwoven in warfare, map making, politics, and scholarship.

In this sense, this is not about maps in the making, but about maps on the move. For as interesting it may be, the saga of this map is also relevant when considered from the perspective of circulation or motion, a key notion in current theoretical and methodological trends in the humanities as well as in social theory (Rodgers, Raman, and Reimitz 2014). Following Lauren Beck in the call for this issue, the study of maps as they move, or as things-in-motion in the methodological terms suggested by Appadurai (1986), can improve our understanding of their social lives, or, as Kopytoff (1986) presented in the same book, their cultural biographies, their histories of exchange and value, their appearances, and disappearances. This stress in motion has been reformulated under the methodological lens on itineraries, that perhaps is better suited for the things-objects that move and perform and offer an alternative to the notion of object biographies (Joyce and Gillespie 2015, 3–20). Here I use more loosely the term journeys, in an attempt to retain and stress the often-contingent character of the circulation or flow of maps and their historical consideration.

A related perspective focuses on flows of ideas, or, in a more materialistic optic, books, written works, and images as part

of the social formation of intellectual and academic fields (Bourdieu 1989; Topalov 2001; Chartier 2016, 2021). Maps, as texts and artifacts, also move in space and time, are exchanged, copied, stored, displayed, studied, looked upon, talked, and written about. In these journeys, they assemble with other things and people; they transform and perform (Brückner 2011, 147). Tracking their paths and stops makes it possible to identify or at least conjecture their agency, and their effects in the course of deeds and actions. In this sense, maps are not inert and at hand. They are perhaps, as Hodder has stated, points of intersection, entanglements among things, social practices and changing epistemologies or ways of knowing that engage with maps (Hodder 2012, 12–13). Among the effects of the map and of mapping practices, as we will see, an arena of debates takes place that plays an important role in the legitimization of professions and academic fields. This study seeks to reposition and reassess their agency in modern history, as well as to a reflexive historicism of some of the many professions of the map.

I intend to address these issues by tracing the many copies and printings of this Buenos Aires map and its consequent storing, circulating, archiving, printing, and studying that help to acknowledge the persistence, as well as the mutability of maps in shifting scenarios and readership. It is worth going over them once more as the permanency of the 1669 image sheds light on the lives of maps through the most varied circumstances. How do maps travel? What are the effects of their journeys? More specifically, how can we trace the 1669 map's persistence? What paths did it travel since its first manuscript? What alterations did it go through? What questions did it provoke, and what actions did it trigger? As we shall see, the long life of this map had a peculiar geography as it was reproduced in different versions in Europe and only became public, and therefore noticeable to Spain and Buenos Aires, after it was published in print in 1756. Astonishingly, this map persisted for another two centuries as a puzzling, misdated and confusing testimony of a city that had been, in fact, much larger at the time when it was published and entered the savant circles (Favelukes 2021, 182-99).

As this article will show, the manuscript drawing and the secret plan that resulted from Massiac's stay were taken into consideration by French authorities. As it passed to printed books, the map became a display of an imprecise, almost anachronistic geographical present, and afterwards it transformed into a testimony of an uncertain past open to critical consideration and became the object of systematic historical and urban inquiry. Along these journeys, the Massiac brothers' map shaped the non-Spanish imagination of a city that soon outgrew the 1669 layout. In this sense, its journeys, rather than pointing at a state of knowledge about a certain city at a certain time, point out its circulation and its fortune among political, military, scholarly, and publishing circles, regardless of its degree of resemblance to the actual state of the city it purported to show.

A secret plan, the archives, the copies: 1660-1669-1693-1734.

As mentioned before, Barthélemy de Massiac, after serving in Angola for eight years, set off on his journey back to Lisbon in 1660 on a Dutch trading ship carrying goods to Buenos Aires[ii] (this synthesis is based on Ridder de Zemborain

1999.) After being imprisoned, he remained confined in the city for two years and was then sent to Spain for trial. Once in Madrid, and still as a prisoner, Massiac met with his brother, Pierre de Sainte-Colombe. Based on the observations made by Barthélemy, they secretly wrote a memoir which Sainte-Colombe sent to the rising Intendent of Finances, Jean-Baptiste Colbert, in 1664, presenting a plan to seize the city and the Río de la Plata region. In the accompanying letter to Colbert, Pierre assured that he and his brother could give further information and provide the "measures of the plan of Buenos Aires, with the indication of the place where landing should take place in order to ensure its success" (Massiac 1664 in de Ridder 1999, 150). It was believed that a navigable river connection existed between Buenos Aires and the wealthy mines of Potosí – the ultimate goal of trade. According to the plan, either a military conquest or the establishment of a French settlement across the coast of Buenos Aires would secure the desired connection and exalt France and its king.[iii]

The manuscript reached Colbert, who had recently established the *Compagnie française des Indes occidentales*. Showing interest in the idea, he sent Sainte-Colombe a list with thirty-six questions about the region and city.[iv] As the paleographer who transcribed the document in 1933 stated, Barthélemy wrote his answers in a disarrayed manner, using the margins of the paper, and added a long commentary in the final pages to support his plan and to justify the entitlement of France to take these lands (Roussier 1933, 220).[v] In 1669, after being appointed Head of the Marine Department of France, Colbert requested further information and commanded Sainte-Colombe to draw a map of the city and of the Río de la Plata. Pierre drew three maps – of the fort, of the city, and of its surroundings – based on his brother's account and sketches. The latter two are currently kept in the *Salle des Cartes* of the Bibliothèque nationale de France (BnF) as part of a folder pertaining to the Hydrographic Service of the Marine. The collection contains 69 maps related to the city of Buenos Aires and its surroundings before 1801.[vi] Colbert archived the memoir and the answers to the questionnaire in a folder containing several documents related to the Río de la Plata, currently in the archives of the Minister of the Colonies. The maps then, at least the two surviving ones, became estranged from the written documents (it is unknown as to how and when) and the map of the city took a path of its own,[vii] and, as previously mentioned, was only recently put in relation again to the memoir.

The city layout is drawn in black ink and grey colouring on a thick 38 x 53 cm sheet of paper (figure 2). The title, scale, author, date of the map, as well as the list of numerical references of noteworthy buildings and locations are presented in two cartouches skillfully adorned with festoons and drapery, and frilled lettering.[viii] The ornaments encircle the topographic drawing, that is indeed the first known scaled map of Buenos Aires after its foundation in 1580.[ix] The depiction by Massiac is fairly consistent with the foundational disposition of the residential lots and religious buildings, which, as explained earlier, were to occupy 42 of the 141 blocks of the *traza*, but ignores the periphery of orchards that he had mentioned in his answers to Colbert's questions. According to the topographic drawing, his map shows several square and fully occupied blocks, as well as some

rectangular, smaller ones that may be interpreted as partially built blocks, a feature that was later seen as confusing by historians since the square block finally became identified as an essential characteristic of the urban fabric of Buenos Aires. The most detailed figure is, according to military interest, the fort, described in the answers as weak and easy to take, with its walls, corps de guard rooms, and chapel.

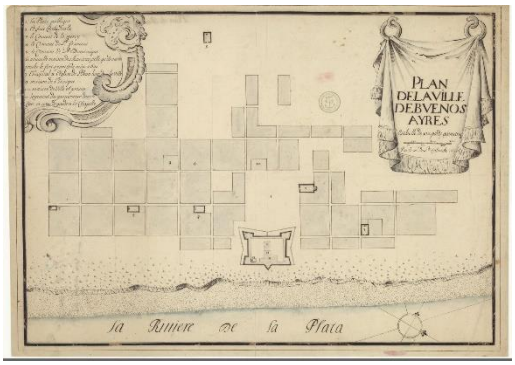

Figure 2
***Plan de la ville de Buenos Ayres / par le Sr. de Ste. Colombe*. 1669. Manuscript, ink and watercolor on paper, 38 x 53 cm. Bibliothèque nationale de France, Maps and Plans Department, GE SH 18 PF 167 DIV 6 P 2 D [Division 6 of Portfolio 167 of the Naval Hydrographic Service dedicated to the city and surroundings of Buenos Aires and Martin Garcia Island]; 2 D. http://catalogue.bnf.fr/ark:/12148/cb44251067x.**

Afterwards, the map seems to have been lost or misplaced and interest in the region diminished. But worries about European wars and crop shortages revived French interest. The Minister of the Navy, Pontchartrain, wrote to Massiac in 1693 requesting copies of both the report and the maps. Massiac replied he had not kept any, and that a copy should be requested from Mariscal d'Estreé. In his requirement letter to the Chancellor, the Minister stated that "I would be satisfied enough to learn the prowess and weakness of the enemy colony" (Pontchartrain 1693 in de Ridder 1999, 184). That is, thirty years after Massiac's stay in Buenos Aires, the French government still had barely any knowledge of the Plata region, and France was once again interested in it. This was not unusual; on the contrary, the circulation of images and maps of Spanish American towns was rare, and limited to few outstanding cases, such as Mexico City, Lima, Cuzco and Potosí, and a few city ports presented in atlases and books with long outdated images that frequently froze urban reality, as Kagan (2001, 72–73) has shown. The urban situation of the vast majority of towns and settlements remained almost completely unknown to the European public.

The original drawing must have been found later on, because another manuscript copy, coloured in this case, is kept in the same binder of the marine service (figure 3). At the bottom right corner, along the margin, it says "Lemoine fecit," a signature used by the cartographer acting as Jacques-Nicolas Bellin's right hand at the *Depot de Cartes*.[x] There appears no indication of the time of production on the sheet, but a note in old inventories date it to 1734.[xi] It is a drawing on thick paper, cardboard-like, and is the same size as Massiac's map (36 x 51 cm, on a 49.5 x 66.5 cm sheet).

Even though the drawing is undoubtedly a copy of the previous one, some minor differences point to a substantially different production context, that of the emergent state administration. The most noticeable variation is the map's bearing,

which has been turned 180º. As a result, the shores of the Río de la Plata appear at the top of the sheet. Besides that, Lemoine's drawing, despite being watercoloured, is displayed within a very austere frame, and decorations are completely absent. The graphic scale is located at the top border. The list of references disappears, and the names of buildings and notorious places appear in the form of written legends inside the drawing itself, in an understated small font, plain, lowercase hand lettering. The title is the same as in the first map, that is, "*Plan de la ville de Buenos Aires*," written in uppercase in the emptiest area of the sheet, with no frame or adornment of any kind.

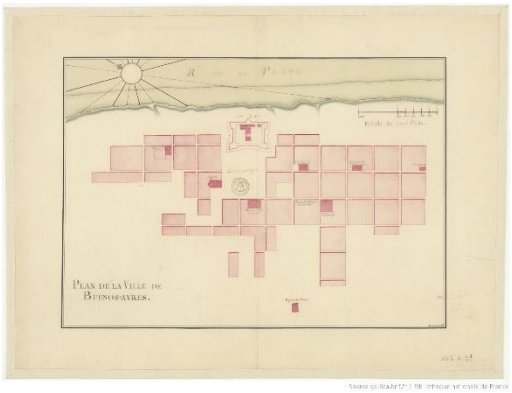

Figure 3
***Plan de la ville de Buenos-Ayres / Lemoine fecit*, 1734. Manuscript, watercolor on paper, 36 x 51 cm, on a sheet 49.5 x 66.5 cm. Bibliothèque nationale de France, Maps and Plans Department, GE SH 18 PF 167 DIV 6 P 2/1 D [Division 6 of Portfolio 167 of the Naval Hydrographic Service dedicated to the city and surroundings of Buenos Aires and Martin Garcia Island]; 2/1 D. http://catalogue.bnf.fr/ark:/12148/cb44251067x.**

Although there are no indications of the purposes that the copy would serve, the image and its traits hint at the procedures of modernizing administrative work: the drawing provides information solely on the topic of the title and casts a veil around – and rationalizes – its context of production. Behind this austerity and understatement lay the ideals of the emerging bureaucracy that was forming at the time: the administrators, the navy, the army, the king's corps of engineers and geographers, and most importantly, their archives, such as the *Dépôt de la Guerre*, created in 1688.

By 1734, two manuscript exemplars existed: the first drawing issued by the Massiac brothers in the context of their proposal to seize the Río de la Plata, which was carefully considered by the highest levels of the French government, and the copy made by the military engineer and cartographer Lemoine as part of his duties in the cartographic archive. Both carried secret knowledge that was key to the ultimately unfulfilled plans of expanding the French domain to South America.

Of books and prints, of geographers and militaries: 1754-1756-1758-1764

When Lemoine was copying Massiac's map, Jacques Nicolas Bellin (1703-1772) was already working as a cartographer.[xii] In 1744, Bellin authored the maps for the *Histoire et description générale de la Nouvelle France*, published by the Jesuit priest Pierre-Francois-Xavier de Charlevoix (1682-1761) after his journey between the years of 1720 and 1722 through the domains of France in North America (Charlevoix, 1744). The 32 books appeared in 2 volumes with abundant illustrations, particularly of the plant species he identified. The book also included *Carte de l'Amerique Septentrionale*, *Carte de La Louisiane, cours de Mississippi et país*

voisins, as well as 18 maps of sectors, bays, ports, and settlements[xiii], all signed by Bellin.

Ensuing his ambitious project of a History of the New World, which he did not get to complete, Charlevoix published his *Histoire du Paraguay* in 1757, where he also included maps authored by Bellin.[xiv] In this book, however, images were scarce: only seven maps were included, two of them in the first volume. First, a folded map of South America appeared facing the title page; second, the map of Buenos Aires (copied from Massiac's) was bound opposite to page 267, where the text presented a transcription of a letter to the king of Spain dated 1730 by the bishop of Buenos Aires. What little information about the city the book contained was related to the description of the area by another Jesuit father, Cayetano Cattaneo, who travelled in the region in those years (Cattaneo 1729).

Although scarce, the maps in the book by Charlevoix are given a special section at the beginning of the first volume, authored by Bellin himself.[xv] There, the cartographer presents a "warning" of nearly three pages where he explains how the included maps were prepared, especially those of Paraguay, Río de La Plata, Puerto Deseado, and Puerto San Julian, as well as the document sources he resorted to. He emphasizes the difficulties of obtaining comprehensive and updated information on a region which, he claims, remains little known to Europeans. In the face of such reality, he warns the reader that the maps are only included for illustrative purposes and to accompany the text, and that more appropriate maps should be developed over time. Having made these cautionary remarks on the other six maps, Bellin chose not to explain the origin of the map of Buenos Aires he reproduced and gave no information about its date or authorship.

Following Bellin's warning pages there is a "Note to the binder" indicating where each map should be located inside the volumes. This note gives a key that helps to understand the incorporation of maps into codex books, a process analyzed by Verdier (2015). The task was no small feat, since adapting maps to the size and ways of manipulation and use of books, especially in the case of maps way larger than the books that contained them, required the invention of different systems for binding, sewing, and folding.

Using the same orientation as in Lemoine's copy, the urban layout is laid horizontally on the sheet, with the top to the East, and bound to the book by its shortest side, facing page 267. Despite the fact that it is downsized from the original, the drawing itself does not present noticeable changes, and this can be attributed to its abstract features and to the scarce amount of information it presents. Only the names of the constructions within the fort have moved out from the drawing and appear inside the ornamented frame at the bottom left corner, a decision consistent with the reduction in size, and the consequent lack of space for those names in the drawing. The printed sheet with the city map (275 x 180 mm) is somewhat larger than the book pages, so it appears folded[xvi] (figure 4).

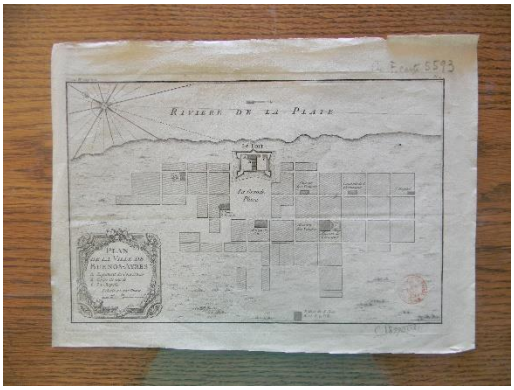

Figure 4
***Plan de la ville de Buenos-Ayres* (for P. F. X. de Charlevoix, 1756), Jacques-Nicolas Bellin, 1754. Bibliothèque nationale de France, Maps and Plans Department, GE FF- 8487 (2) http://catalogue.bnf.fr/ark:/12148/cb40755066v/PUBLIC.**

At the request of the Ministre et Secrétaire d'Etat de la Guerre et de là Marine, Bellin published *Le petit atlas maritime, recueil de cartes et plans des quatre parties du monde* in 1764, a grand work in five volumes. It contained the bulk of the maps and plans held at the *Depot des Cartes et Plans de la Marine*, necessary as a complement to the maritime charts issued by the Depot. This printed collection was intended to aid seafarers, showing shores, bays, islands, and port cities not included in the charts.[xvii] In the second volume, sheet 59, right after a map of the Río de La Plata (that had not been available to Bellin 10 years earlier), appears the map of Buenos Aires first drawn by Massiac and later copied by Lemoine. In this engraved version, the city layout was turned ninety degrees to the right, with the top side northbound. The drawing is the same and is accompanied by a decorated cartouche containing the title at the left top corner and a list of references, similar to that of 1754, at the bottom left corner. The image has been downsized again to 24 x 20 cm, the same dimension as the book, and bound by the long side of the page (figure 5).

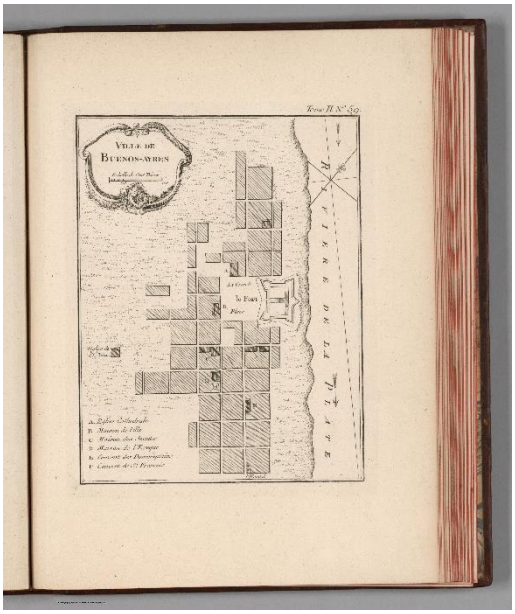

Figure 5
***Ville de Buenos-Ayres,* Jacques-Nicolas Bellin, 1764. Engraved, 24 x 20 cm. In: *Le Petit atlas maritime par J.N. Bellin*, Paris, Tome II, No. 59, 1764. Bibliothèque nationale de France, Maps and Plans Department, IFN-5906091 http://catalogue.bnf.fr/ark:/12148/cb40619209j/PUBLIC.**

A few decades later, the map again leaves the books and goes back to stand alone sheets. It appears as an insert within a map of the Río de La Plata, of which two versions are known. One of them contains an ornamented cartouche, indicating Thomas Kitchin (1718-1784) as the author, who was then general hydrographer to the King of England (figure 6). There is no indication of its date, but Taullard (1940, 43), following historian Juan María Gutiérrez, suggested the year

1783. This is mainly a nautical chart focusing on navigation indications, such as depth, bottom features, dominating winds and currents, alongside shore information. There exists another, more sober version, with a title on the top, but without a date or author: *A Chart of Río de la Plata compiled from the Spanish, French, and Dutch Draughts* containing profuse explanations scattered on the surface of the map (32 x 50 cm, figure 7).[xviii]

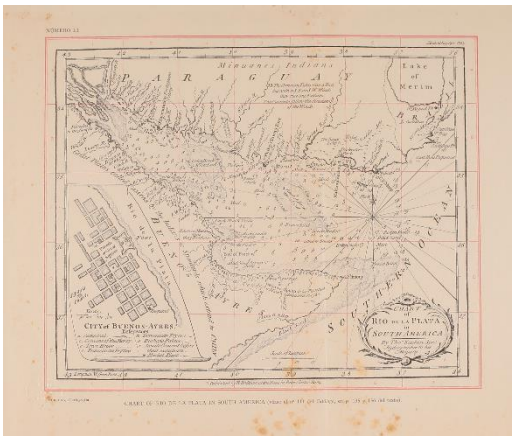

Figure 6
***Chart of Río de la Plata in South America by Th.s Kitchin Sen.r Hydrographer to His Majesty*, Thomas Kitchin, ca. 1783.**

Figure 7
***A Chart of Río de la Plata compiled from the Spanish, French, and Dutch Draughts*, Anonymous, without date. 32 x 49.5 cm. At the left bottom in an insert: "Plan of the city of Buenos-Ayres." Notes on the reverse: "Rivière de la Plata et plan de Buenos-Ayres. M. Le Ch[evali]er de Fleurieu]." Bibliothèque nationale de France, GE SH 18 PF 167 DIV 2 P 29 D. http://catalogue.bnf.fr/ark:/12148/cb442488292/PUBLIC.**

In both versions, at the bottom left corner, Massiac's map appears south of Buenos Aires, superimposed over an area mostly unpopulated referred to as "the pampas." Once again, the drawing concerning the city layout remains invariable. The references appear in a simple legend at the foot of the silhouette. In Kitchin's coloured version, the map appears to be drawn on a curving scroll as if laid upon the surface of the main map, an optical trait very fashionable during the final decades of the 18th century (Weimer 2017). In the other version, engraved in black ink, the cut-out of the city map is even more abstract, simply added to the surface, with the title located on its top and the references at the bottom. These sheets ensembled the two maps that Bellin had published separately in his Atlas. And the map of the city that had remained a well-kept secret became available to the wider public eye. The layout showed an urban situation that was, by then, almost a century old and had become highly outdated. In fact, Buenos Aires had become the capital of the Viceroyalty of the Río de la Plata (1776), its population was reaching 25,000 people, and the built area covered a surface of approximately 120 blocks, three times more than when Massiac knew it. But the anachronism of the image must have appeared acceptable to the mapmakers or at least preferable to the otherwise lack of

information about the disposition of the city.

Moving from manuscript to print, the layout entered a new manufacturing context, that of the printing and engraving shop. The operations and roles involved in its fabrication expand greatly, adding to the surveyor and draughtsman (Massiac), the engraver[xix], the printer, the bookbinder, and the bookseller, all working along metal and paper sheets, leather, engraving tools, ink, types, and printing presses. Printing also expanded the number of copies that entered the book and map markets to the point that only in rare cases can a copy be traced along its paths from printshop to private consumers and public archives and libraries.

From a timeless geography to an uncertain past

The copies previously discussed attest to the long-standing French and English interest in the Plata region which, as Massiac and other travellers had noticed, was a pathway into the riches of the southern lands of Spanish America. Military conquest of the region had been, in fact, discussed more than once in the context of the clashes between England and Spain throughout the 18th century. Lastly, when the naval operations of the Napoleonic wars reached the Southern Atlantic, the way was paved to attempt such conquest.

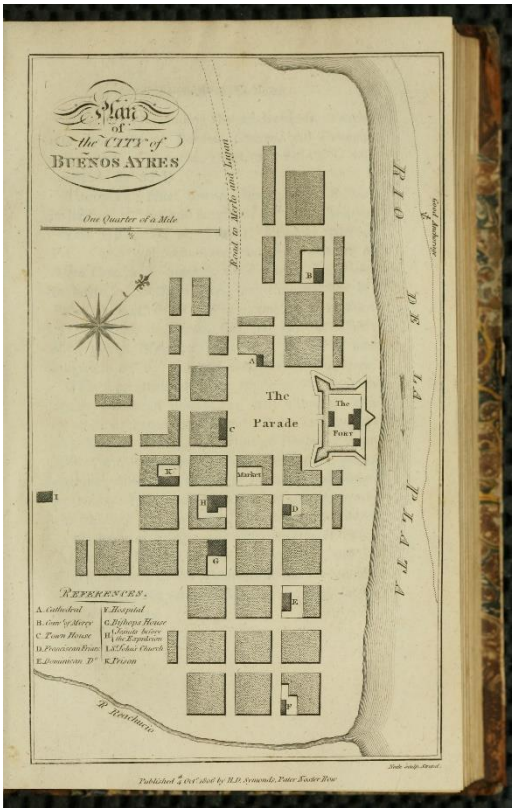

Figure 8
***Plan of the city of Buenos Aires*, in Wilcocke, Samuel Hull. 1807. *History of the Viceroyalty of Buenos Ayres, etc.*, London. Facing page 58.**

In 1806, a British armed force that sailed from the Southern shores of Africa landed south of the city and, within a few days, seized control of Buenos Aires. The commander in chief, General William Beresford, took office as the governor in the name of the Crown. The spoils of the attack – which were substantial – were sent to England, and stirred the enthusiasm of the British public, particularly that of traders, at the conquest of a potentially new colony in South America.

Inspired by such interest, a book on the history of the region was quickly put together and published in London (Wilcocke 1807). Nearly a century and a half

after the first draft of the map, closely following Charlevoix, the book included a new copy of the 1669 map (figure 8). In this case, the layout is very similar to the previous versions by Bellin. The most remarkable differences are the width of streets, notably wider and giving the impression of a less compact town – a feature gradually popularized in travel city maps and guides – and the proximity of the Riachuelo, a river tributary to the Plata that lay farther south from the city, and that here is presented much closer, at the very edge of the built area. Notably, even though the British troops had already disembarked and invaded the city, and had reported their success to the British government, the author of the book failed to obtain a more updated map. In a way, in terms of the cartography circulating among the British general public, this points to a sort of geo-historical impasse.

The invasion failed, and the invaders were rejected a few weeks after the first attempt in 1806. A second one, in 1807, under the command of General John Whitelocke, also failed. The 1808 trial that followed the defeat and return of the troops was followed with interest in England, and the publication of the hearings and testimonies quickly followed in the form of at least five editions of different formats and lengths.[xx] In several of them, drawings or maps of the area of Buenos Aires were included, showing itineraries, battles and skirmishes. This meant, for the first time, the publication of the maps of the city were finally updated. The maps published in the proceedings closely resemble the manuscripts contained in a binder of maps entitled "Manuscript Maps for the South American Campaigns of 1806-7" that were compiled and taken to England by Beresford, and which were more likely examined in court when Whitelocke was tried.[xxi] The 1669 map no longer appeared.

For England, then, the turning point of the mentioned impasse was the trial against Whitelocke in 1808. Concurrently, a year later, another publishing novelty introduced an updated map of Buenos Aires to the French audience and had a wide distribution in Europe. It appeared as part of the work of Félix de Azara, a Spanish seaman and naturalist who had worked in the Río de la Plata mapping the borders with Portugal for twenty years (from 1781 to 1801). Published in Paris in 1809 (Penhos 2002), the book, titled *Voyages dans l'Amérique méridionale,* consisted of four volumes, an atlas and included a contemporary map of Buenos Aires.

At this point, at the beginning of the 19th century, and after the publication of the mentioned works, the 1669 map lost momentum. Shortly afterwards, the revolutionary movement started, which led to the independence of the American territories from Spanish domain and to the creation of new nations that promoted both immigration and cultural exchange with Europe. The strategies deployed to promote those ties included the printing and distribution of updated maps of the city of Buenos Aires among the governments and companies of these countries that, at the same time, offered new maps of the city and the country.

As Europe's interest in the document vanished, the 1669 map changed its nature from geography to history, so to speak. It became clear that it was no longer useful to know the current state of the city, but to inquire about its past, especially among local scholars. During the next century, and mainly due to the lack

of other information, Charlevoix remained the main candidate for the map's authorship, and 1756 was accepted as its production date. In fact, the general assumption was that this was the oldest image available to imagine the old colonial times, that were fading away and getting dimmer as the decades went on, just as historical archives were organized, documents collected, and transcribed, and the country's history undertaken.[xxii]

Between map makers, printers, historians, and urbanists

Mass-production leading to popular use and the engagement and critical scrutiny in savant circles characterize the new involvements with the map starting from the final decades of the 19th century. Rapid city growth required updated street maps for a growing pedestrian market, a business opportunity seized by publishing houses that improved their products' appeal by mixing, normally without precautions, all sorts of present and past imagery. On the other hand, and perhaps induced by the map's massive presence, students and scholars began to ponder its origins. These novel engagements entailed the use of critical procedures and new ways of knowing, as well as the emergence and consolidation of the disciplines of the past and of the map.

As a sort of archetypal image of early times, endowed even with a certain dose of exotism and intrigue,[xxiii] the map appeared in two cartographic publications at the end of the 19th century. First, it was used as an insert in a street map signed by Alphonse Laurent in 1887. It laid superimposed on a sector of the city that was still unoccupied and therefore left enough blank space for the inclusion of the ancient map. These sorts of empty spaces were commonly used in map making to display references or important data; in this case, the blank served to add this allegoric image, possibly as a comparative image useful to appreciate and praise the growth of the city through time. Although in this addendum the urban silhouette keeps the general traits of its predecessors, the adaptation to the available paper space required both a rotation of the drawing to fit into the general orientation of the new map, putting the north on its left side, and a displacement of the ornamented cartouche of the title to the upper part; the reference list, for its part, disappeared. Crucially, neither author nor date are indicated (figure 9).

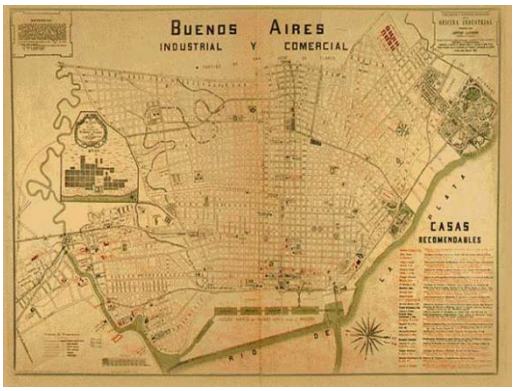

Figure 9
***Buenos Aires industrial y comercial*. Alphonse Laurent, 1890. Coloured lithography, loose sheet, 48 x 35 cm. http://www.biblioteca.fapyd.unr.edu.ar/leaves/archivo/urbanismo/mas-informacion/buenos-aires/planos/plano_laurent_1890.jpg.**

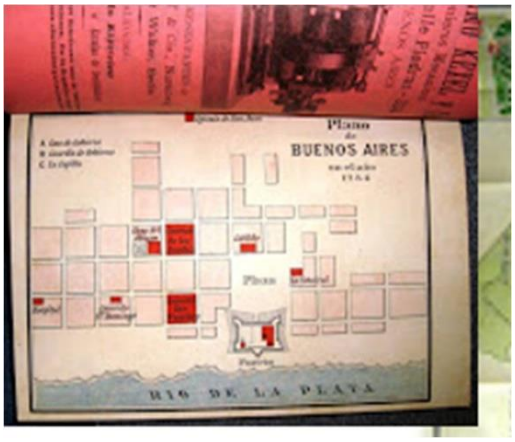

Figure 10
***Plano de Buenos Aires para el año 1756*, in *Guía Callejera para el año 1892*, by Pablo Ludwig. Buenos Aires: Imprenta de Pablo Ludwig.**

A few years later, and perhaps inspired by Laurent's example, the cartographer and prolific map printer, Pablo Ludwig, included Massiac's map in one of the pages of his Buenos Aires street guide that accompanied a large and superb map of the city. The figure, fitted to the size of the page, presents several modifications. Firstly, it is coloured: the river has been shaded with light blue, the city blocks in pink, and the key places – the same that were highlighted in the original – stand out in red. The names of the prominent buildings are inside the drawing, and the only three references located on the upper left side refer to the constructions in the old fortress that, by then, no longer existed. Another important innovation lies in the title itself, which is not only austere and unadorned, but also offers the then agreed-upon date: "Map of Buenos Aires in the year 1756" (figure 10).

This inclusion of images as virtual icons resonates with what I refer to as figurative liberties that became an extended practice in street mapmaking during the second half of the 19th century, improved by printing developments (Favelukes 2020). In these ephemeral maps and guides, current and past images surrounding or accompanying the grid of streets provided, in this case, unforeseen new engagements with the old map that must have amplified popular consumption and imagination about the city's past (one of the key points presented by Brückner 2017) and even perhaps induced enthusiasts and students of the city (who must surely have consumed this popular cartographic product) to pay new attention to it.

The consensus that dated the map around the mid-18th century held in the savant circles. It appeared in several documents issued by official agencies, as in the historical chapter presenting the city's development for the 1904 Municipal Census and in the chapter dedicated to urban evolution in the 1925 Plan by the *Comisión de Estética Edilicia* (Building Aesthetics Commission; Novick 2021). Undoubtedly, it had become a document of historical value, and as such, it ended up being the object of study and criticism by scholars. In the context of an increasing interest in urban planning, Carlos María Della Paolera, an Argentinian engineer who graduated as an urbanist from the *Institut d'Urbanisme de Paris* in 1928 (Novick 2004, 192), published the first systematic critical study of the map. Based on the historical chapter of his MA thesis, he thoroughly analyzed and compared the map to other documents[xxiv] and especially to demographic calculations, a novel approach that led him to conclude that this map did not correspond to the city in 1756. On the contrary, he stated that the edification shown in it was consistent with both the extension and population that the city must have had in the second

half of the 17th century (Della Paolera 1936, 205).

His conclusion differed completely from that held by Guillermo Furlong,[xxv] a Jesuit and prolific author that, in the same year, and in the context of the celebrations for the fourth centenary of the first foundation of the city by Pedro de Mendoza in 1536, organized an exposition of colonial maps of the Río de la Plata, with a published book and an atlas. There, he included both Massiac's and Kitchin's maps from 1783. He did not question the mid-18th century provenance of the map, but instead offered a new candidate for its authorship. He reasoned that the author could not be either Bellin or Charlevoix, who had never been in the region, but the Jesuit father José Quiroga, who had arrived in Buenos Aires in 1745 and undertook some topographic measurements at the request of the governor. In Furlong's view, it seemed likely that the Jesuit mathematician had supplied the geographical map to Charlevoix.

Three years prior, in 1933, an Americanist historian had found in the archives and published in France the memoir of Massiac and his answers to Colbert's questionnaire (Roussier 1933).[xxvi] A fraction of these answers were reproduced, without any indication about the source or the selection criteria, by Ricardo de Lafuente Machain (1944), who authored several pieces about Buenos Aires' history. In his book dedicated to the 17th century, he included Massiac's map, endorsing the claims Della Paolera had presented in 1936. But, although he included both the 1669 map and the selection of answers from Massiac, Lafuente Machain did not make the connection between both documents.[xxvii]

Up to this point in the mid-20th century, three hypotheses coexisted regarding both date and authorship. Taullard vouched for Charlevoix in 1756, as we already mentioned. Furlong, for his part, favoured Quiroga around 1745. And Della Paolera and Lafuente Machain pronounced themselves for a 17th century origin and unknown authorship. Massiac's map entered here another space, a new entanglement that involved the professions and disciplines of the past, of the map and of the city that were then in the process of gaining academic and social legitimation through associations and lectures, public museums and venues, universities and journals.

As the 20th century closed, a final consensus was achieved. Urban historian Jorge Enrique Hardoy located and identified the 1669 map as the original source for Bellin's engraving and published it in his book on colonial urban cartography in Spanish America that contained a selection of the hundreds of urban maps he had consulted in archives and libraries along his research.[xxviii] Here, Hardoy provided the proper archive record of the map (Hardoy 1991, 117), proving the 17th century hypothesis sustained by Della Paolera in 1936. For her part, in 1999, Maud de Ridder published the results of her research on Massiac's life, and finally managed to establish the connection between the map (or really the two maps), the written documents containing the memoir and plan of conquest, and the description of the city and its surroundings prepared in response to the questionary of minister Colbert.

Conclusion

As we have seen, the voyages of this map were wide and long-lasting. This case

gives a fair record of the circulation of documents, frequently deprived of their production context, as well as their importance in the construction of geographical knowledge, despite the often-implicit anachronism of reusing images that come from other times and places. It is worth noting that at the same time when Charlevoix – oblivious to the map's origin – included Bellin's version of Massiac's map in his 1756 book, Spanish engineers working in Buenos Aires were, in fact, drawing updated maps that depicted a more extensive and complex city than the one presented by the Jesuit author and cartographer Bellin.

As we have seen, the map drawn by Massiac travelled from the sketches of this uninvited guest in Buenos Aires to the drawing desks of engineers and draughtsmen to binders in official archives; from manuscript to printed books, from geography to antiquarianism, from urbanism to history, along copies and changing milieu, often surrounded by suspicions about its trustworthiness. Yet, despite these doubts, it was nevertheless reproduced for a long time – first as an image of the supposed current state of the city, and then as a virtual logotype for early times of which no other maps were known – and still are not. In recent decades, as a result of archive work, the map regained its original status as part of military and political deliberations about seizing these southern territories, thus adding fresh insight to the changing views sustained for a long time about the city.

For, in fact, it can be said that a sort of non-Spanish geographical and, in a way, atemporal image of Buenos Aires – mostly French and English – developed along the 18th century, repeating with more or less conviction the basic features of the map by the Massiac brothers. The ignorance of the current situation of the Río de la Plata transpires clearly in the pursuit of French minister Pontchartrain in 1693 for a map that might shed some light on that distant region. In a similar vein, the rejected invasion by British troops in 1806-1807 illustrates a sort of clash between the outdated map and a very different *in situ* situation that only became accessible to the English public opinion in the wake of General Whitelocke's trial, and to the French public after the publication of the *Voyages* by Felix de Azara.

This paper asked about the journeys of the map loosely applying the notion of object itineraries. As we have shown, Massiac's sketches and notes passed secretly from the Río de la Plata to Spain and Portugal and then to France. The map proper went from Brest to Paris to join Colbert's confidential papers, at some point ended in the archives of the Depot de Cartes to be later kept in the Bibliothèque nationale de France. But then copies were made that multiplicated the map, first manually, then mechanically, in various formats and containers, mainly loose sheets, books, and ephemeral booklets. Today it is ubiquitously digital, popping out through not so clear algorithms in internet searches, still performing and inducing new entanglements.

This long lifespan opposes the common belief that maps, in some sort of way, are meant by definition to become obsolete as territories change in time, as survey protocols are redefined, or even as new print techniques and graphical conventions are developed. Taken from this point of view, the sustained interest in

this map is revealing. Its journeys are testimony to changing involvements and searches, to the reluctant acceptance of inaccuracies, doubts, interest, error tolerance, secrecy, and a bit of a mystery halo that scholars tried to sort out. Along the 20th century the new standards in critical appraisal of maps were also key to the consolidation of the modern professions of the map and its pasts, such as history and urbanism.

Although remarkable, the phases of this plan for Buenos Aires are not exceptional. On the contrary, this sort of winding path is characteristic of material and cultural objects, since maps, too, travel without their context of production, eliciting questions and engagements along their journeys. The various appearances and collapses of this map, and the very fact that once again it calls our attention, that we engage with it, points at the seemingly endless social life of maps, that unfolds along copies, iterations, adaptations, and reappraisals.

References

Appadurai, Arjun. 1986. *The Social Life of Things: Commodities in Cultural Perspective.* Cambridge University Press.

Azara, Félix de. 1809. *Voyages dans l'Amérique méridionale depuis 1781 jusqu' en 1801: Accompagnés d'un Atlas de vingt-cinq planches / par Don Félix de Azara, publiés par C. A. Walckenaer, enrichis de notes par G. Cuvier.* 5 vols. Paris: Dentu.

Bourdieu Pierre. 2002. "Les conditions sociales de la circulation internationale des idées." In *Actes de la recherche en sciences sociales* 145: 3-8.

Bellin, Jacques-Nicolas. 1764. *Le petit atlas maritime, recueil de cartes et plans des quatre parties du monde.* En cinq volumes. Paris.

---. 1751. *Recueil des memoires qui ont été publiés avec les cartes hydrographiques, que l'on a dressées au Dépôt des cartes & plans de la Marine, pour le service des vaisseaux du Roi par ordre du Ministere, depuis l'année 1737 jusqu'en 1751. Par le sieur Bellin ingénieur ordinaire de la Marine.*

Brückner, Martin. 2011. "The Ambulatory Map. Commodity, Mobility, and Visualcy in Eighteenth-Century Colonial America." *Winterthur Portfolio* 45 (2/3): 141–60.

---. 2017. *The Social Life of Maps in America, 1750-1860.* Williamsburg, VI and Chapel Hill: Omohundro Institute of Early American History and Culture and University of North Carolina Press.

Cattaneo, Cayetano. *Buenos Aires y Córdoba en 1729 según cartas de los padres C. Cattaneo y C. Gervasoni.* Edited by Mario J. Buschiazzo. Buenos Aires: Compañía de Editoriales y Publicaciones Asociadas, 1941.

Charlevoix, François-Xavier de. 1744. *Histoire et description générale de la Nouvelle France. T. 1 / avec le Journal historique d'un voyage fait par ordre du roi dans l'Amérique septentrionale. Par le P. de Charlevoix.* Tome premier. A Paris, chez Pierre-François Giffart, ruë Saint Jacques, à Sainte Thérèse.

---. 1756. *Histoire du Paraguay par le P. François-Xavier de Charlevoix, de la Compagnie de Jesus.* 3 vols. A Paris: Desaint, rue S. Jean-de-Beauvais, vis-à-vis du College.

Chartier, Roger. 2021. "La cultura gráfica. Texto e imagen. Conversación con Roger Chartier." Video conference for the Center for Art and Patrimony Research, Universidad Nacional de San Martín, Buenos Aires, Argentina. https://youtu.be/lyT_txamp9M.

---. 2016. *La mano del autor y el espíritu del impresor: Siglos XVI-XVIII*. Buenos Aires: Katz-Eudeba.

Della Paolera, Carlos María. 1936. "Como se formó Buenos Aires." *Revista de Arquitectura* XXII, 108: 201–10.

Difrieri, Horacio. 1981. *Buenos Aires: Geohistoria de una metrópoli*. Buenos Aires: Universidad de Buenos Aires.

Du Biscay, Acarette. c. 1662. *Relación de un viaje al Río de la Plata y de allí por tierra al Perú con observaciones sobre los habitantes, sean indios o españoles, las ciudades, el comercio, la fertilidad y las riquezas de esta parte de América*. Translated by Francisco Fernández Wallace. Preface and notes by Julio César González. 1943. Buenos Aires: Alfer & Vays.

Favelukes, Graciela. 2021. *El plano de la ciudad. Formas y culturas técnicas en la modernización temprana de Buenos Aires (1750-1870)*. Buenos Aires: Universidad de Buenos Aires-Serie de tesis del IAA. http://www.iaa.fadu.uba.ar/omp/index.php/iaa/catalog/book/tesis10.

González, Julio César. 1943. Preface and notes to *Relación de un viaje al Río de la Plata y de allí por tierra al Perú con observaciones sobre los habitantes, sean indios o españoles, las ciudades, el comercio, la fertilidad y las riquezas de esta parte de América*. Translated and edited by Francisco Fernández Wallace, 6-25. Buenos Aires: Alfer & Vays.

Hardoy, Jorge Enrique. 1991. *Cartografía Urbana Colonial de América Latina y El Caribe*. Buenos Aires: Grupo Editor Latinoamericano IIED - América Latina.

Hodder, Ian. 2012. *Entangled. An Archaeology of the Relationships between Humans and Things*. Oxford: Wiley-Blackwell.

Joyce, Rosemary A., and Susan D. Gillespie. 2015. "Making Things out of Objects That Move." In *Things in Motion: Object Itineraries in Anthropological Practice*, edited by Rosemary A. Joyce, 3–20. Santa Fe: School for Advanced Research Press.

Kopytoff, Igor. 1986. "The Cultural Biography of Things: Commoditization as Process". In *The Social Life of Things: Commodities in Cultural Perspective*, edited by Arjun Appadurai, 64–92. Cambridge: Cambridge University Press.

Lafuente Machain, Ricardo. 1944. *Buenos Aires en el siglo XVII*. Buenos Aires: Emecé.

Massiac, Barthélemy de. 1664. "Memoria acerca del establecimiento de una colonia en Buenos Aires o sobre la costa opuesta del Río de la Plata. Por el señor de Sainte-Colombe." In Ridder de Zemborain, 1999. *Plan francés de conquista de Buenos Aires 1660-1693*. Buenos Aires: Emecé: 61-87.

Molina, Ricardo. 1955. "Primeras crónicas de Buenos Aires. Las dos memorias inéditas de los hermanos Massiac 1660-1662." *Revista Historia* 1 (1): 89-133.

Moreno Jeria, Rodrigo. 2018. "El mapa de Chile y el plano de Santiago en la obra atribuida a Juan Ignacio Molina de

1776: los manuscritos perdidos." *Revista de Geografía Norte Grande* 69: 33-47.

Novick, Alicia. 2021. *Pensar y construir la ciudad moderna. Planes y proyectos para Buenos Aires 1900-1940*. Buenos Aires: UBA-Serie de Tesis del IAA.

---. 2004. "Della Paolera, Carlos María," in *Diccionario de Arquitectura en Argentina*, edited by Jorge Francisco Liernur y Fernando Aliata. Buenos Aires: AGEA, vol. c/d, 192-93.

Penhos, Martha, 2002. "De la experiencia vivida a la edición. Textos e imágenes en la primera edición de Viajes por la América Meridional de Félix de Azara." In *1º Encuentro "Las metáforas del viaje y sus imágenes. La literatura de viajeros como problema." Red Internacional de Estudios sobre Sociedad, Naturaleza y Desarrollo.* Rosario, Argentina.

Pontchartrain, Louis Phélypeaux de. 1693. "Despacho del ministro Pontchartrain al mariscal d'Estré´, Versalles 5 de agosto de 1693." In Ridder de Zemborain, 1999. *Plan francés de conquista de Buenos Aires 1660-1693*. Buenos Aires: Emecé. 184.

Ridder de Zemborain, Maud. 1999. Introduction to "Memoria acerca del establecimiento de una colonia en Buenos Aires o sobre la costa opuesta del Río de la Plata. Por el señor de Sainte-Colombe." In *Plan francés de conquista de Buenos Aires 1660-1693*. 11-58. Buenos Aires: Emecé.

Rodgers, Daniel, Bhavani Raman, and Helmut Reimitz. 2014. *Cultures in Motion*. Princeton, NJ: Princeton University Press.

Roussier, Paul. 1933. "Deux Mémoires Inédits Des Frères Massiac Sur Buenos Ayres En 1660." *Journal de La Société Des Américanistes* 25 (2): 219–49. https://doi.org/10.3406/jsa.1933.1889.

Topalov, Christian. 2001. "Postscriptum. Des Livres et Des Enquêtes: Pour Un Historicisme Réflexif. " In *La Ville Des Sciences Sociales,* edited by Bernard Lepetit and Christian Topalov, 307-13. Paris: Belin.

Taullard, Alfredo. 1940. *Los planos más antiguos de Buenos Aires*. Buenos Aires: Peuser.

Vega, Alejandra. 2012. "La Tabula geographica Regni Chile de Alonso de Ovalle." In Alonso de Ovalle, 1646, *Histórica relación del reino de Chile*, edición facsimilar y estudios. Santiago: El Mercurio/Aguilar, 63-70.

Verdier, Nicolas. 2015. *La Carte avant Les Cartographes. L'Avénement du Régime Cartographique en France au XVIIIe Siècle*. Paris: Publications de la Sorbonne.

Whitelocke, John. 1808. *The trial at Large of Lieut. Gen. Whitelocke, Late Commander in Chief of the Forces in South America, by a General Court Martial, Chelsea Hospital, January 28, 1808, and Continued by Adjournment to March 15. (Taken by Blanchard and Ramsay Short-Hand Writers to the Court and Published from their Notes: with a Correct Copy of the Defence, as Delivered into Court, and the Right Honourable the Judge Advocate's Reply; Also, All the Documents Produced in Evidence)*. London: R. Faulder and Son: B. Lea: Wilkie and Robinson: J. Asperne: Scatcherd & Letterman: J. Bell.

Wilcocke, Samuel Hull. 1807. *History of the Viceroyalty of Buenos Ayres; Containing*

the Most Accurate Details Relative to the Topography, History, Commerce, Population, Government. [Etc. Etc.] of That Valuable Colony. London: H. D. Symonds.

---

[*] A first approach to the topic was published in Spanish under the title "El Plan de la ville de Buenos Ayres, de 1669 a 1783: variaciones sobre un tema", in the proceedings of the 6th *Simposio Iberoamericano de Historia de la Cartografía* (SIAHC): Vega Palma, Alejandra (comp.), *Del mundo al mapa y del mapa al mundo: objetos, escalas e imaginarios del territorio*, Santiago, Universidad de Chile y Pontificia Universidad Católica de Chile, 2017, p. 422-438. https://drive.google.com/file/d/0B-uZO7yZl9D6RGJhX1pjdWE0R0U/view?ts=58f39c8f.

The author wishes to thank the editor and the reviewers for their careful reading and suggestions. Hopefully they helped to straighten the text and give it sharper focus.

[i] Barthélemy de Massiac (Narbonne 1614 - 1700 Brest) had studied military engineering in Lisbon, then served in the war against Spain and then in Angola forma 1751 to 1660. From there he embarked on his trip to America in a Dutch ship.

[ii] Buenos Aires was founded first in 1536 and abandoned in 1541. In 1580 Juan de Garay, coming from Asunción del Paraguay with 300 settlers, made the second and successful foundation. The city layout (*traza*) consisted in a grid of 15 by 9 square blocks, a total of 141, of which 42 nearer to the coast were destined to residential plots, and the rest to orchards. Labour lands were distributed outside the *traza*, along the north and south shores of the river (Favelukes 2021, 74-77).

[iii] Around the same time of Massiac's stay in Buenos Aires, another Frenchman visited the area in two occasions, referred to as M. Acarette. During his second visit he actually met Massiac and they travelled back to Europe together. In the journey, they arranged to present reports to the French government to interest the crown in the region. Acarette presented a memoir of his journey to Potosí to Colbert, who later studied both plans (de Ridder 1999, 37-42, 89-138). Unlike Massiac's memoir that remained unpublished, the text, under the name of Acarette de Biscay, was first published in French in 1672, and in English in 1698 and 1716 (González 1943, 6-25)

[iv] The questions referred to the journey of Massiac and his stay in Buenos Aires, to the situation and disposition of the city and its surroundings, its natural resources, production and population, and to the required means to establish a settlement or to conquest the city (Massiac in de Ridder 1999, 89-138)

[v] All the manuscripts have been kept with minister's Colbert papers in the archives of the *Ministere des Colonies*, where they were found and transcribed in 1933 (Roussier 1933, 221). The text was later translated and published in Spanish, first a selection containing no references to the original source (La Fuente Machain 1944, 195-200) and afterwards complete with a commentary (Molina 1955, 89-133).

[vi] The signature is *Division 6 du portefeuille 167 du Service hydrographique de la marine consacrée à la ville et aux environs de Buenos Aires et à l'île Martin Garcia* 2 D. http://catalogue.bnf.fr/ark:/12148/cb44251139z.

[vii] Although this drawing covers a small extension and has a large scale that could properly be termed as a "plan", I will refer to it as a map, in order to differentiate it from the plan of action conceived by Massiac to establish French rule over the region.

[viii] The other map drawn by Massiac portraying the surroundings of Buenos Aires also presents a decorated cartouche with a profusion of allegoric figures celebrating the French monarchy.

[ix] A schematic layout called the *padrón* showed the 15 x 9 *traza* of square blocks, the Plaza Mayor - not at the center but adjacent to the river coast - and the distribution of lands among religious orders and the first inhabitants of the city. The original *padrón* that was kept in the local Cabildo but was lost during the 18th century. There is a copy at the Archivo de Indias of approximately 1794 that refers to the original of 1583, entitled "Plano que manifiesta el repartimiento de solares que hizo el General Juan de Garay a los fundadores de Buenos Aires. Año 1583" http://pares.mcu.es/ParesBusquedas20/catalogo/description/16785 MP-BUENOS_AIRES,11), digitally available at

http://pares.mcu.es/ParesBusquedas20/catalogo/description/16785

[x] François-Pierre Le Moyne or Lemoine (1713-1795) was a military engineer and cartographer. He first appears in 1737 at the Army's *Dépôt des cartes, plans et journaux* as second to J.N.Bellin, where he continues working until 1792. The BNF keeps records and maps signed by him prior to 1737 (Chapuis 1999, 773).

[xi] *Date d'après la note en deux flles. signalées dans l'inventaire mais qui manquent en place*.

[xii] He served as cartographer at the *Dépôt des Cartes et Plans de la Marine* since 1721, and, in 1741, was appointed *Ingénieur hydrographe de la Marine* (en 1741 ?). Throughout some 50 years of service, he authored a great number of maps and other printed works.

[xiii] Among others, *Plan du Port Royale* and *Plan du Porte de la Haive*, *Plan de la Baye de Chedabouctou*, *Carte de l'Isle Royale*. The name of the engraver is Dheulland.

[xiv] The full title was *Histoire du Paraguay / par le P. Pierre François-Xavier de Charlevoix, de la Compagnie de Jesus*, printed in Paris by François Didot, Pierre-Laurent Giffart, and Jean-Luc Nyon. The book was translated and published in German in 1768, in English in 1769, and in Spanish in 1910.

[xv] "Avertissement sur les cartes géographiques que M. Bellin a dressées pour l'Histoire de Paraguay" (Charlevoix 1756). Bellin's authorship of the Buenos Aires map faded in the translations of the book, and historians attributed it to Charlevoix, as we will see below. The case is not unusual, as shown by Rodrigo Moreno Jeria (2018) through two 18th century maps of Chile and Santiago de Chile. His study sheds light on the slippery character of map authorship, especially those printed in books, where draughtsmen and engravers frequently fade behind the author of the book. In her study of 1646 *Tabula geographica Regni Chile* by Alonso de Ovalle, Alejandra Vega (2012) identified changes and variations according to the printing size of the map.

[xvi] The picture was also included in tome 16, before page 79 of Abbé Prevost's *Histoire générale des voyages, ou Nouvelle collection de toutes les relations de voyages par mer et par terre qui ont été publiées jusqu'à présent dans les différentes langues*, Paris, Didot, 1756

[xvii] On the opening page of volume 1, Bellin dedicates the Atlas to the Minister, Duc de Choiseul. In the previous decades, French authorities had undertaken the improvement of its cartographic production, leading to a critique of contemporary English and Dutch maps, so far highly reputed. An example of this is debated in a leaflet by Bellin (1751).

[xviii] Several maps and nautical charts of the Río de la Plata were made and published in France and England during the second half of the 18th century. So far, these two appear to be the only to include the map of Buenos Aires.

[xix] In the case of the Petit Atlas, the opening pages are signed "Arrivet inv. et Sculp."

[xx] The longest version was the one published from the official shorthand notes (Whitelocke 1808).

[xxi] The binder became part of the collection of the John Carter Brown Library in 1969. An inscription on the back of plate 3 reads "Plan of Buenos Ayres shewing the disposition of the British Troops at the Assault on 5th July 1807 This Plan is reduced from the large Spanish Atlas belonging to General Beresford," available at https://jcb.lunaimaging.com/luna/servlet/detail/JCB~1~1~1754~2660003:Buenos-Ayres-in-the-Rio-de-la-Plata. The maps published with the proceedings are not shown here but are digitally available at Internet Archive.

[xxii] As exemplified by the journals *Revista del Río de la Plata: periódico mensual de Historia y Literatura de América* (1871-1877) and *La Revista de Buenos Aires historia americana, literatura y derecho: periódico destinado a la República Argentina la oriental del Uruguay y la del Paraguay* (1863-1871), as well as the transcription and printing of documents in official collections such as the *Actas del Cabildo de Buenos Aires* from 1889 onwards.

[xxiii] The questions that arose insistently related to the apparent contradiction between the size of the urban area and the testimonies of mid-18th century by several authors and official documents, that mentioned an estimated population that could not have been housed in the limited built surface indicated in the map. Also, it was intriguing that the Plaza Mayor encompassed almost four blocks, when it actually covered only two blocks. These uncertainties cast doubts about the intentions and skills of the author of the plan.

[xxiv] Such as a Dutch painting from 1628, or Acarette du Biscay's 1662 account, as well as the 18th century maps being identified in Spanish archives by Argentinian scholars, in the context of increased documentary research triggered by the celebration of the centenaries of the revolution (1910) and of the city's first foundation (1936).

[xxv] Guillermo Furlong (Argentina, 1889 - 1974), Jesuit and historian, was a prolific researcher in colonial and church history of Spanish America and the Río de la Plata.

[xxvi] Ricardo Molina (1955) translated and published the Massiac brothers' memoir, as well as

their written exchange with minister Colbert, but failed to make the connection between these documents and the maps.

[xxvii] Still in 1981 (Difrieri, 1981, 54–55) the attribution of the authorship to Bellin and Charlevoix, as well as the date of 1756, was a matter of discussion. In this case, following the analysis of the moment of construction of several religious buildings, it was suggested that the map might have been made during the third decade of the 18th century.

[xxviii] Jorge Enrique Hardoy (1926-1993), an architect with a PhD in urban planning, was a key figure in Latin American urban studies and urban history.

CORTNEY BERG
CUNY

Sanudo's Vision, Vesconte's Expertise, and the Ghost Hand: Reception of the Maps in the MS Additional 27376

Written between 1306 and 1321 by a man named Marino Sanudo, the *Book of Secrets of the Faithful of the Cross*, or *Liber Secretorum Fidelium Crucis* in Latin, is a confluence of politics and history set across a backdrop of crusading as a religious imperative.[i] More than twenty extant manuscript copies exist (Tyerman 2013, 129). The MS Additional 27376 in the British Library, thought to date from 1331 (The British Library, n.d.) contains original portolans and maps in the back of the volume as part of the work, and the secondary annotations in the book speak to one aspect of critical reception. In the lengthy volume, Sanudo outlines a plan for a successful crusade to take back the Holy Land, which he wrote following a series of Christian defeats in the thirteenth century (Tyerman 1982, 59). The proposal starts with a plan to blockade Egypt, followed by the logistics of sailing and pragmatic information about keeping the sailors healthy during the invasion. It also contains contextual information, such as the political influences in the Holy Land and the history of Jerusalem. In nine of the twenty extant copies of the *Book of Secrets of the Faithful of the Cross* (henceforth, the *Secreta*), there are portolans and maps, including multiple iterations of a map of the Holy Land (Tyerman 2013, 129). The workshop of Pietro Vesconte produced many of these, which Sanudo commissioned specifically to accompany the volume (Edson 2010, 510-11). After he authored the text, Sanudo paid illuminators to make additional copies. He then gave the finished manuscripts out as gifts to important people who might be sympathetic to his cause, including Pope Clement V and King Robert of Naples (Tyerman 1982, 57-61).

The maps that Vesconte made to accompany the work offer a dimension of authority to the volume, and the multiple hands that have contributed to the work, both during its making and after, speaks to the object's social life.[ii] The maps delineate Sanudo's goals, Vesconte's accumulated knowledge about the world both Mediterranean and beyond, and the presence of an unknown third reader, who I am calling the ghost hand, who annotated the volume, especially the maps, extensively. The maps underwent a transformation every time someone used them, and they stand not just for themselves, but for the contemporary understanding of the geography of the time, compounded by their interactions with the world thus far. When all of these factors are taken into consideration, the maps have the power to reveal not just Sanudo as an author and a lobbyist, but a persuasive actor. Sanudo was directly involved with the manuscripts,[iii] and I take it as a given that Sanudo commissioned these maps from Vesconte directly, revealing

intertwining modes of authorship. I will argue for the portolan charts and maps as an integral part of Sanudo's design, functioning both to aid navigation as well as to make political statements about the borders of the Christian world and who owns the Holy Land. I will also return to the inscriptions that a second ghost hand wrote to speculate about who may have written in the Additional 27376, why, and what this use may tell us about the object's social life as it circulated in the world. In short, I view the maps as an integral part to Sanudo's persuasive powers, and I will use them to reframe Sanudo's historical impact.

The MS Tanner 190 in the Bodleian Library, and the MSS Vaticani Latini 2972 and Palatini Latini 1362 in the Vatican Library, are all copies of the *Secreta* dated between 1321 and 1329. They provide logical points of comparison to the MS Additional 27376.[iv] All four manuscripts are in excellent condition, and three share many illuminated miniatures in common. The maps included in all volumes are especially telling. Although the Tanner 190, Vaticani Latini 2972, and Palatini Latini 1362 all have fewer maps than the Additional 27376, the maps that they do contain are remarkably similar to those found in the Additional 27376. Side by side, the map of the Holy Land from the Additional 27376 (figure 1), the map of the Holy Land from the Tanner 190 (figure 2), and the map of the Holy Land in the Palatini Latini 1362 (figure 3) share many features in common. The Mediterranean is at the bottom, and a series of smaller seas connected by a river fill the upper half of the map. The mountain ranges, cities, and towns are all placed in roughly the same areas. The mapmakers used the same color scheme: water is green, the landmass is the color of the parchment, and the features have been drawn in with a dark brown ink. Some inscriptions are in red. The text at the bottom on both manuscripts begins, "Tota terra a monte Libano planus occidentale Jordanus usque," which roughly translates to "The entire earth away from Mount Libano is flat up until west Jordan,"[v] (MS Tanner 190, fol. 205v-206r; MS Additional fol. 188v-189r, map of the Holy Land.) The most obvious difference between the two earlier maps and the later one in the Additional 27376 is that the lattermost has more labels and sections, even if the text at the bottom appears to be largely the same. All of these maps are attributed to the workshop of Vesconte, and it is entirely possible that, because it is a later copy, he was able to update the information about the Holy Land for the map accompanying the Additional 27376.

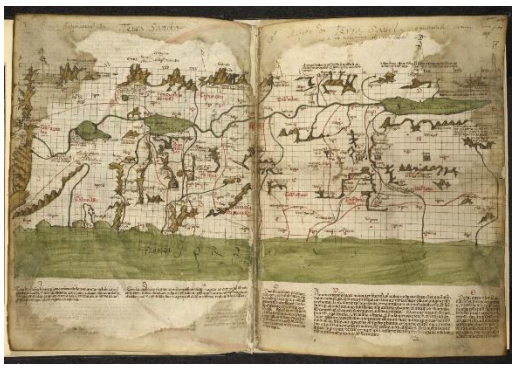

Figure 1
Map of the Holy Land, The British Library, MS Additional 27376, fol. 188v-189r.

Figure 2
Map of the Holy Land, The British Library, MS Tanner 190, fol. 205v-206r.

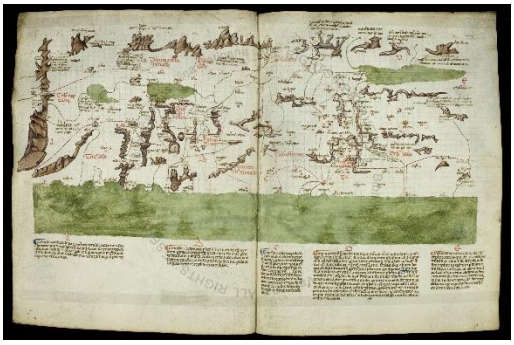

Figure 3
Map of the Holy Land, MS Palatini Latini 1362, fol. 7v-8r.

Another, more striking difference speaks to the unique social life of the Additional 27376. It is apparent from the side-by-side comparison of these manuscripts that a second person, or ghost hand, took extensive notes in the Additional 27376. The identity of the second person is unknown. Whereas the other manuscripts have much fewer later additions, the entire Additional 27376 has been annotated. This is most obvious at the top of the map on folio 188v where the owner of the ghost hand appears to have misspelled "mappa mundi" as "mapa mundus" and put "mundus" in the wrong case (figure 4). The second hand also wrote more clearly the words "Terra sancta" near the center top of the folio. At the bottom of the folio, in red ink, the original scribe labeled each textual section with a letter that corresponds to the grid on the map, and the second hand added arrows at the top of the map demonstrating on the grid where each section falls, a clarifying gesture most clearly seen where they wrote the letter B on the upper right side of the folio. Additionally, several labels that the second hand added are in Italian or Catalan, not Latin, and some Latin nouns in Latin inscriptions appear to be in the wrong case. The second set of handwriting adds a dimension of audience-as-author that demonstrates the perceived value of the work to someone who reacted strongly to the maps in Sanudo's volume.

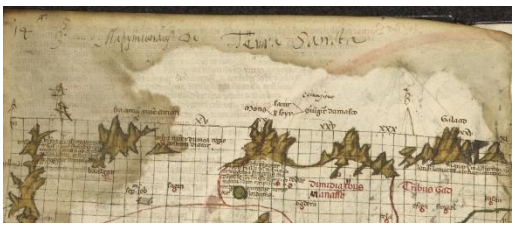

Figure 4
Map of the Holy Land, detail of the phrase "Terra Sancta", The British Library, MS Additional 27376, fol. 188v.

The Maps as Territory and Destination

It is worthwhile to consider the crusades in general, and Sanudo's preoccupation with the Holy Land specifically. Born in Venice sometime between 1260 and 1270, Marino Sanudo, often called Torsello, was a member of a patrician family with mercantile interests (Edson 2007, 60; Lock 2014, 135-37). He may have lived in Acre as a young man in the 1280s when it was held by Christians

(Tyerman 1982, 57-59), though there is no evidence that he ever went into Jerusalem itself, which was under Muslim control (Davis, 2013, 101-3; Tyerman 2006, 4-5) Turkish Mamluk forces took Acre in 1291, seizing the territories briefly held by the Latins (Tyerman 1982, 58). Perhaps Sanudo was affected by the loss. Around 1306, he began writing about crusades with his work *Conditiones Terrae Sanctae*. He continued to travel for mercantile work, and ventured as far as the Baltic Sea, where he made a point to compare what he knew about Mediterranean sailing with the maritime techniques of the people he encountered in the north (Tyerman 1982, 60). Sanudo's travels may have in turn influenced the *mappae mundi* that accompanied the *Secreta*, although it is unclear how much he collaborated with Vesconte.

It is not known when Sanudo started and finished writing the *Secreta*, but he seems to have completed a first draft of the work by 1322, when political events caused him to circulate and promote his cause more fervently (Tyerman 1982, 61). In fact, the *Secreta* manuscripts in the Vatican Library as well as the Tanner 190 were plausibly compiled around this time. Between the years of 1322 and his death in 1343, Sanudo never stopped traveling, meeting his contacts, arguing for the finer points of how to launch a successful crusade, and gifting copies of the *Secreta* to important individuals (Tyerman 1982, 62-65). There is evidence between copies that Sanudo also revised the *Secreta* at least twice (The British Library, n.d.). It seems likely that Sanudo, with mercantile interests in Venice, stood to gain monetarily from crusading, which may have been part of his motivation. The *Secreta* details Sanudo's technical plans for taking back the Holy Land and can be understood as the literary manifestation of his lobbying and a demonstration of his expertise. Sanudo put decades of work into his writing.

It is therefore not surprising that Sanudo was particular about the maps he commissioned, and that he repeatedly returned to Vesconte's workshop. All four volumes discussed in this article have maps attributed to the workshop of Pietro Vesconte.[vi] Three have the aforementioned map of the Holy Land, there are portolans in all but the Tanner 190, there is a map of Acre in all but the Vaticani Latini 2972, and all four *Secreta* manuscripts contain an unusual *mappa mundi*. At first glance, the *mappae mundi* all appear to be based on earlier *mappa mundi* forms. They are divided down the bottom center by the Mediterranean, all have thin encircling oceans around roughly three continents, and they are all oriented to the east, with Europe on the bottom left, Africa on the bottom right, and Asia taking up the top half of the map. This eastern-oriented world of three continents also dates back to Isidore, with the world growing more elaborate in later medieval T-O maps that document a three-part world with Asia at the top. The inscription for Jerusalem is small and difficult to read, but nonetheless it is in the center of the map, where it became standard during the thirteenth century on T-O maps to place it (Scafi 2015, 262-63). Gog and Magog are present in the northern section of the maps, which is another common trope of T-O maps, but they are given no image as they often are on *mappae mundi*, and their inscription is difficult to find among the various placenames (Edson 2007, 65). The resemblance between these four *mappae mundi* and earlier medieval *mappae mundi* is evident in the layout of the world

as well as the placement of familiar features.

However, despite some characteristics in common with earlier *mappae mundi*, all of these maps incorporate knowledge about the world not typically found before the fourteenth century. The Tanner 190 *mappa mundi* (figure 5), Vaticani Latini 2972 *mappa mundi* (figure 6), Palatini Latini 1362 *mappa mundi* (figure 7), and the Additional 27376 *mappa mundi* (figure 8), are all slightly different from each other, but they are alike in their differences from earlier maps. Pietro Vesconte may have been the first mapmaker to incorporate features of the portolan chart into the *mappa mundi* (Unger 2010, 46; Edson 2010, 510-11), including the rhumb lines around the circumference and of the Additional, Vat.Lat., and Pal.Lat maps, and the curve of the African and European coastlines on all four maps that resembles the coastlines from portolan charts (Edson 2007, 65). Another notable feature, the inclusion of Mecca near the center of the map in the top-right quadrant, suggests Arab influence (Unger 2010, 46), though the exact maps that Vesconte may have looked at are still being debated (Edson 2007, 68-70). Missing from all maps are the marvelous creatures, any references to Jesus, Paradise or the Garden of Eden, and most other historical/religious imagery, such as the Tower of Babel. On medieval and early modern *mappae mundi*, the representation of Jerusalem, which was rarely held by Christians, often includes Christianizing elements, such as representations of the Holy Sepulchre (Scafi 2015 259-61). These elements are entirely absent from Vesconte's *mappae mundi*. In all cases, the *mappa mundi* transitions from the world as a canvas for expressing historical and biblical ideas to a document promoting accumulated knowledge of place and property. As objects, these maps assert the primacy of the Holy Land by continuing to center it within the known world, but the format of the rest of the map relies on knowledge of the navigable world.

Figure 5
***Mappa mundi,* Bodleian Library, MS Tanner 190, fol. 203v-204r.**

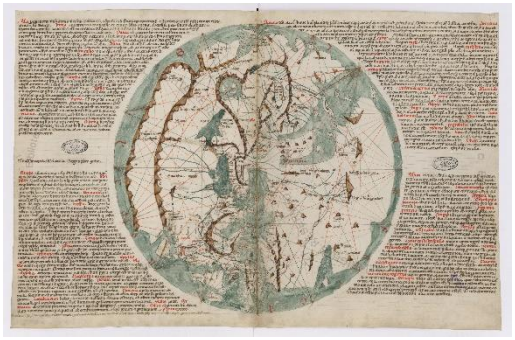

Figure 6
***Mappa mundi,* Biblioteca Apostolica Vaticana, MS Vaticani Latini 2972, fol. 112v-113r.**

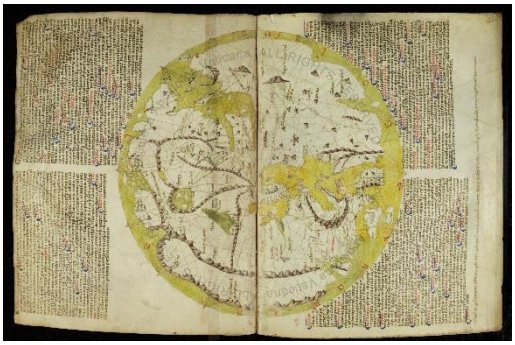

Figure 7
MS Palatini Latini 1362, fol. 1v-2r, *mappa mundi.*

Figure 8
MS Additional 27376, fol. 187v-188r, *mappa mundi.*

Mecca is a strange inclusion, as is Scandinavia, which appears on the bottom-left of the map. Unger writes that Scandinavia did not appear on Italian maps until the early fourteenth century (2010, 46), and William Boelhower argues that Vesconte may have been a sailor who knew about Scandinavia and other faraway places from travel accounts (2018, 281). The upper-right quadrant features India as well as dozens of little islands that probably represent the origins of the spice trade (Edson 2007, 65). These are not usually included on earlier *mappae mundi* and point to Arab sources (Boelhower 2018, 279-80). In short, the argument that Vesconte's *mappa mundi* is the result of syncretism between older *mappae mundi* forms and Italian mapmaking practices, is cogent. For Sanudo to then choose Vesconte's syncretic *mappa mundi* indicates an appeal to secular authorities about the state of the world and who owns it. Sanudo's project may have included legitimating Christian claims to the Holy Land, but the maps demonstrate expertise in geography and navigation, lending an early modern cosmopolitanism to Sanudo's work.

The Tanner 190 may have been the oldest copy of the work out of the four discussed in this article, and the *mappa mundi* in it appears to have been updated in the other three volumes. The most obvious change to the later *mappae mundi* is the inclusion of rhumb lines. The Additional 27376 also has a compass rose at the north end of the map on the left side, serving as a locus for the rhumb lines at that point. Nine rhumb lines extend from each of sixteen equidistant points on the circumference of the map. The Tanner 190 *mappa mundi* also has a lot fewer place names on it; on the Additional 27376 *mappa mundi*, all the extra information nearly obscures the Mediterranean entirely. It appears as though Vesconte updated his template used for his previous *mappa mundi* and attempted to lend the map more authority by including the rhumb lines, which Boelhower nonetheless argues were "purely symbolic," (2018, 282) or non-functional. Pushing this idea further, Vesconte's *mappa mundi* was incompatible with contemporary navigation practices, but the inclusion of rhumb lines is a statement of potential. Portolan charts were used for navigation, so making a *mappa mundi* resemble a portolan chart asserts that a previously foreign world formerly populated by marvelous creatures at the margins but presently

devoid of them is indeed knowable, navigable, and conquerable.[vii]

The Tanner 190 in its current form does not contain any portolan charts, which may indicate that Sanudo only started commissioning them for later copies of his manuscript. The Palatini Latini 1362 contains two portolan charts, and the Vaticani Latini 2972 and Additional 27376 both contain several, documenting shorelines from all over Europe and the Mediterranean. The portolan chart of the Black Sea in the Additional 27376 (figure 9) is fairly standard for a portolan chart in Unger's description: it has multiple loci for the rhumb lines arranged geometrically. Each locus radiates four black lines running perpendicular to the edge of the map for the four cardinal directions, or winds, with eight green lines for the half winds and sixteen red lines for the quarter winds. The chart is oriented to the north, and it centers on the Black Sea. The body of water is largely blank, with the names of ports inscribed inland on the shoreline (Unger 2010, 43-44; Monmonier 2004, 17-20). Although earlier and later maps often color in bodies of water to differentiate them from land, portolans use color very sparingly, reserving it for important features of the chart. The only decorative element of the chart are the flags on the outside of the map. The heraldry belongs to Constantinople and surrounding states (The British Library, n.d.). Based on Unger's argument, this chart would have been functional to a navigator familiar with this technology.

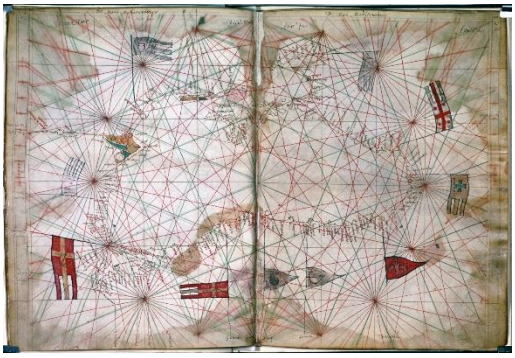

Figure 9
MS Additional 27376, fol. 184v-185r, portolan chart of the Black Sea.

An ongoing question with Sanudo's manuscripts specifically and surviving portolan charts in general is the curious lack of wear on the actual documents. As Edson observes, very few surviving portolans show pricking, later annotation describing a route, or saltwater stains. (Edson 2007, 57-58). The maps in the Tanner 190 are in remarkably good condition, and likely they never saw practical use. The maps in the other three volumes do have some wear, particularly on the Mediterranean Sea on the *mappae mundi*, but it is not obvious that the books ever travelled on the ocean or aided in navigation. Nonetheless, the inclusion of portolans as a functional object bespeaks to two processes: one, direct navigation while sailing at sea, but two, more importantly for Sanudo's goals, actually planning a route before the voyage,[viii] which may account for why so many portolans appear to have not been used directly for navigation. One can imagine Sanudo opening the manuscript to the map, showing his interlocutor two points, and using the map to describe the feasibility of getting there. Even if the point was rhetorical and Sanudo had no intention of arguing for sailing the Black Sea, the portolans are included as authoritative documents intended to be handled and used not just

for navigation, but for planning. Their utility in two dimensions echoes the utility of Sanudo's plans at large.

I ascertain from these maps more deliberation on Sanudo's part. The number of surviving maps signed by Vesconte indicate that his workshop was prolific (Campbell 1986, 67-94), and his maps must have been in high demand. The maps repeated in various volumes, as well as the standardization among the maps appearing more than once, indicate that Sanudo was a repeat client, likely with very specific ideas about what he wanted. The inclusion of the portolans and what appear to be updates in three volumes indicate that Sanudo's work evolved over time. Sanudo speaks in the entire manuscript in a voice of authority, and the maps lend weight to that authority, especially following the updates that Vesconte's workshop added to later editions. Whether or not the maps were functional to a fourteenth-century navigator is nearly orthogonal to the point: these books were not for sailors or captains, but rather for members of a financing class who needed to be persuaded that Sanudo had a viable strategy. Sanudo took extra care with the inclusion of the maps to lend authority to his work.

Furthermore, building on the idea of authority, the maps that Sanudo commissioned for this work demonstrate the feasibility of his plan irrespective of their utility. In the Tanner 190, Sanudo includes a *mappa mundi*, a map of the Holy Land, and a map specifically of Jerusalem and Acre proper, arguably to aid in interpretation of his work and reiterate the importance of the Holy Land. The Additional 27376 appears to be a more fervent effort as Sanudo includes portolans of the area designed for navigation, an expanded *mappa mundi* that includes regions of the world hitherto excluded on the *mappa mundi*, and an updated Holy Land map with more detail. Much work has been done about maps as political documents in the Middle Ages, and Sanudo embodies that tradition here. In the *Secreta*, he divided the world into East and West and expressed many anti-Muslim sentiments in both his written works and his personal letters (Lock 2014, 140). The Turks, in particular, held a special prominence in his plans, but he also mentioned Saracens in general, Mamluks, Agarenes, and anyone else affiliated with Saladin (Lock 2014, 149). Although the maps in these manuscripts communicate navigability and an understanding of how places in the world relate to one other, they are also statements about the world and who has rights to it. Not only is Sanudo seeking to argue about the logistics of taking the Holy Land, but he also makes statements about ownership of the Holy Land and the world at large through its representation it in a costly book.

The Lives of the Maps in the Ghost's Hands

Up to this point, I have described the maps in the *Secreta* volumes and how they fit into Sanudo's visions of crusading and the Holy Land. What remains of his efforts are a collection of manuscripts, some in fragments, documenting his life's work. In the Additional 27376, there is rare indication of what his contacts thought about his work. As mentioned previously, a ghost hand wrote on multiple folios in the Additional 27376, possibly on all of them. The handwriting is distinct from the original text of the *Secreta* as well as the writing on the maps. Their notes are mostly in the margins, but there are occasional interpolations in the text.

Folio 180r (figure 10) typifies the notes taken by the second hand; the top line reads, "Quator mappamundi a Marino Sanuto cognominato Torcello," or "Four world maps by Marino Sanudo called Torsello," with "quattuor" spelled unconventionally, the "n" above "mudi" where it appears as though they caught themself in the misspelling, and the rest of the line in what appears to be shorthand or abbreviations (fol. 180r). The last word appears to be "Sanuto" again but crossed out. Further down the page, they appear to have made a table of contents for the maps that will follow, dividing the world into Europe, Africa, and Asia in lines with numbers at the end of the line. The second to last line reads, "Civitas Jerusalem," with the contemporary spelling Jerusalem in the nominative (as opposed to genitive) case, followed by a long line, an abbreviation they use repeatedly that seems to mean "page," and the number 15 (fol. 180r). The last line reads, "Civitates Ptolemaidis [?] Acor,", also followed by a long line, the page abbreviation, and the number 16 (fol. 180r). Curiously, they put "Ptolemais," the Latin name for Acre, in the (correct) genitive case, which is "Ptolemaidis." Additionally, "Acor" may be an alternative spelling for "Acre." Accordingly, the last two maps in the volume are of the Holy Land and Acre. Other city names stand out, including Constantinople as an entry under Asia.

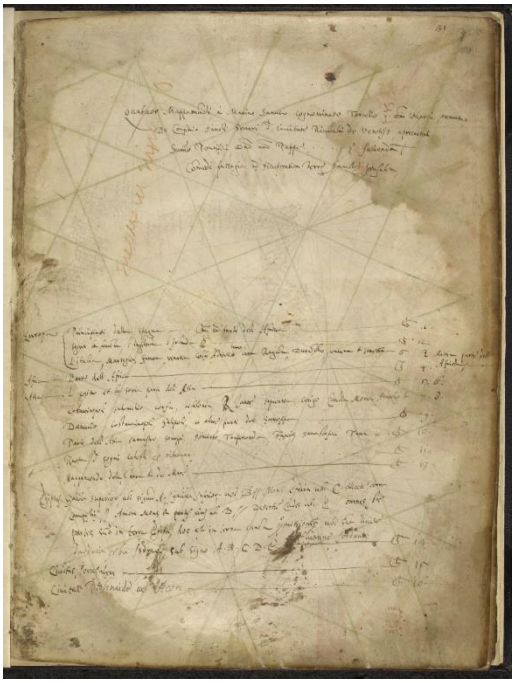

Figure 10
MS Additional 27376, fol. 180r, handwritten notes about the maps.

Although most of the handwriting is difficult to read and much of it is in shorthand, the writing on fol. 180r is standard for the ghost hand's notes: they write in Latin, with some updated place names, and their spelling is alternative in places. They seem to have taken more time on this page as it is among the easiest to read of all the notes they took. Curiously, they did not spell "Jerusalem" like it would be spelled typically in Classical Latin, but they opted to start with the Latin name for Acre in the correct case, which they do not always do with place names that take the genitive. Crucially, the ghost hand does not appear to be commenting on the work, merely labelling it, as Vesconte and Sanudo did not otherwise label the maps. This includes the portolans, which may have been opaque to someone who did not already know what they were or the geography that they

represent. This preface that the unknown author-audience made for themselves on an otherwise blank page indicates the depth of seriousness they were taking with their study, as well as their own removal from the milieu of Sanudo, who did not apparently think it necessary to label the maps. Accordingly, the second hand got many labels wrong: the map for Acre, spread across fols. 189v-190r (figure 11) is incorrectly labeled "Terra Aegypti" and "Terra Egipti."

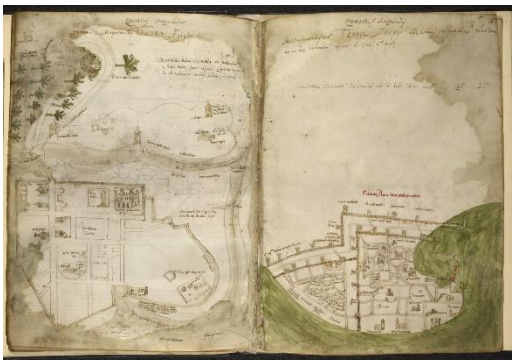

Figure 11
MS Additional 27376, fol. 189v-190r, map of Acre, erroneously labelled "Terra Aegypti" and "Terra Egipti."

The second hand took several notes on the portolan charts as well, mostly labeling land and water masses. In the top left of folio 184v, depicting the Black Sea, the second hand wrote "Europe pars" (figure 12, fol. 184v, portolan of the Black Sea). The modern spelling could be a later Latin form of "Europa" using the nominative case rather than the genitive case for the phrase "part of Europe" (fol. 184v, portolan of the Black Sea). On the top of the map, the second hand wrote "do mari mediterraneo," which may be Catalan for "concerning the Mediterranean Sea" or a form of "di mari mediterraneo," which would mean the same thing in Italian (fol. 184v, portolan of the Black Sea). It is unclear why the second hand wrote about the Mediterranean on a portolan of the Black Sea; possibly they were thinking through how the two bodies of water are connected, or speculating as to why the portolan was included in the volume. On the top of this portolan chart on both folios 184v and 185r, the second hand wrote variations of "asiae pars," or "part of Asia," appearing to substitute an apostrophe for the final "e" two out of three times (figure 13, fol. 184v, portolan of the Black Sea). Once more the phrase "di mari meditteraneo" appears, with an ambiguous character after the initial d that could be an o, e, or i, meaning the language could be Italian, Catalan, or a mix. They have also labelled all the flags on this portolan: although the majority of names are difficult to make out, the flag next to Constantinople, with the cross surrounded by four Greek letters beta associated with the Palaiologan dynasty, appears to have been labelled "Turchi" (figure 14). The second hand did not write as extensively on the portolans as they did in other parts of the manuscript, but their handwriting is unmistakable. It also appears that some words are in Italian or Catalan, though medieval vernacular proximity to Latin makes these inscriptions ambiguous. The second hand does not appear to be concerned with standardizing their spelling, which is common in post-classical Latin, but their meanings are clear enough. On this portolan chart, the second hand attempted to clarify which parts of the landmass around the Black Sea correspond to which continent. At the time, these shorelines may have been contested territory, and this poignant labelling places the second person within a timeline of shifting borders in Eastern Europe and Western Asia. Were they writing before, during, or after the Ottoman siege of Constantinople? Their

preoccupation with labelling landmasses on this portolan chart may indicate that the conflict was ongoing, and the labelling of the Constantinople heraldry as "Turchi" may mean that the conflict had ended, and that the area was under control of the Ottomans.

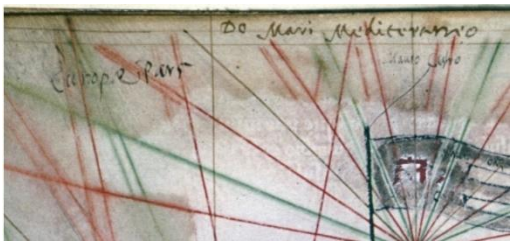

Figure 12
MS Additional 27376, fol. 184v, portolan chart of the Black Sea, detail of "Europ[a]e pars" and "[Do/De/Di] Mari Mediterraneo."

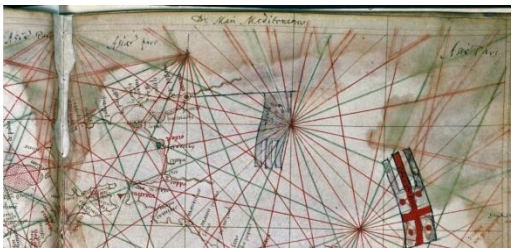

Figure 13
MS Additional 27376, fol. 184v-185r, portolan chart of the Black Sea, detail of inscriptions "Asia[e] Pars" and "[Do/De/Di] Mari Mediterraneo."

Figure 14
MS Additional 27376, fol. 184v-185r, portolan chart of the Black Sea, detail of the heraldry of Constantinople with the word "Turchi" written on it. Note that this image has been inverted from the original orientation of the portolan chart.

Inscriptions on the map of the Holy Land from the Additional 27376 shed the greatest light on the ghost hand's identity. As mentioned previously, the second hand dutifully noted on the grid where each section of the text falls. They labeled this image "Terra Sancta" in multiple places and provided an unintelligible inscription beneath it on the right. Fascinatingly, the second hand also scrawled "Flumen Jordanus," or "River Jordan," in the middle of what the mapmakers clearly intended to be the Mediterranean Sea (figure 15). The word "Flumen" is in the middle of the ocean on the left folio, and the word "Jordanus" sprawls across both folios (fol. 188v-189r, map of the Holy

Land). Vesconte and his workers almost certainly knew that the Jordan River flows to the north of the Dead Sea. Although the Jordan River is not labeled on this map, the Dead Sea is, and there is clearly a river flowing to the north. Confusingly, the second hand also labeled one of the smaller bodies of water "Mare Rubeus" next to the words "Mare Mortuum" (figure 16). The original scribe placed a "D" in red above this body of water, and the corresponding textual inscription below the map indicates that this is, in fact, the Dead Sea (fol. 188v-189r, map of the Holy Land). The Red Sea does not appear on this map. The second hand's labeling of the Dead Sea as "Red Sea Dead Sea" suggests that they were not sure and were thinking about it, that they wrote "Red Sea" and thought better of it, or possibly that they thought the two bodies of water were the same thing. As stated, the second hand also labelled Acre as being in Egypt. It seems unlikely that the author-audience who annotated these maps never made it to the Levant or Egypt, nor were they familiar with other informative texts and maps about what was essentially part of the Islamic world.

Figure 15
MS Additional 27376, fol. 188v-189r, map of the Holy Land, detail of the Mediterranean labelled "Flumen Jordanus."

Figure 16
MS Additional 27376, fol.189r, map of the Holy Land, detail of the Dead Sea labelled "Mare Rubeus Mare Mortuum."

All of these inscriptions raise the question of how these books were used and who made these notes. As stated, the books were commissioned by Sanudo and given out as gifts. The number of surviving copies indicates a proliferation of recipients but also might suggest that the books were not taken on ships and did not see much use outside of personal libraries. Many scholars consider Sanudo to be a propagandist (Laiou 1970, 375), and he disseminated the books to people he was actively entreating to do whatever was in their power to start a crusade. As Unger notes, "By the end of the thirteenth century the [portolan] had already become so normalized that it was common for cartographers to make presentation copies, versions designed for the libraries and offices of merchants, traders, and even politicians" (2010, 43). The portolans in the *Secreta* would have appealed to a learned audience interested in collecting and curating knowledge. I have argued that the portolans in the back of the book could have been functional objects, but they also represented an accumulation of knowledge to non-seafaring audiences, a category to which many recipients of the book probably belonged.

The annotations made by the later hand in the Additional 27376 indicate that Sanudo had an effect on at least one of his recipients. Although the individual behind the ghost hand clearly could read and write some Latin, their first language was probably Italian or Catalan, based on some of the inscriptions. Their use of Latin points to a life in the late medieval

period or early modern period, but there is no way to know for sure who wrote in it as provenance of the book is unclear before 1727 (The British Library, n.d.). If the author-audience is medieval, the first assumption for secondary inscriptions that appear to have a ruminating purpose in illuminated manuscripts is often monks and nuns. However, by this period, illuminated manuscripts were in common enough circulation that the hand could have instead belonged outside of monastic circles. They may have been a merchant given the expanding power and education of the merchant class in medieval Italy, the nature of the book, the blend of vernacular and Latin for place names, and the potential for monetary gain from crusading. Surviving contracts from Genoa from the fourteenth century indicate that it was common for young merchants to be taught Latin as it pertained to their employment (Black 2001, 56). As such, education level does not definitively identify the writer: a monk, nun, nobleman or noblewoman, or merchant could have possessed this level of education. The ghost hand probably belonged to a man given the subject matter, but it could have been the work of a woman who had an interest in crusading or pilgrimage. Lastly, given some of the naïve labeling on the maps, the second hand probably had not traveled to Jerusalem, Egypt, or anywhere near Constantinople at the time they made these inscriptions. It is intriguing to think that, possibly, this book belonged to someone as far away from Vesconte's Genoa workshop as Sanudo's noble cousins in Andros, Greece, or in the opposite direction as far away as Iberia where Catalan was common, but there is no way to know for sure. Of the medieval possibilities, it most likely belonged to a male member of the Italian merchant class, who may have been a first, second, or even third owner.

Another intriguing possibility is that the ghost hand belonged to an early modern audience, perhaps an editor who wished to print the book, or maps, or both;[ix] a sixteenth century reader could have inherited or purchased the volume as a curiosity and thought to disseminate it to the world as a medieval artifact.[x] The *Secreta* was indeed published once in 1611 by Bongars (Lock 2014, 138) so it is worthwhile to consider an early modern audience with an interest in publishing and printing. They would have had Latin consistent with the inscriptions as it continued to be a popular language in literary circles, and the maps, in particular, would have been of interest to a viewer rethinking the boundaries and limitations of a world recently placed in dialogue with two new continents. Although the scribe made numerous labelling errors, the labelling of "Turchi" on the Constantinople heraldry is particularly eye-catching and may reveal them to be contemporaneous with the Ottoman Empire. It is entirely possible that the ghost hand belonged to a person centuries younger than the volume itself to whom, although a crusade would have been unthinkable, the ideas may have been salient and interesting in a changing world where maps as tangible objects declare statements about the world. The maps have the power to both reveal the territory and its ownership as well as imagine the possibilities for a shifting terrain.

Conclusion

The Additional 27376 represents multiple phases of Sanudo's ideas, and the maps must have been an important component to his lobbying efforts. The number of

surviving copies of the *Secreta*, the consistency among them, and the text itself indicate that Sanudo was fervent in his convictions and dedicated to his cause. He exhaustively detailed the logistics required to make his plans happen over approximately one hundred and fifty thousand words of refined Latin, separated into three parts. He commissioned at least twenty copies of a material-intensive and expensive book and appears to have dictated not just the words, but also the illustrations in very detailed and consistent terms. Lastly, he included extravagant maps made by a well-regarded atelier, adding to later copies of the book more of these visual aids to the genius and the righteousness of his plan. The similarities among the maps, I have argued, demonstrate Sanudo's propensity, as a discerning patron of knowledge, to wield significant influence over the works he commissioned, all in order to persuade his audience to take up arms and incite another crusade.

Yet, as C. J. Tyerman writes, "Sanudo died in 1343, a disappointed man. His will displays a sad defiance in his pleas for his work always to be available for consultation. The success of the Christian alliance of 1334 was a considerable achievement for which Sanudo must take some credit. But Sanudo's work had failed to achieve its purpose" (1982, 65). It is true that what Tyerman calls "the lost crusade" never came to fruition during Sanudo's life, despite all of his effort, but I would argue that the maps in the Additional 27376 display a glimpse of what his audience may have thought of his plans. The maps are the sum of interactions with various interlocutors, and they bear the traces thereof, having been made by Vesconte at Sanudo's behest, and then extensively annotated by an unknown author-audience. The fact that the maps continued to have a traceable life and interactions with the world as an object long after Sanudo commissioned them is telling: the marks on the parchment made by the ghost hand are testimony to the words that the maps spoke to the reader. They indeed continue to speak to the reader, both in the flesh, and as digital objects that have assumed a new dimension of both authorship and readership. Indeed, the digital scans provide insight[xi] in that the inscriptions are much easier to read in the high-resolution scans, and they are widely available to anyone who wishes to peruse the British Library. Sanudo's work has perhaps reached further than he could have ever anticipated, and the maps as the objects of this inquiry have thus far lived interesting social lives.

This treatment of manuscripts in general as an object is not unusual, and the maps contained in the Additional 27376 manuscript amplify the impact that the volume may have had. The materiality of parchment lends itself to acts of devotion, and the dedication with which the ghost hand laboriously took notes and tried fundamentally to understand Sanudo's work can be read as a devotional act, regardless of who annotated it or what their ultimate purpose may have been. Someone, whoever they were, believed in Sanudo's cause enough to take studious notes, elevating the maps from luxury items delineating the world to well-loved and cherished objects that reflect their understanding of place. It will likely never be known to who the author-audience was, and the historical facts of Sanudo's never-to-be crusade are undeniable. However, the maps in the Additional 27376 should cause the scholar to reconsider the ardor with which Sanudo promoted his cause, and the amount of detail that went into

the planning as well as how his audience received it.

References

Appadurai, Arjun. 1986. "Introduction: Commodities and the Politics of Value." In *The Social Life of Things: Commodities in Cultural Perspective*. Edited by Arjun Appadurai, 3-63. Cambridge: Cambridge University Press.

Black, Robert. 2001. *Humanism and Education in Medieval and Renaissance Italy: Tradition and Innovation in Latin Schools from the Twelfth to the Fifteenth Century*. Cambridge: Cambridge University Press.

"Bodleian Library MS. Tanner 190." The Bodleian Library. Accessed May 16th, 2021. https://digital.bodleian.ox.ac.uk/objects/43fcfa94-aee7-4ec6-9330-b2729225905c/.

Boelhower, William. 2018. "Framing Anew Ocean Genealogy: The Case of Venetian Cartography in the Early Modern Period." *Atlantic Studies* 15 (2): 279–97.

Campbell, Tony. 1986. "Census of Pre-Sixteenth-Century Portolan Charts." *Imago Mundi (Lympne)* 38 (1): 67–94.

"Detailed record for Additional 27376." The British Library. Accessed May 16th, 2021. http://www.bl.uk/catalogues/illuminatedmanuscripts/record.asp?MSID=8335&CollID=27&NStart=27376.

Edson, Evelyn. 2010. "The Medieval World View: Contemplating the Mappa Mundi." *History Compass* 8 (6): 503–17.

---. 2007. *The World Map, 1300-1492: The Persistence of Tradition and Transformation*. Baltimore: Johns Hopkins University Press.

Davis, R. H. C. 2013. *A History of Medieval Europe from Constantine to Saint Louis*. London: Routledge.

Jacoby, David. 1979. "Crusader Acre in the Thirteenth Century: Urban Layout and Topography." *Studi Medievali* 20: 1-45.

Laiou, A. 1970. "Marino Sanudo Torsello, Byzantium and the Turks: The Background to the Anti-Turkish League of 1332–1334." *Speculum* 45 (3): 374–92.

Lock, Peter. 2014. "Sanudo, Turks, Greeks and Latins in the Early Fourteenth Century." In *Contact and Conflict in Frankish Greece and the Aegean, 1204-1453*. Edited by Nikolaos G. Chrissis and Mike Carr, 135-49. London: Routledge.

"Manuscript - Vaticani Latini 2972." The Vatican Library. Accessed May 30th, 2022. https://digi.vatlib.it/mss/detail/319672.

Mittman, Asa Simon. 2019. "The Vercelli Map (c. 1217)." In *A Critical Companion to the English Medieval Mappae Mundi of the Twelfth and Thirteenth Centuries*. Edited by Dan Terkla and Nick Millea, 127-46. London: Boydell & Brewer.

Monmonier, Mark S. 2004. *Rhumb Lines and Map Wars: A Social History of the Mercator Projection*. Chicago: University of Chicago Press.

Scafi, Alessandro. 2015. "Coping with Muslim Jerusalem between the Middle Ages and the Renaissance: Islam and the

Holy City on Christian World Maps." In *Between Jerusalem and Europe: Essays in Honour of Bianca Kühnel*. Edited by Renana Bartal and Hanna Vorholt, 257-79. Leiden: Brill.

Tyerman, Christopher. 2006. *God's War: A New History of the Crusades.* Cambridge, MA: Belknap Press of Harvard University Press.

Tyerman, C. J. 1982. "Marino Sanudo Torsello and the Lost Crusade: Lobbying in the Fourteenth Century (The Alexander Prize Essay)." *Transactions of the Royal Historical Society* 32: 57-73.

---. 2013. "Marino Sanudo Torsello. The Book of the Secrets of the Faithful of the Cross (Liber Secretorum Fidelium Crucis), Tr. Peter Lock." *The English Historical Review* 128 (530): 128-30.

Unger, Richard W. 2010. *Ships on Maps: Pictures of Power in Renaissance Europe.* London: Palgrave Macmillan UK.

[i] Although the exact date of completion is unknown, in his work, C. J. Tyerman estimates this year range from the start of Sanudo's first work, *Conditiones Terra Sancta*, to the date of the first finished manuscript copy. See Tyerman, "Marino Sanudo Torsello and the Lost Crusade: Lobbying in the Fourteenth Century (The Alexander Prize Essay)," 60-61.

[ii] The definition of an object's social life is inspired by Arjun Appadurai. Although I do not cite him directly in this paper, his methods are instrumental to my argument. See Arjun Appadurai 3-63.

[iii] The standardizations among surviving Secreta manuscripts, particularly the miniatures illustrating the text, and other archival sources indicate that Sanudo was highly involved in the creation of the manuscripts. Getting into this is largely outside the scope of this paper, but would it merit further research as the images are clearly deliberate.

[iv] For the dating on the Tanner 190, see "Bodleian Library MS. Tanner 190." The Vatican Library identifies the Vat.Lat.2972 as a copy of the Secreta and dates it to 1301 to 1400 (see "Manuscript - Vat.lat.2972). Tony Campbell dates the Vaticani Latini 2972 to 1321, and the Palatini Latini 1362 to (possibly) 1320. Although the Palatini Latini 1362 has been divided into two works by the Vatican Library, David Jacoby writes that the entire manuscript is a copy of the Secreta with maps signed by Vesconte and argues that the date 1320 is speculative since the last character is rubbed away. However, he concludes that it must have been made at some point during that decade, which, for the purposes of this paper, still positions it as earlier than the Additional 27376 (Jacoby 3).

[v] All translations in Latin, Catalan, and Italian, unless otherwise noted, are the author's.

[vi] Pietro Vesconte is sometimes referred to as "Petrus Vesconte." Additionally, the portolan charts are definitively attributed to Vesconte's workshop, but the other maps are more dubiously authored. It is understood that it was probably Vesconte's workshop that produced them, and the British Library and the Bodleian library both assert that all maps were made by Vesconte's workshop, but some scholars disagree (Edson 67-91).

[vii] Credit and thanks to Šima Krtalić for talking me through this point and her generous sharing of her thoughts on these *mappae mundi*.

[viii] Credit and thanks to Joaquim Alves Gaspar for discussing the practical use of portolans with me and pointing out this secondary use.

[ix] Credit and thanks for this suggestion goes to Lauren Beck, who generously reviewed this paper for comments and talked me through many of my ideas, including the possibility of an early modern publisher annotating the volume.

[x] The British Library identifies the hand as being 16th century cursive, though they have not published any definitive information about this manuscript other than this single line on the main page for the manuscript. See "Detailed record for Additional 27376."

[xi] This point is inspired by Dan Terkla and Asa Simon Mittman, amongst others. Although the maps in the Additional 27376 have not been the

recipients of spectral technology or any of the other scanning technologies that are widely making medieval maps more legible, the fact remains that having been scanned digitally makes them more accessible and, indeed, more legible (Terkla forthcoming; Mittman 124-46). Both authors address the utility of digital scans, and furthermore, how the technology is impacting the scholarly understanding of these objects from the digital perspective.

HEATHER ROGERS AND KELLY CHAN
McGill University

Mapping Ecological Imperialism: A Digital Environmental Humanities Approach to Japan's Colonisation of Taiwan

The cinchona tree can be found within histories of medicine, trade, and ecological imperialism.[i] Sought after for the medicinal properties of its bark, cinchona was essential for imperialist nations to avoid the troop-decimating threat of malaria. Cinchona, and the quinine synthesised from its bark, "had an almost mythic importance for colonial administrators" (Yang 2012, 107). While existing studies have mainly focused on either British, Dutch, or – to a more limited extent – Spanish cultivation of cinchona and the role of quinine in European colonialism, this paper seeks instead to examine cinchona's place within environmental history through the lens of Japanese cinchona science, or *kina gaku*. The history of cinchona as it unfolded during Japan's colonisation of Taiwan allows us to broadly consider the role that natural resources play in empire building, as well as how societies within those nation-states are structured. As Sarah Besky and Jonathan Padwe (2016) argue, "plants are often portrayed as markers of humans' presence on the land and as contested symbols of human projects of rule, indexing power in its spatial and ecological forms" (10). Cultivation of the cinchona tree, along with the camphor tree and other natural resources, were at the heart of Japanese ecological imperialism. It is with the story of the cinchona tree that our paper engages with the relationship between nature and empires.

To better understand such complex entanglements between nature, people, and nation building, we can look to maps to see how those relationships were captured cartographically. The steps that go into map creation – "selection, omission, simplification, classification, the creation of hierarchies, and 'symbolization'" reflect subjective realities rather than general truths (Harley 1989, 11). Moreover, these subjective realities are further enhanced through the use of words such as 'barren,' 'unknown' and 'prospects' that can be found scattered across maps (Bender 2006). As Barbara Bender (2006) explains, "representations of space and time arise out of the world of social practices but then become a form of regulation of those practices" (6). Maps are, therefore, deeply storied objects that can help to illuminate our understanding of how land was not only used but how its usage reflected sociocultural structures. Our paper thus focuses on the role of maps in environmental history and ecological imperialism in order to investigate how land was described and what those descriptions reflect about the complex relationship between Japanese colonisers, Indigenous Taiwanese communities, and the land itself.

Our research aims to weave together multiple histories of cinchona, medicine, and colonialism by foregrounding maps and the role they play in cartographically capturing the colonial dynamics that centred around access to natural resources. First, we broadly lay out the significance of maps and map materiality. Our paper then focuses on Japan's colonial history as depicted through historical print maps, discussing the ways in which such maps spoke to questions of territorial control, natural resources as key agents, and the (re)-construction of boundaries and the racialization of Indigenous peoples. From there, we narrow our focus towards cinchona as a case study, addressing its cultivation in colonial Taiwan, scholar Ku Ya-wen's (2016) mapping of cinchona cultivation in the absence of physical maps, and cinchona's significance as a natural resource in both colony and metropole. We argue that the drive to acquire land for cinchona cultivation reflected the colonial view of Taiwan as an agricultural appendage whose land could be shaped and exploited for Japan's benefit. As well, we expand on the existing scholarship about cinchona by shedding more light on its role in the metropole, as depicted in newspaper articles and advertisements. In the absence of physical maps of cinchona cultivation, we also propose a potential avenue of further research: mapping out the transnational circulation of cinchona and quinine in the Japanese Empire. We then shift towards a broader discussion about the fields of digital environmental humanities and digital humanities (DH) – both of which utilize maps and environmental history to enable digital storytelling – through the lens of East Asian Studies. In combining digital tools with environmental history research, we thus situate our work in the emerging field of digital environmental humanities.

Maps

Geospatial approaches to history can help to shape our understanding of past usage of space, deepening our understanding of the relationship of people and land. As Jordana Dym and Carla Lois (2021) explain, "text tells a story; a map both shows and tells" (123). Although seen as a stable object that, on the surface, presents a depiction of spatial reality, maps also require investigation on a deeper level. A map "bespeaks an on-going process of picturing, narrating, symbolising, contesting, re-picturing, re-narrating, re-symbolizing, erasing, and re-inscribing a set of relations" (Presner, Shepard, and Kawano 2014, 15). As Bernhard Klein (2016) attests, historical maps do "not necessarily invite any direct physical engagement with the material world they represented but made specific statements about this world which changed people's views about the local and global environments in which they lived" (67). Moreover, scalar decisions that go into designing maps help to visualise hierarchies, categorization, and connections (Allen & Queen 2015, 85). Material decisions, such as inclusion of text and arrangement not only capture those hierarchies but convey a constructed worldview to the reader and affect how they understand a location's attributes, usage, and its inhabitants (Dym & Lois 2021, 123).

To assess the different histories contained with cartographic depictions, Allen and Queen (2015) advocate for a critical cartographic approach to analysing maps by acknowledging the diverse hierarchical relationships and information imbued in

the description of land in the map in an effort to both challenge the notion of a single interpretation of the past and highlight the "multiple histories" of a place (85). Similarly, Crampton and Krygier (2006) define critical cartography as a theoretical critique of traditional cartographic practice by underscoring how mapping is political and therefore not neutral. When applying a critical cartographic approach to assessing historical maps, Allen and Queen (2015) argue that it is key to question the cultural constructs of the map's design thereby reflecting on what the map shows as well as what it omits.

The social biases and world views baked into the creation of maps thus render them as "unstable signifiers, heavily imbued with the cultural perspectives of the society that created them" (Farman 2010, 874). As K.J. Rankin and Poul Holm (2019) attest, "cartography was produced by different people for different ends, the same individual phenomenon can even be rendered in quite different ways even if they are drawing from the same source" (195). According to Richard Grassby (2005), objects can reveal much about the culture of the time of their creation thereby capturing emotions, values, and viewpoints. Inanimate objects, such as maps, can thus be seen as deeply storied materials that, while providing purportedly 'objective' depictions of land and its topographic features, can, in reality, reveal deeper and more complex histories of exploitative imbalances, including imbalances tied to colonialism. Although names and borders may shift, historical maps capture moments in time and "their persistence creates histories" (Grassby 2005, 593). It is through maps that we may examine Japan's history of colonisation of Taiwan and natural resource extraction.

Japan's Colonial History through Maps

Japan's presence in Taiwan spanned across the Meiji, Taishō, and Shōwa eras from 1895 to 1945. In 1895, Japan gained control of Taiwan after the Qing Dynasty ceded it through the Treaty of Shimonoseki, a treaty that officially ended the first Sino-Japanese war (Chin 1998, 326). Both domestically and abroad, the Meiji era of Japan (1869-1912) was a period marked by widespread change and a new form of sovereign authority. In the early years of the Meiji government, there was a conscious effort to allow Japan to fully engage with the West in the global arena. As explained by Robert Eskildsen (2019), "as the Meiji government sought to make the transition to a new form of diplomacy, the boundaries of Japanese sovereign authority in the area between China and Japan needed to be brought into alignment" which could not be done without extending Japan's sphere of influence to include Taiwan (34).

During the colonial era, "Japanese leaders often felt compelled by geostrategic considerations to extend or consolidate territorial sovereignty in order to protect Japan's flanks," but limited resources and time pressure hindered their reach (Barclay 2017, 17). As a result, we see the emergence of this system of "bifurcated sovereignty" which involved a "different set of rules" under which Indigenous territories were administered in comparison to "the rest of the nation's spaces" (Barclay 2017, 17-18). Taiwan's "bifurcated sovereignty," as Paul Barclay (2017) argues, has its roots in "[t]he intensification

and extensification of global capitalism" in the late 19th century (13). Under Qing rule, "heterogeneous communities and ranked status groups stood in differentiated legal relationships to the apical centre of authority in Beijing" (Barclay 2017, 17). In contrast to this "multicentric legal pluralism," nation-states aimed to impose a more centralised form of sovereignty (Barclay 2017, 17). However, the reality was far from such ideals, as legal centralism was costly for imperial powers (Barclay 2017, 17).

This bifurcated view extended to Japan's treatment of Taiwan's resources where, according to Kate McDonald (2017), the Japanese government viewed Taiwan as Japan's "agricultural appendage" (McDonald 2017, 64). Although strategically valuable for Japan, the Japanese government viewed Taiwan as a colony that was also separate and different from the metropole. During the 1930s, the Ministry of Colonial Affairs oversaw Taiwan's Governor General. The view of Taiwan as a colonial appendage valued for its resources where both the land and its people were territorialized can be seen in maps from the early years of Japan's colonisation (figure 1)[ii]. These maps reflected the perceived otherness of Indigenous land that would be investigated, surveyed, and eventually restructured for the Japanese empire's benefit.

For the Indigenous population of Taiwan, their place within Japanese society would be heavily linked to agricultural labour and the seizure and restructuring of Taiwan's mountainous regions. While the Japanese Governor General recognized nine Indigenous ethnic groups, they were divided into either plains or highland or mountainous Indigenous groups, and they were often uniformly referred to as "*Takasago-zoku*" or "tribal peoples of Taiwan" (McDonald 2017, 122)[iii]. By referring to Indigenous peoples using the Japanese word *Takasago*, the cultural differences between the Indigenous groups were flattened and their existence was collectively and linguistically territorialized. Even though this term had existed for centuries, it became prevalent from the 1930s onwards, especially after 1935 (McDonald 2017, 122).

Across the maps, we can see how the central and eastern regions were often described in terms of what the Japanese empire deemed valuable, rather than centering on the different Indigenous communities who called those lands home. The digitised print maps we found illuminate the idea that Japan viewed Taiwan as an agricultural appendage and later as a tourist destination, all based on the idea of consuming Taiwan's natural resources separate from the colonial reality of displacement and extraction. As captured in maps, throughout Japan's colonisation of Taiwan, there were demarcations between the west and the east with the latter often described in flattening terms such as wild and uncultivated.

Early in Japan's occupation of Taiwan, the mountainous territories that were home to highland Indigenous communities were demarcated as no-enter zones that Japanese settlers could only enter with explicit permission of district authorities (Takekoshi 1907, 211). As Japanese historian and then Diet member Takekoshi Yosaburō (1907) wrote in his account of Japan's rule over Taiwan, the "golden key to the exhausting wealth of the island" would be to take over the land completely (212).

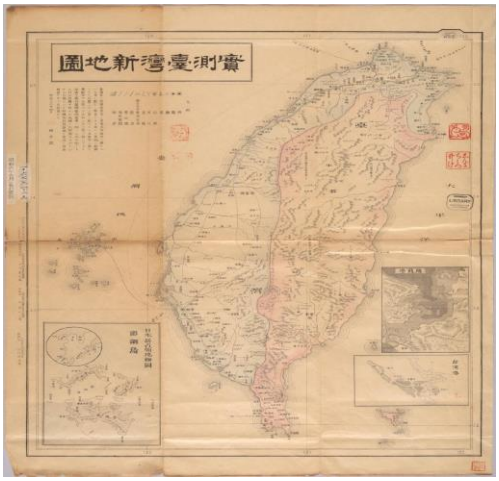

Figure 1
實測臺灣新地圖 (*Jissoku Taiwan Shinchizu).* Hayakawa Kumajiro, 1895 (Meiji 28).

This is not to say that the maps completely overlooked the presence of Indigenous communities in Taiwan. James W. Davidson, a New York Times correspondent who covered the transition from Qing dynasty rule to Japanese occupation and would later serve as an American diplomat during his stay in Taiwan, cartographically captured how the central and eastern parts of Taiwan were viewed (De Bunsen 1927). Davidson's 1901 map of Japanese-occupied Taiwan (figure 2) showed the colony split in two, with the western part of the island labelled as being under Japanese rule and separated cartographically and socially from the Indigenous central and eastern section in which the Atayal people, the Tsou people and the Bunun (Vonum) people resided. The map also illustrates Japanese rule over the whole island, evident in the fact that the Japanese names for the prefectures are also beyond the red boundary. The red line could thus also illustrate a delineation of different types of territory within the colony, therefore speaking to the concept of bifurcated sovereignty.

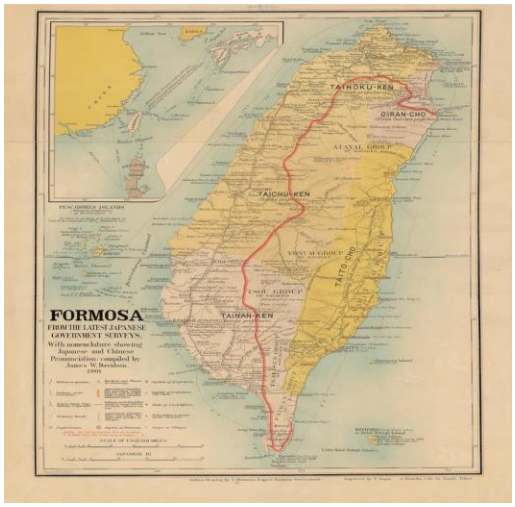

Figure 2
***Formosa from the latest Japanese government surveys.* Davidson, James W. *The Island of Formosa Past and Present.* London and New York: Macmillan & Co.: Yokohama: Kelly & Walsh, 1903.**

The cartographic depiction of a split Taiwan mirrored the Qing maps available at the time that only detailed the western, Han-Chinese occupied areas, leaving the eastern part of Taiwan undocumented (Lay, Chen, and Yap 2010). Thus, at the beginning of Japan's occupation, the inhabited areas were already thought of as wild and open for control.

Cartographic depictions of Taiwan often visualised the land in terms of agricultural significance which reflected the view of Taiwan as a subsidiary to Japan valuable in terms of what the land could produce. Inclusive maps of Japan and its colonies would relegate Taiwan to the margins by "separating Taiwan from the entire territory of Japan and placing it in a blank cor-

ner" (Lay, Chen, and Yap 2010, 186). Davidson's 1903 Industrial Map of Formosa (figure 3), referring to Taiwan by its historical Portuguese name, depicted areas of Taiwan according to usage for resource extraction and harvesting, such as forest products, minerals, rice, and tea.

It would be useful to compare this map to an industrial map of Japan to highlight the dynamics between colony and metropole. In 1907, Scottish cartographer J.G. Bartholomew produced industrial maps depicting Japan and China's key exports (figure 4). Taiwan is also present in this map, and Bartholomew depicts it as being a valuable site for camphor extraction. In contrast to Davidson's 1903 map, Bartholomew's map has more of a transnational focus regarding the export of resources, evident in how Japan is placed in relation to China, Korea and Taiwan. Davidson's map primarily focuses on Taiwan, which perhaps emphasises efforts to single out Taiwan as a key site for natural resource extraction.

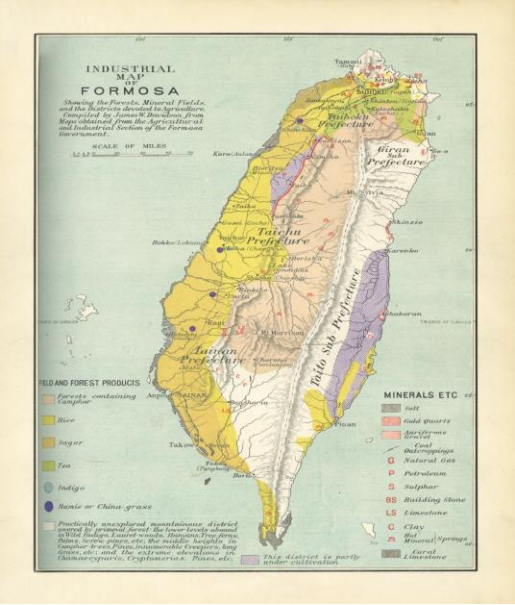

Figure 3
***Industrial map of Formosa*. Davidson, James W. *The Island of Formosa Past and Present.* London and New York: Macmillan & Co.; Yokohama: Kelly & Walsh, 1903.**

Figure 4
***China. Japan. Industrial*. Bartholomew, J.G. *Atlas of the World's Commerce*. London: George Newnes, 1907.**

Forest surveys were commonly used by the Governor General to assess the value of land as it benefited the Japanese empire (figures 5 & 6). Figure 5 is a 1937 map titled "Shinrin keikaku jigyō hōkoku-sho" (森林計画事業報告書), published in the Forest Planning Business Report. It depicts previous areas explored for forest planning (yellow) and the then current areas for exploration (pink). Figure 6, a map titled "Nijūmanbun no ichi teikokuzu" (二十万分一帝國圖) was created by the Japanese Imperial Land Survey Department, which was affiliated with the Japanese Imperial Army. It depicts different types of forests, such as bamboo groves, palm forests, coniferous forests and subtropical forests (figure 6.1). It also depicts uncultivated land. Upon close inspection of the map (figure 6.2), the symbol for unculti-

vated land can be seen along the borderlines in the centre of the map marking Indigenous territory. The forest surveys would in turn become "a means by which the Governments General translated the discourse of colonial incivility into actual practices of dispossession." (McDonald 2017, 53). The areas chosen for forest surveys were thus viewed in terms of their benefit to the Japanese state and cartographically depicted as untouched forests full of timber that would later serve as sites for cinchona plantations, and for natural resource cultivation.

As McDonald (2017) explains, in the eyes of the Government General, Taiwanese Indigenous peoples who resided in the central mountainous areas "did not have a concept of private property and therefore could not have owned the land prior to the establishment of the Japanese colonial government" (53). While Japanese colonial officials acknowledged that the Indigenous peoples in the mountainous regions of Taiwan had their own practices of engaging with and maintaining the natural world around them, they were judged as unfit to make what the Japanese considered productive use of the forest (Yang 2012, 115). The Japanese colonial administration had introduced "a system of private and public (state) property rights over Taiwan's forests," resulting in Indigenous peoples losing control over their forest lands (Tavares 2005, 372).[iv]

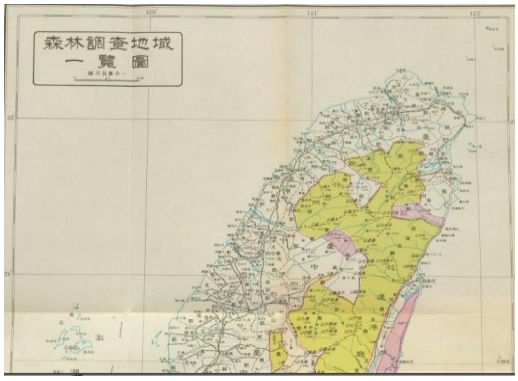

Figure 5
森林計画事業報告書 (Shinrin keikaku jigyō hōkoku-sho) 1937/ 昭12年. Published in the Forest Planning Business Report, this map shows areas of previous areas explored for forest planning (yellow) and current areas (pink) at the time.

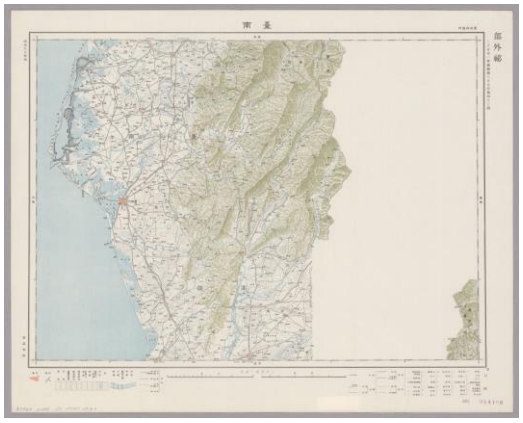

Figure 6
二十万分一帝國圖 (Nijūmanbun no ichi teikokuzu)

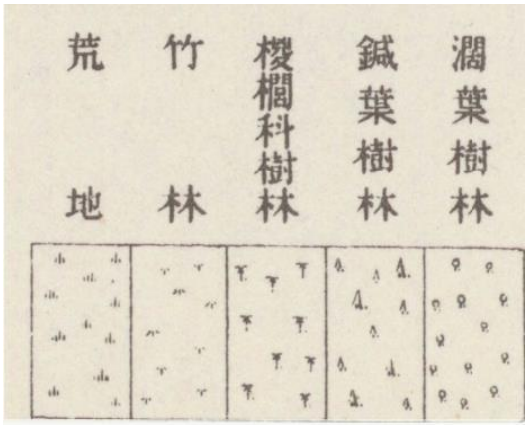

Figure 6.1
Map key located in the bottom left corner of the map noting (from L - R): uncultivated land, bamboo groves, palm forests, coniferous forests, and subtropical forests.

Figure 6.2
Closeup of map showing border between what was considered cultivated and uncultivated land.

Maps, as well as postcards and photographs, also reflect a romanticised narrative of Japanese control over the island. These visual items "enabled the incorporation of Indigenous people in the tourist economy as labor and scenery" (McDonald 2017, 129). This view extended to how Indigenous communities were depicted and treated. For example, in one travel description, the ability for travellers to see the Tsou people was advertised as a highlight (McDonald 2017, 129).

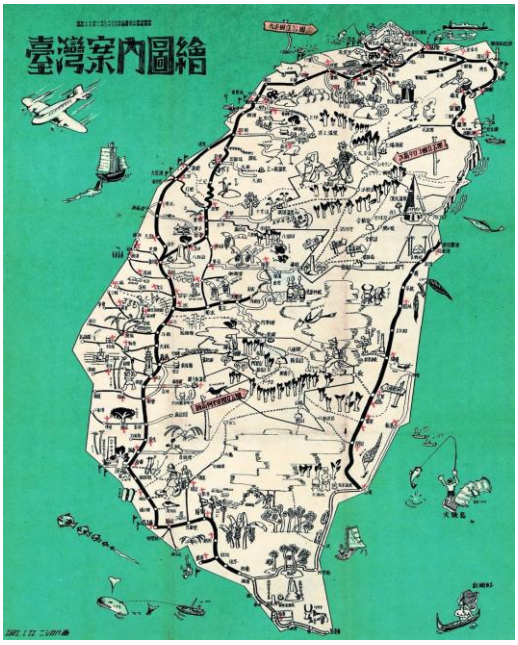

Figure 7
1942 Birds-eye view map of Taiwan picturing natural resources and tourist attractions for Japanese travellers. Like the flora and fauna of the mountains, the Indigenous peoples who lived in the national parks were subjected to voyeurism and reduced to touristic commodification. Japanese travel magazines extolled the frozen-in-time nature of Indigenous communities while collapsing distinct differences and Indigenous perspectives (McDonald 2017, 122).

Birds-eye view style maps for travel advertisements (figure 7) were used to highlight these natural attractions to appeal to Japanese tourists looking to vacation in Taiwan. The map depicts attractions such as national parks – evident in, for example, the inclusion of colonial era national

parks (names are depicted in the pink arrows) Nītaka Arisan National Park (新高阿里山国立公園), Tsugitaka Taroko National Park (次高タロコ国立公園) and Daiton National Park (大屯国立公園) – and *onsen* (hot springs) such as the Kōyō Onsen (**紅葉温泉**). The establishment of national parks was a significant aspect of Japanese colonialism. To colonial authorities, national parks helped "modernize" spaces. Todd A. Henry, in his work on urban space in colonial Korea, notes that parks were an example of a "social education [facility]" that could be instrumentalized to assimilate the colonised (Henry 2014, 41). Furthermore, considering that national parks are spaces that contain purportedly "natural" attractions, the map's inclusion of all these national parks asserts Japan's claims to the land and its purported ability to "tame" the natural landscape, rendering it a "safe" area of exploration for tourists from the metropole. We thus see that in colonial Taiwan, tourism, natural resources and claims to land go hand in hand.

Despite labelling lands as uncultivated or public, the mountainous regions were home to Indigenous communities with their own systems of agriculture. However, to gain access to the fertile mountainous highlands, over half of Taiwan's Indigenous population were forcefully relocated. According to Shao-hua Liu and Shu-min Huang (2016), over 43,000 Indigenous peoples were resettled, completely altering their traditional livelihoods between 1903 and 1942 (120). In Scott Simon's ethnographic study of Taroko villagers, their cultural identity that was so strongly tied to the forest was shaken through being forcibly removed from their homes (qtd. in Morris-Suzuki 2013, 237). Others, such as the Atayal people, were placed within national parks where their traditional means of agriculture was seen as preserving the "virgin soil" of the mountains which would appeal to Japanese tourists looking to enjoy a sort of untouched nature (McDonald 2017, 130.)

By shaping the landscape, Japanese government officials, as well as scientists, and pharmaceutical companies transformed both the environment and the dynamics of local land use into an "agriculture of legibility" in line with Japanese standards for Japanese benefit (Besky and Padwe 2016, 14). More significantly, this highlights the centrality of respatialization in Japanese colonial policy where land was labelled and marked in accordance with its value for the success of Japanese agricultural and medical policies. Historical maps captured this respatialization and official demarcation of central and eastern Taiwan, including land that was home to highland Indigenous communities.[v] Within the structures of asymmetrical systems of ecological imperialism, the Japanese colonialist drive to acquire land for cinchona and camphor cultivation, in addition to other economic objectives, involved restructuring the land itself by negatively framing Indigenous ways of agriculture.

Cinchona and the Japanese Empire

In order to understand how cinchona cultivation played a role in Japan's colonisation of Taiwan, it is necessary to turn to cinchona's history. The cinchona tree and its bitter bark have been known by many names over the past several centuries – *quarango*, *kina kina,* the Fever Tree, Peruvian crown, Jesuit's bark, or Countess's powder (Crawford 2009; Deb Roy 2017).

European historical records of cinchona bark usage can be traced to the Spanish Jesuits in Peru in the 1500s and 1600s. The cinchona bark was used in its crude state until the early 1800s when, in 1820, two French chemists, Pierre-Joseph Pelletier and Joseph Caventou, successfully isolated the quinine alkaloids from the bark (Eyal 2018, 2). As awareness of the medicinal power of quinine and the cinchona tree to fight malaria gradually spread across Europe and Asia, the need to master the difficult cultivating process would drive global conquests by empires for land and labour. Due to the inability of the cinchona tree to thrive just anywhere and the fact that only a few species of cinchona contain the necessary amount of quinine in its bark, there was heightened anxiety around lack of access to quinine reserves (Ku 2016, 157). For Japan, the drive to acquire unfettered access to quinine reserves to combat malaria would play a role in its colonisation of Taiwan and usage of Indigenous land.

In his account of Taiwan as a new colony of Japan, Scottish missionary William Campbell (1902) remarked that "now, as the highlands of Formosa are much more accessible than formerly, what is there to hinder an attempt being made by the Government, or some private Company, in the direction of cinchona cultivation?" (Campbell 1902, 565). This was solidified in 1902, when the Japanese Government General of Taiwan declared that Indigenous peoples had no legitimate rights to their land and "could therefore make no claims to ownership" and in 1911, the mountainous regions once closed off were opened for access to timber reserves (McDonald 2017, 130; Lamley 2007). That same year, the Forest Experimental Station was established in Taipei to experiment with planting in the mountainous regions deemed suitable for cinchona growing (Ku 2016).

Initial cinchona experiments would be followed by extensive development phases in the 1920s and 1930s led by the Hoshi Pharmaceutical Company. Founded in the 1910s, Hoshi Pharmaceuticals rose to prominence in the 1920s as the leader of drug stores domestically and in Japan's colonies. Its founder, Hoshi Hajime, was inspired by American business practices from his time spent travelling and studying in the United States. His reputation as an expert on American culture allowed him access to notable figures such as Itō Hirobumi, first prime minister of Japan who was also Resident-General of Korea; Gotō Shinpei, advisor on sanitation in colonial Taiwan; and Sugiyama Shigemaru, a primary benefactor of Hoshi Hajime "who facilitated the annexation of Korea and helped establish the Bank of Taiwan and the South Manchurian Railway" (Yang 2012, 105; Liu 2004, 301). Nationalism and innovation for the advancement of the Japanese empire became the hallmark of Hoshi's business ideology, and this vision would inspire his pursuit of cinchona cultivation in the 1920s and 30s.

Hoshi viewed the Western monopoly on cinchona as a direct threat to Japan's goal of self-sufficiency and believed that successful cinchona plantations and a steady supply of quinine was "a metaphor for the technocratic and utopian promise of Japan's colonial empire" (Yang 2012, 121). The nationalist ideology of Hoshi Pharmaceuticals was not uncommon for others invested in Japanese control in Taiwan and would set the stage for shaping cinchona cultivation as a matter of

economic, medical, and national importance. Additionally, cinchona cultivation was thought to be a solution to resolve the tumultuous relationship between Japanese people in Taiwan and the Indigenous Taiwanese communities which was often referred to as the "aboriginal problem" (Yang 2012, 114). According to Yang, Hoshi had intended to use a purportedly "humanitarian" approach, emphasising the importance of cooperating with the Indigenous peoples rather than punishing them (Yang 2012, 114). In implementing such an approach, Hoshi had become heavily reliant on the expertise of botanist Tanaka Chōzaburō from Taihoku Imperial University, "who explicitly linked Hoshi's plan [of cultivating cinchona in Taiwan] with the future of Japanese agriculture in the 1930s" (Yang 2012, 112, 115). Tanaka himself wanted to find a way for Indigenous communities – who took part in slash and burn agriculture – to shift towards a more "sustainable" lifestyle, where they would not be, in Tanaka's opinion, destroying the land (Yang 2012, 115).

At the heart of Hoshi's cinchona cultivation plans was the intention to structure sustainable agriculture education broadly, and more specifically, relationships with Indigenous groups around cinchona cultivation. His vision was also shared by Horiuchi Tsugio, director of the Hygiene Division of the Central Research Institute (Yang 2012, 112). Cinchona plantations would be known as "cooperative areas" where, in exchange for labour, families could receive rations and take their children to schools where they would be educated in Japanese methods of agriculture (Yang 2012, 115). This dynamic thus placed agriculture at the centre of the structure of colonial relations. Despite the heavy reliance on Indigenous labour, however, Indigenous peoples "were the last in line to receive quinine to prevent malaria, due to the high cost of such treatments" (Yang 2021, 207). Meanwhile, Japanese settlers occupied a more privileged position in their access to quinine from colonial authorities (Yang 2021, 190, 207). Even the end of the colonial regime did not necessarily entail the liberation of Indigenous Taiwanese communities. Chin Hsien-yu notes that Indigenous peoples still faced discrimination under the postcolonial medical system, as sanitary inspectors often discriminated against Indigenous peoples (1998, 338).

In 1922, Hoshi Pharmaceuticals began experimenting with growing cinchona in two nurseries in Gaoxiong Province in the southwest and in Taidong Province in the southeast. The private plantations in Taiwan, named Lai-sha and Chi-moto respectively, relied solely on Indigenous labour (Ku 2016, 162). The Lai-sha plantation consisted of 20,000 trees and the smaller Chi-moto plantation consisted of 5,000 trees (Nagumo 2011, 1539). In addition to the Lai-sha and Chi-moto plantations, Hoshi Pharmaceuticals established plantations in Kiyomizu, Kasen, Isamulu, Kanadon and Daikei, and they established plantations alongside other private companies (Ku 2016, 171). In 1937, there was increased demand for quinine and "the Ministry of Colonial Affairs requested each institute to contribute a certain area of land for cinchona planting in order to reach the goal of a growing area of 8,000 hectares (almost half of the area under cinchona cultivation in Java), with a corresponding bark production of 2,400 tons (a quarter of that of Java) within ten years" (Ku 2016, 173).

Quinine was not just valuable for the treatment of malaria; it was also used to combat loss of appetite, impotence and anaemia (Yang 2021, 191). Newspapers such as the Tokyo *Asahi Shinbun* extolled the benefits of quinine to the general public. For example, one such Tokyo *Asahi Shinbun* article from 1930 under a feature called "Taishū kagaku" (Popular science) explains to readers how to make medicine out of cinchona bark, instructing them to boil the bark, how long the decoction lasts, and its health benefits ("Taishū kagaku: kina hi no yōhō nado" 1930). The author of this article claims that cinchona bark is helpful for appetite loss, chronic illness, and even recovery from serious illness ("Taishū kagaku: kina hi no yōhō nado" 1930). Hoshi Pharmaceuticals capitalised on the wide variety of benefits associated with cinchona bark, evident in the many advertisements they put out in the *Asahi Shinbun* from 1917 to 1925. Significantly, this is the same time frame in which initial cinchona experiments began in Taiwan and also when Hoshi Pharmaceuticals took such experiments further and established the plantations. We, again, see this emphasis on health in modern Japanese society, and the construction of the "healthy" nation-state was on the backs of Indigenous peoples working at the plantations.

In the advertisements, Hoshi Pharmaceuticals marketed a product called Hoshi Ginseng Quinine Wine (Hoshi ninjin kina budōshu), which they claim is the "best medicine" (*hyakuyaku no chō*), a twist on the saying "wine is the best medicine" ("sake wa hyakuyaku no chō") ("Hoshi ninjin kina budōshu: shin hyakuyaku no chō" 1917). Yang briefly discusses the marketing of this product in his work, providing valuable insight about how Hoshi Pharmaceuticals marketed this wine as a cure-all (Yang 2021, 191). To add a bit more to Yang's observations, Hoshi Pharmaceuticals also claimed that the wine is good for digestive health due to the presence of cinchona as a main ingredient ("ichō o kenzen ni suru kina") ("Hoshi ninjin kina budōshu: shin hyakuyaku no chō" 1917). The advertisement also includes a list of other ailments that the wine purportedly helps with, such as hysteria (*hisuteri*) and malnutrition (*eiyō fusoku naru toki*) ("Hoshi ninjin kina budōshu: shin hyakuyaku no chō" 1917).

Expanding further on Yang's brief discussion of Hoshi Ginseng Quinine Wine, some of the later advertisements also became heavily gendered and racialized, speaking to the fact that in the metropole, quinine was also tied to broader discourses about gendered consumerism, and Western influence. An advertisement from 1921 depicts a white woman named Mary and highlights that Hoshi Ginseng Quinine Wine helps with achieving plump cheeks (hōkyō) and improving overall health ("Hoshi ninjin kina budōshu: Utsukushiki Mary yo" 1921). The company's decision to include the image of a white woman in this advertisement has two layers of significance. First, it speaks to the central role of women as consumers, and second, it also speaks to the role of Western influence in shaping marketing and patterns of consumption. The digital born maps so far do not fully account for this strong connection between cinchona cultivation in the colony, and the consumer culture and "health" of the metropole. A potential avenue for further exploration could thus be the mapping out of this transnational circulation of cinchona bark and quinine within the Japanese Empire based on archival sources such as newspapers.

Although there appears to be no colonial era maps of cinchona cultivation available digitally, Ku (2016) has drawn up insightful maps of cinchona plantations in colonial Taiwan, shedding new light on visualising cinchona cultivation[vi]. In one map, she depicts cinchona cultivation sites during the 1910s (Ku 2016, 161). From this map, we can see that these cinchona plantations are in places with higher altitudes, indicating that they have the most ideal conditions for cinchona cultivation (Ku 2016, 161). Furthermore, Ku indicates which plantations had successful transplants and which ones were failed trials (Ku 2016, 161). Such a depiction of successes and failures speaks to Bender's remarks about the "materiality" of the landscape, referring to the ways in which it "talks back" and "sets up resistances and constraints" (Bender 2006, 2).

Similar to the previous maps we discussed, Ku's maps on cinchona cultivation provide valuable insight about the plantations located in the country as well as the materialities of the landscape in colonial Taiwan, especially in light of the absence of digitised maps depicting cinchona cultivation. However, there is also a limitation to Ku's maps in the sense that such maps do not account for the more transnational circulation of quinine and cinchona bark within the Japanese Empire. As mentioned, Japanese living in the metropole also benefited from cinchona cultivation. This focus on Taiwan could be due to the limited archival resources available regarding cinchona cultivation and distribution. Nevertheless, the mapping out of the transnational circulation of cinchona in the Japanese Empire is a fruitful avenue worthy of further exploration.

Digital Environmental Humanities

As our initial research progressed, we wondered about the linkage between Japan's colonisation and Taiwan's ecology as depicted in maps where land usage and labelling would be codified depending on its value for the Japanese empire. An individual map alone, like an individual text, only tells one piece of the story. What happens, though, when you can bring multiple maps together when investigating the role of natural resources in shaping colonial relations? Maps as storied materials brought together using digital humanities (DH) tools can tell powerful stories within environmental history. As Allen and Queen (2015) attest, "the digital humanities focus on interpretation means that the process of translation and encoding becomes infinitely more complex and inter-relational" (92). One such tool, ArcGIS StoryMaps, allows for close reading of each map to draw connections between the individual embedded stories and show progression of change over time, as well as more fully highlight the limitations of these maps, shedding light on further avenues for exploration. The importance of maps for storytelling underscores how the fields of DH and environmental humanities research are connected. In exploring GIS technology and georeferencing historical events, Richard White (2010), argues that visualising spatial history can reveal previously unseen connections and can illuminate new avenues for exploration. Therefore, the intersection of DH tools with environmental history can lead to new avenues for visualising complex stories within environmental history.[vii]

While DH is an interdisciplinary field that brings together digital technologies and topics in the humanities, environmental humanities have significant connections to broader questions about how to assess

relationships between humans and the nonhuman world in the Anthropocene.[viii] From this context, we acknowledge the emergence of *digital* environmental humanities, which brings together digital tools to help tell nuanced environmental historical narratives. As Stephanie Posthumus and Stéfan Sinclair (2016) attest, "technologies, both analog and digital, have led to seeing and experiencing nature differently than would be otherwise possible" (Posthumus and Sinclair 2016, 3). Moreover, as Joni Adamson argues (2018), "big science has tended to provide facts and data about anthropogenically caused change but offer little 'sense of humans as diverse, interpretive creatures who frequently disagree about values, means, and ends'" (5). Digital environmental humanities thus serves to fill this gap left by big science by highlighting the existence of those diverse viewpoints, as well as the role of power in shaping such dynamics.

In this vein, using digitised print maps, we view our project as an example of how StoryMaps can illuminate the various power dynamics defining environmental history. By bringing together maps depicting natural resources during Japan's colonisation of Taiwan to illuminate the history of cinchona cultivation and ecological imperialism, we also aim to further build upon this flourishing field of digital environmental humanities.[ix] Given our geographic focus, our StoryMap is also an experiment within the field of East Asian DH[x], a field where East Asian studies and digital methodologies converge.

To bring together digitised physical maps to tell a more complete story of cinchona in colonial Taiwan, we created an ArcGIS StoryMap.[ii] Created by Esri, ArcGIS StoryMaps allow users to engage with spatial history and digital storytelling. In the creation of a compilation of maps that illuminate how the Japanese empire viewed Taiwan as an agricultural appendage, we included maps created throughout the 50 years of Japan's occupation. Keyword searches included Japanese and Chinese terms for 'cinchona' and 'quinine' and were conducted using historical materials publicly available digitally from organisations such as the National Diet Library Digital Collections, National Archives of Taiwan, Academia Sinica, Stanford University Gaihozu Map Collection, UC Berkeley's Japanese Historical Map Collection, Wikimedia Commons, and Reed Digital Collections[xi]. Our research into the history of cinchona's role in Japan's colonisation of Taiwan initially incorporated scholarly articles and digitised maps depicting natural resource extraction more broadly.

Given the lack of digitised maps depicting cinchona cultivation, we, following Ku's approach, looked to newspaper archives, and found advertisements and articles that spoke volumes about the significance of cinchona in the metropole, further highlighting the transnational circulation of cinchona in the Japanese Empire. From our research, we can see that maps have played a key role in the construction of the Heideggerian "modern world picture," in which the subject takes control of the world as it is (Heidegger 1977, 129, 152). The subject contends with the materiality of this "world picture," and maps speak to this tension, shedding light on the various inequalities that emerge from the colonial desire of conquering this "modern world picture."

While this paper does not strive to be an exhaustive history of Japan's fifty-year control of Taiwan, nor could it capture

the various narratives, identities, and experiences of the Indigenous communities, we contend that focusing on Japanese efforts to sustain cinchona tree plantations in Taiwan can shed light on how colonial power dynamics were centred around the cultivation and control of natural resources. For example, the cultivation of camphor has already gained scholarly attention, partly seen through the digitization of maps depicting camphor cultivation. In comparison, cinchona cultivation has not received as much scholarly attention, relatively speaking, until recently, despite the centrality of cinchona in maintaining the "health" of the Japanese Empire. Additionally, as previously mentioned, there is a lack of digitised maps that depict cinchona cultivation in general. Therefore, we intended to shed more light on the centrality of cinchona cultivation in the Japanese Empire, and how it provides useful insight regarding the relationship between colony and metropole more broadly. Finally, through addressing this relationship between colony and metropole, we also aimed to highlight both the potential and limits of maps as illustrations of land usage shaped by subjective realities.

References

Adamson, Joni. 2018. "Introduction: The HfE Project and Beyond: New Constellations of Practice in the Environmental and Digital Humanities." *Resilience: A Journal of the Environmental Humanities* 5 (2): 1–20.

Allen, Tania, and Sara Queen. 2015. "Beyond the Map: Unpacking Critical Cartography in the Digital Humanities." *Visible Language* 49 (3): 79.

Asahi Shinbun. 1917. "Hoshi Ninjin Kina Budōshu: Shin Hyakuyaku No Chō," September 26.

---. 1921. "Hoshi ninjin kina budōshu: Utsukushiki Mary yo," January 7.

---. 1930. "Taishū kagaku: kina hi no yōhō nado," January 27.

Barclay, Paul. 2017. *Outcasts of Empire: Japan's Rule on Taiwan's "Savage Border," 1874-1945*. Berkeley: University of California Press.

Bender, Barbara. 2006. "Place and Landscape." In *Handbook of Material Culture: Place and Landscape*. Edited by Christopher Tilley, Webb Keane, Susanne Külcher, Michael Rowlands, and Patricia Spyer. London: SAGE Publications.

Besky, Sarah, and Jonathan Padwe. 2016. "Placing Plants in Territory." *Environment and Society* 7: 9-28.

Campbell, W. 1902. "Formosa under the Japanese: Being Notes of a Visit to the Taichu Prefecture." *Scottish Geographical Magazine* 18 (11): 561–76. https://doi.org/10.1080/00369220208733400.

Chin, Hsien-yu. 1998. "Colonial Medical Politics and Postcolonial Medical Surveillance Systems in Taiwan, 1895-1950s." *Osiris* 13: 326–38.

Crampton, Jeremy W., and John Krygier. 2006. "An Introduction to Critical Cartography." *Acme* 4 (1): 11–33.

Crawford, Matthew James. 2009. "Empire's Experts: The Politics of Knowledge in Spain's Royal Monopoly of Quina (1751-1808)." UC San Diego, PhD dissertation.

De Bunsen, E.H. 1927. "Formosa." *The Geographical Journal* 70 (3): 266–85.

Deb Roy, Rohan. 2017. *Malarial Subjects: Empire, Medicine and Nonhumans in British India, 1820-1909*. Cambridge (UK): Cambridge University Press

Dym, Jordana, and Carla Lois. 2021. "Bound Images: Maps, Books, and Reading in Material and Digital Contexts." *Word and Image* 37 (2): 119–41. https://doi.org/10.1080/02666286.2020.1801262.

Emmett, Robert S., and David E. Nye. 2017. *The Environmental Humanities: A Critical Introduction*. The MIT Press.

Eskildsen, Robert. 2019. *Transforming Empire in Japan and East Asia: The Taiwan Expedition and the Birth of Japanese Imperialism. New Directions in East Asian History*. Palgrave Macmillan.

Eyal, Sara. 2018. "The Fever Tree: From Malaria to Neurological Diseases." *Toxins* 10 (12): 1–12. https://doi.org/10.3390/toxins10120491.

Farman, Jason. 2010. "Mapping the Digital Empire: Google Earth and the Process of Postmodern Cartography." *New Media and Society* 12 (6): 869–88. https://doi.org/10.1177/1461444809350900.

Grassby, Richard. 2005. "Material Culture and Cultural History." *The Journal of Interdisciplinary History* 35 (4): 591–603. https://doi.org/10.1162/0022195043327426.

Harley, J Brian. 1989. "Deconstructing of Map." *Cartographica: The International Journal for Geographic Information and Geovisualization* 26 (2): 1–20.

Heidegger, Martin D. 1977. "The Age of the World Picture." In *The Question Concerning Technology*. Translated by William Lovitt, 115-154. New York: Harper & Row Publishers, Inc.

Henry, Todd A. 2014. *Assimilating Seoul: Japanese Rule and the Politics of Public Space in Colonial Korea, 1910-1945*. Berkeley: University of California Press.

Jørgensen, Finn Arne. 2014. "The Armchair Traveler's Guide to Digital Environmental Humanities." *Environmental Humanities* 4 (1): 95–112. https://doi.org/10.1215/22011919-3614944.

Klein, Bernhard. 2016. "Maps and Material Culture." In *The Routledge Handbook of Material Culture in Early Modern Europe*, edited by Catherine Richardson, Tara Hamling, and David Gaimster. https://doi.org/10.4324/9781315613161.

Ku, Ya-wen. 2016. "The Development of Cinchona Cultivation and 'Kina Gaku' in the Japanese Empire, 1912–45." In *Environment, Modernization and Development in East Asia*, edited by Ts'ui-jung Liu and James Beattie, 157–81.

Lamley, Harry J. 2007. "Taiwan under Japanese Rule, 1895-1945: The Vicissitudes of Colonialism." In *Taiwan: A New History*, edited by Murray A Rubinstein.

Lay, Jinn Guey, Yu Wen Chen, and Ko Hua Yap. 2010. "Geographic Reality versus Imagination in Taiwan's Historical Maps." *Cartographic Journal* 47 (2): 180–89.

https://doi.org/10.1179/000870410X12658023467402.

Liu, Shao-hua, and Shu-min Huang. 2016. "Waterscape and Social Transformation in Southern Taiwan: The Damming of Mudan Creek." In *Environment, Modernization and Development in East Asia*, 111–35.

Liu, Shi-yung. 2004. "Building a Strong and Healthy Empire: The Critical Period of Building Colonial Medicine in Taiwan." *Japanese Studies* (24) 3: 301-314. https://doi.org/10.1080/10371390412331331555.

McDonald, Kate. 2018. "Placing Empire: Travel and the Social Imagination in Imperial Japan." *Contemporary Japan*, 30 (2): 247-250. https://doi.org/10.1080/18692729.2018.1443745.

Morris-Suzuki, Tessa. 2013. "The Nature of Empire: Forest Ecology, Colonialism and Survival Politics in Japan's Imperial Order." *Japanese Studies* 33 (3): 225–42. https://doi.org/10.1080/10371397.2013.845084.

Nagumo, Seiji. 2011. "Historical Research of Cinchona Cultivation in Japan." *Yakugaku Zasshi* 131 (11): 1527–43. https://doi.org/10.1248/yakushi.131.1527.

Presner, Todd, David Shepard, and Yoh Kawano. 2014. *HyperCities: Thick Mapping in the Digital Humanities*. Harvard University Press.

Rankin, K. J., and Poul Holm. 2019. "Cartographical Perspectives on the Evolution of Fisheries in Newfoundland's Grand Banks Area and Adjacent North Atlantic Waters in the Sixteenth and Seventeenth Centuries." *Terrae Incognitae* 51 (3): 190–218. https://doi.org/10.1080/00822884.2019.1679487.

Sinclair, Stéfan, and Stephanie Posthumus. 2016. "Digital? Environmental: Humanities." In *Routledge Companion to the Environmental Humanities*, edited by Jon Christenson, Ursula Heise, and Michelle Niemann, 369–367. Routledge.

Takekoshi, Yosaburō. 1907. *Japanese Rule in Formosa*. Translated by George Braithwaite. London, New York, Bombay and Calcutta: Longmans, Green.

Tavares, Antonio C. 2005. "The Japanese Colonial State and the Dissolution of the Late Imperial Frontier Economy in Taiwan, 1886-1909." *The Journal of Asian Studies* 64 (2): 361-385.

White, Richard. 2010. "What Is Spatial History?" *New York*, no. February: 1–6.

Yang, Timothy. 2012. "Selling an Imperial Dream: Japanese Pharmaceuticals, National Power, and the Science of Quinine Self-Sufficiency." *East Asian Science, Technology and Society* 6 (1): 101–25. https://doi.org/10.1215/18752160-1506520.

---. 2021. *A Medicated Empire: The Pharmaceutical Industry and Modern Japan*. Ithaca: Cornell University Press.

[i] By "cinchona," we are referring to the genus rather than a specific species, as there are multiple species that can be used for quinine extraction.
[ii] Additional maps and descriptions can be viewed at the accompanying ArcGIS StoryMap: https://arcg.is/0Te54W.
[iii] *Takasago* was the antiquated Japanese name for Taiwan that came from an abandoned Japanese settlement on the island in 1628 (McDonald 2017, 122).
[iv] It is important to note that cinchona cultivation is not the only example that speaks to the role of agriculture in structuring colonial relations. Another forest product also occupies a central role in these dynamics: camphor, which was used as a plasticizer for photographic film and early plastics. For key scholarship on the colonial camphor industry, see Paul Barclay, *Outcasts of Empire: Japan's Rule on Taiwan's 'Savage Border,' 1874-1945* (Berkeley: University of California Press, 2017); Antonio Tavares, "The Japanese Colonial State and the Dissolution of the Late Imperial Frontier Economy in Taiwan, 1886-1909," *The Journal of Asian Studies* 64, no. 2 (2005): 361-385, https://www.cambridge.org/core/journals/journal-of-asian-studies/article/japanese-colonial-state-and-the-dissolution-of-the-late-imperial-frontier-economy-in-taiwan-18861909/8F30EB958FC7F6B09BC7560509B911CA.
[v] We see here the presence of a rooted network, in which the cinchona tree, Japanese colonial officials, and the Indigenous peoples of Taiwan all act as nodes. The network of unequal power that existed firmly rooted within Taiwan served to profoundly reshape the land and would be cartographically codified.
[vi] For additional research on cinchona and colonial Taiwan, see Ku, Ya-Wen. 2008. "GIS's Possibility as a Tool of Historical Study of Medicine and Disease in Colonial Taiwan (1895-1945)." *International Symposium on Geoinformatics for Spatial Infrastructure Development in Earth and Allied Sciences*. and Ku (2009). "Anti-Malaria Policy and Its Consequences in Colonial Taiwan." In *Disease, Colonialism, and the State: Malaria in Modern East Asian History*, edited by Ka-che Yip, 31–48.
[vii] For additional examples of digital environmental humanities projects, see Norfish Project (Travis and Holm 2016), the Armchair Traveler's Guide to Digital Environmental Humanities (Jørgensen 2014), Ant Spider Bee (Coulter, Hardenberg, and Jørgensen 2021) and the Alpine Garden MisGuide (Didur 2015).
[viii] According to scholars Robert S. Emmett and David E. Nye, "environmental humanities" is a field that emerged "most immediately through the confluence of simultaneous developments during the 1970s and the 1980s in departments of literature, philosophy, history, geography, gender studies, and anthropology" (Emmett and Nye 2017, 3).
[ix] Regarding projects related to environmental history in Japan, there is "After Hiroshima" (Huang and Rapongan 2015), which "examine[s] radiation ecologies and nuclear colonialism after Hiroshima bombing in the trans-Pacific, trans-Indigenous context."
[x] Notable projects on East Asian DH includes Hoyt Long's (2015) work on visualizing networks of literary translation in the Japanese context, Christina Spiker's (2018) project Mapping Isabella Bird and Daniel O'Grady's project "Japanese Castle Explorer" (O'Grady 2012).
[xi] Both authors have an understanding of the Japanese language. Staff at the National Archives of Taiwan were helpful with keyword suggestions in Mandarin.

KAREN ROSE MATHEWS
University of Miami

Mapping, Materiality, and Merchant Culture in Medieval Italy (12th-14th Century)

From the twelfth to fourteenth century, Genoa, Pisa, and Venice developed into highly successful port cities whose wealth and prosperity depended on international maritime commerce. As such, merchants played a central role in the political, economic, and cultural life of these three mercantile centers. Merchant patronage can be connected to two distinct cultural endeavors, the creation of lavish and eclectic decorative ensembles for civic churches and the production of practical cartographic tools – the portolan chart and text. Both cultural products share characteristics that connect them to mercantile interests and ambitions, forging a distinct merchant aesthetic that visualized the importance of commercial activities and Mediterranean navigation in these Italian port cities. This essay will analyze these distinct manifestations of merchant visual culture as an integrated unit, assessing the influence of mercantile mentalities on the production and reception of cartographic works and civic architecture produced in Venice, Pisa, and Genoa. These maritime cities developed a sophisticated merchant culture that in turn highlighted the education, cultural knowledge, and civic pride of these seaborne traders and defined the creation, reception, and use of disparate visual artifacts (Lopez 1979, 65-66; Le Goff 2001, 123-24; Goldthwaite 1993, 179; Nelson and Zeckhauser 2008, 44; Gautier Dalché 1995, 37).

Recent art historical scholarship has begun to address the tangible connections between artistic production and mercantile endeavors, and the artistic commissions of the maritime republics of Italy have provided fruitful ground for this type of study (Mack 2002; Jardine and Brotton 2000; Howard 2000; Caskey 2004; Mathews 2012; Mathews 2014). The wealth of these republics was based predominantly on international trade in the Mediterranean and the large expenditures by wealthy merchants in these cities on art and architecture raise the questions of how a distinct merchant culture determined a particular aesthetic or approach to artistic production and how this mentality was manifested in the artworks themselves. Though merchant patronage has been characterized as derivative, trickling down from the elite, Michael Baxandall's concept of a cognitive style can provide a framework for determining characteristics that are unique to artworks created by and for merchants (Baxandall 1988, 36-40; Caskey 2004, 22-23, 155-60, 186). Baxandall defines cognitive style as "interpreting skills one happens to possess, the categories, the model patterns, and the habits of inference and analogy" that are socially constructed and culturally relative (Baxandall 1988, 29-30, 40).

The mental equipment that a merchant used to assess an artwork, then, would be distinct from that of someone from another class or profession, as it was based on specifically mercantile education and training. An understanding of a medieval merchant's cognitive style could revolve around the assessment of cartographic works and civic architectural decoration through the framework of a "mapping eye" (Rodini 1995, vol. 1, 58, 71-93). From this perspective, the cultural products of the Italian maritime republics could be understood and categorized as commodities and mementoes, systematized and presented as itineraries and inventories that defined but also reflected a maritime merchant's cognitive style.

The Products of Mercantile Visual Culture

Italian mercantile centers such as Pisa, Genoa, and Venice produced a variety of cartographic works presented in visual and textual formats. One of the oldest texts providing evidence of practical cartography from the medieval period is the *Liber de existencia riveriarum et forma maris nostri Mediterranei* (The Book of the Position of the Coasts and the Form of our Sea, the Mediterranean), compiled in Pisa in the late twelfth to early thirteenth century (Gautier Dalché 1995; Gaspar 2019). The *Liber* was composed by a layman at the behest of a cleric from Pisa. Based on a map, the text provided supplemental information and clarifications to accompany the chart (Edson 2007, 44; Gautier Dalché 1995, 20-24, 39; Gaspar 2019, 6-10, 16). The content of the *Liber* consists of a type of text known as a portolan, a set of sailing directions from port to port around the Mediterranean Sea that included distances and detailed descriptions of ports, natural and manmade landmarks, and coastline morphology (Debanne, 2011; Pujades 2007; Vagnon 2013). The rare survival of a text such as the *Liber* demonstrates that cartographic mentalities were already being codified and rendered in text and image in the late twelfth to early thirteenth century in one of the most vibrant maritime cities in Europe. The *Liber de existencia riveriarum*, then, was the product of a culture in which civic pride and Pisan identity were inextricably linked to the sea and the economic opportunities it provided (Bellomo 2008, 224, 231; Gautier Dalché 1995, 37, 98, 101, 103).

The *Compasso de Navegare* is the oldest surviving portolan text written in the vernacular, dating to the second half of the thirteenth century (Debanne 2011; Gautier Dalché 1995, 39-40; Bellomo 2008, 229). The work was composed in northern Italy, likely in Venice or Genoa, two cities that were to become major cartographic centers in the following century. The *Compasso* consists of sailing directions across the Mediterranean and Black Seas, divided into three parts. The first section of the text traces coastal routes around the seas; the second consists of a short list of long-distance open sea trajectories; the third enumerates routes along the Mediterranean's major islands. Though the text covers the entirety of the Mediterranean, a comprehensive view of the sea was not the intent of the work; rather the *Compasso* aimed to provide specific information about journeys from one port to another. The Mediterranean experience presented here is one of small, discrete voyages divided into segments or fragments. The vast sea was thus subdivided into manageable, intelligible units to trace the safest and most direct route between one location and another.

This early portolan text constitutes a decisive shift in mapping mentalities in its practical nature and lack of engagement with scholarly geographic traditions. Gone are biblical references and the centrality of holy sites; churches and monasteries are only mentioned in the *Compasso* as convenient landmarks, navigational aids that were readily visible from the water (Bellomo 2008, 229; Bacci and Rohde 2014). Portolan texts and charts were the products of lay culture, made by mariners for those who engaged in maritime travel. It also reflected the nautical advancements taking place in the late thirteenth and fourteenth centuries. Led by mariners from the Italian maritime cities and ports in the Crown of Aragón, the development of new navigational tools displayed a heightened interest in Mediterranean travel that, in turn, transformed the way that those involved in maritime exploits saw the world (Vagnon 2013, 459-87; Debanne 2011, 12, 15; Pujades 2007, 414-20, 456-63; Gautier Dalché 1995, 103).

The last cartographic work addressed here is the *Carte pisane*, the oldest surviving medieval nautical chart, likely created in the late thirteenth century in Genoa or Venice (figure 1) (Edson 2007, 33-37; Debanne 2011, 17-18; Pujades 2013b; Campbell 2015). It comprises a significant departure from the *Liber* and *Compasso* in its presentation of navigational data in a purely visual format. The *Carte pisane* consists of an entire animal skin on which the outlines and contours of the Mediterranean and Black Seas have been traced. The animal's neck extends to the east with the map oriented north and the various coastal locations and islands bear labels in black, with red reserved for the more important cities and ports. Accompanying the toponyms are wind roses that extend rhumb lines across the vellum surface. Intended to be used with a magnetic compass, the lines represent compass directions to assist in navigation. This nautical or portolan chart represented the most current data for nautical cartography available at the time, a veritable compendium of navigational knowledge that would have accompanied mariners aboard their ships as they traversed the Mediterranean (Campbell 1987, 371, 377; Hoffman 2013, 30). By the fourteenth century, then, visual formats gained popularity for the presentation of cartographic data with increasingly sophisticated maps presented in large-format charts and atlases.

Figure 1
The *Carte pisane*, late thirteenth century. Photo: Paris, Bibliothèque nationale de France.

A final product of mercantile culture that bridged commercial and cartographic realms is the merchant manual (Lopez and Airaldi 1983, 108). Such manuals began to appear in the late thirteenth century, produced by and for professionals engaged in commerce. The earliest documented merchant's manual, the *Memoria de tucte le mercantie*, was compiled in Pisa and dates to 1278. Additional manuals, such as the *Zibaldone da Canal* and Pegolotti's *Pratica della mercatura*, were products of the fourteenth century (Lopez and Airaldi 1983, 115; Jacoby

2007, vol. 2, 449-64; Dotson 1994, 13). The standard content of these manuals listed weights and measures, prices for commodities, and customs in port cities across the sea. The information is often arranged in the form of binary pairs relating to exchange between two cities, not unlike the routes listed in portolan texts; in one instance a nautical guide is included in the manual itself (Jacoby 1986, 408-09; Gaspar 2019, 4; Dotson 1994, 15). The manuals clearly represent a merchant's worldview as they contain knowledge necessary to succeed in a competitive commercial space. What the author of a text considered essential information could vary dramatically, as some manuals included math problems, romances, and astrological guides, while others contained urban histories that parallel the civic pride on display in lavishly decorated architectural monuments (Sigler 2002; Giusti 2002; Radicati 2002; Morelli and Tangheroni 1994; Ulivi 2002). One late merchant manual that concretizes the connection between commerce and maritime travel is that of Michael of Rhodes, compiled in the mid-fifteenth century by a mariner who sailed with Venice's commercial fleet. The text contains some of the traditional content seen in merchant manuals, but it might be classified more accurately as a maritime or mariner's manual given its emphasis on shipbuilding and navigation and the inclusion of a portolan text with sailing instructions (Stahl 2010, 153, 158; Falchetta 2009a).

Complementing these mercantile, maritime texts and charts were civic architectural structures in Genoa, Venice, and Pisa that reused ancient and foreign objects, or *spolia*, in dense and heterogeneous decorative ensembles. The materiality of these objects, combined with their potential to be understood as war spoils and commercial goods, made them potent carriers of meaning for merchant patrons and audiences. One of the earliest manifestations of a merchant visual style in the Italian maritime republics is the highly original *spolia* decoration found in Pisa. Beginning in the eleventh century, Pisan churches featured architectural decoration consisting of ceramic basins (bacini) imported from the Islamic world (Berti 1991; Berti and Giorgio 2011; Berti and Tongiorgi 1981). At this time, western Europe lacked the technical knowledge to produce glazed ceramics, making their provenance clear; these colorful glazed vessels were made in Islamic pottery centers and then exported across the Mediterranean. Among the early Pisan structures with bacini decoration, the church of San Sisto stands out with its vast number of objects and ceramic types from several production centers (figure 2).

Figure 2
Pisa, Church of San Sisto, west façade, 1087. Photo by author.

The foundation of the church of San Sisto is generally dated to 1087, immediately after a successful joint military cam-

paign conducted by the Pisans and Genoese against the North African cities of al-Mahdiya and Zawila (Berti 1993, 127-28; Garzella 1991, 189). The church was built to celebrate this victorious expedition and was funded with the proceeds from the military campaign (Cowdrey 1977, 18; Scalia 2007, 813-14). San Sisto originally had 129 eleventh-century bacini ornamenting its stone exterior (figure 3). The fifty-two remaining ceramics on San Sisto's facade and side walls, all placed above blind arches immediately below the roofline, consist of products from North Africa, Sicily, Egypt, and Spain (Berti 1997, 25; Berti and Tongiorgi 1981, 49-61). The bacini might have been chosen as appropriate decoration for Pisan churches because of their connection to Mediterranean commerce, a significant source of wealth for Pisa in the eleventh to fourteenth century (Mathews 2014, 16-19). The Pisan fleet battled valiantly to secure safe passage for the city's commercial vessels and the bacini could index this great struggle for maritime supremacy and the material fruits of those labors, with international trade goods such as the foreign and exotic ceramics so proudly displayed on the city's churches.

Figure 3
San Sisto, detail of bacini decoration on west façade. Photo by author.

San Sisto's interior also displays objects and building materials acquired across the Mediterranean. The church's space is articulated by ancient Roman capitals and columns, objects that might have been purchased in port cities or plundered from North Africa. Mounted on an interior wall is a funerary stele from al-Andalus. The stele dates to the eleventh century and is associated with the figure of ʿAbd Allah al-ʿAziz ibn Aghlab al-Murtadā, governor of the Balearic Islands from 1076 to 1094 (Stasolla 1980; Barral 1994; Scalia 2007, 812). It is not known when the object arrived in Pisa, but a likely scenario is that it formed part of the plunder from the Balearic expedition of 1113-1115 (Déléry 2009, 48-49; Scalia 2007, 813; Barral 1994, 122). San Sisto, then, was an early manifestation of a decorative style in Pisa that juxtaposed objects acquired through trade with artworks seized as plunder of war.

The Basilica of San Marco, the doge's chapel, was the showcase for the fame and fortune of Venice as the central religious monument in the city (Vio 2003; Maguire and Nelson 2010). The Fourth Crusade in 1204 constituted a significant moment in Venice's history when the Venetians conquered the Byzantine capital of Constantinople. Complementing the city's new political identity as an empire, then, was a visual culture that highlighted Venice's centrality in the Mediterranean. Luxury objects flowed into the city from Byzantium and the Basilica of San Marco came to be encrusted with a dazzling array of *spolia* and spoils from Mediterranean locales (figure 4) (Fortini Brown 1996, 15-17) (Ciriacono 2017, 8-10; Kovesi 2018, xvi, xviii). The exterior decoration displays an assemblage of columns and capitals, hundreds of them so densely packed that they no longer serve a structural function. More visually intriguing are the reused sculptural panels and other

foreign objects on the church's three façades. The west façade features the greatest ornamentation, consisting of an array of columns and capitals combined with Byzantine reliefs, while the crowning artwork is the set of bronze horses taken from the Hippodrome in Constantinople (figure 5) (Jacoff 1993; Favaretto 2003, 188-91; Galliazzo 1984). The eclectic spoliate assemblage on San Marco, like that on San Sisto in Pisa, defined a distinctive aesthetic that combined plunder of war with objects acquired in Mediterranean markets to express Venice's new civic identity and imperial aspirations.

Figure 4
Venice, Basilica of San Marco, west façade, thirteenth to fourteenth centuries. Photo by Gary Houston.

Figure 5
San Marco, original bronze horses from west façade (Museo di San Marco). Photo: Ttescke.

The church of San Matteo in Genoa, like the Basilica of San Marco, served as a civic religious space and private chapel simultaneously (figure 6). The structure was built by the Doria family, whose members served in the city government, led the Genoese navy, and actively participated in Mediterranean commerce. Their church enjoyed a central location in the city and competed with the cathedral as a potent symbol of Genoese civic identity. The thirteenth-century façade of the Doria family church displays the standard black and white stripes of Genoa's medieval structures and, similar to numerous other churches in the city, is adorned with an array of ancient Roman *spolia* (Müller 2002, 107-64; Toncini Cabella 2001, 21-27; Müller 2003). On the right side of the façade, immediately below a small window, is an ancient sarcophagus (figure 7) (Dufour Bozzo 1967, 23, 45-47; Faedo 1984, 142; Conti 1990, 300, 318-19; Müller 2002, 116-22, 226-29). Two other Roman artworks rest on consoles on either side of the rose window. A bust length figure, now missing its head, is placed on the left and a nude torso is located on the right. Complementing the Roman objects on display were inscriptions incised into the façade (Müller 2003, 15; Müller 2002, 126-33).

Figure 6
Genoa, Church of San Matteo, west façade, thirteenth century. Photo by author.

Figure 7
San Matteo, detail of ancient sarcophagus on the west façade. Photo by author.

The texts on either side of the entrance portal and around the sarcophagus record military victories won by various members of the Doria family and refer to the plunder taken in those battles that came to be housed in the church of San Matteo. The battles recorded here, however, were not fought against foreign adversaries but rather against Italian commercial rivals and the spoils of war collected in San Matteo came exclusively from Pisa and Venice. The Genoese took the sarcophagus from the Venetian-controlled island of Curzola and used it as the burial place for the great general Lamba Doria (Silva 1987, 72-73; Müller 2003, 14). San Matteo's decoration also featured plunder from Pisa; pieces of the great harbor chain taken from the Pisan port after the Genoese victory over the Pisan fleet in 1284 were hung on the façade of the church to complement the ancient Roman objects. On San Matteo, like San Sisto and San Marco, ancient and foreign objects combined with contemporary war spoils highlight the role of the church as a triumphal monument.

The decoration on all these churches defines a merchant aesthetic characterized by beautiful, colorful, textured objects and materials acquired through trade or military conquest. As such, they index the two most important activities of the cities' merchant mariners: war and commerce. Luxury commodities were displayed side by side with war plunder, with the distinction between the two often blurred. Just as important as their means of acquisition was the ability of these objects to reference locales across the Mediterranean with which Pisan, Genoese, and Venetian merchants would have been familiar. This rich and eclectic visual vocabulary was the ideal vehicle for displaying civic pride and mercantile wealth on each city's public monuments.

What all these cultural products of the maritime cities share, then, is a connection to maritime commerce. They could be trade goods themselves, commercial objects acquired across the Mediterranean by the merchants whose success contributed to the wealth and prestige of these Italian cities. They could also be important tools for navigating the seas and conducting trade, focusing on data that was essential to mercantile endeavors. As such, this diverse group of objects, texts,

and maps manifests a mercantile mentality that saw the world through the lens of voyages and trade goods and formulated visual and textual systems that organized, categorized, and contextualized the material culture of merchant cities. The relationship between the objects and materials in a maritime merchant's world and the worldview of international traders was reciprocal; the artworks manifested the mentality of these influential members of society while they also served as the physical basis for a merchant cognitive style. A maritime merchant worldview, then, could encompass the analysis and assessment of material culture through a number of diverse but complementary frameworks: commodities, collections, inventories, itineraries, mementoes, and souvenirs.

Interpretive Frameworks for Merchant Visual Culture

Commodities

These three merchant-oriented cultural products – manuals, maps, and architectural decoration – share a focus on economic and symbolic value. In the economic realm, they enumerate or categorize commodities or can be characterized as consumer goods themselves (Sheehan 2013, 133; Carlton 2012, 29). A merchant manual's primary aim was to present data on trade in luxury goods such as spices and textiles. Knowledge of their provenance, price, and movement around the Mediterranean was essential for successful and lucrative commercial transactions. A mercantile world view, then, made sense of places and things from the perspective of commerce and trade goods, a system in which everything could be estimated in terms of its financial value in relative and absolute terms (Mathews 2017, 208).

If anything was a commodity, then both nautical charts and architectural *spolia* could be perceived and appreciated as commercial products. Both were available for sale in Mediterranean markets; increasingly elaborate maps were made in Genoa, Venice, and Majorca while reused architectural elements could be acquired in numerous port cities across the sea (Fortini Brown 1996, 15; Mathews 2018, 153). The very merchants who participated in Mediterranean commerce were the ones who bought and sold these goods and could estimate their value in economic terms. As commodities, nautical charts and *spolia* began their life histories as functional objects. Portolan texts and charts were meant to be consulted by mariners to assist in navigation (Gautier Dalché 1995, 203; Falchetta 2009b, 269-76). Architectural ceramics or bacini were originally tableware intended for use in middle and upper-class homes (Mathews 2014, 9-10, 19). Their understanding as functional, commercial objects shifted, however, as these objects were put on display or changed physical contexts. In the case of maritime maps, some continued to be used shipboard but others moved into domestic spaces, where they became status symbols and aesthetic objects (Sheehan, 2013; Sheehan 2014, 326). The understanding of bacini and other architectural *spolia* as commodities diminished in significance when they were removed from circulation and became fixed on church façades.

Commodity status, then, was not a state as much as it was a process, and these objects were subject to various classifica-

tions and reclassifications, uses and recontextualizations, as they traveled over distances both conceptual and physical. Their very durability in essence contributed to their long and complicated biographies (Rowlands 2005, 267; Kopytoff 1986, 90). Stone sculptures and ceramic bowls became singularized when they moved from the commercial realm to that of architectural decoration – they became unique, "priceless" artefacts. They could be classified as diverted or terminal commodities in that their new function placed them permanently outside the mercantile realm (Appadurai 1986, 26-29; Kopytoff 1986, 77). Their placement on churches arrested their commodity stage, restricting their circulation and intensifying their symbolic force. The display of architectural *spolia* on public structures and maps in elite homes advertised their value, further enhancing their symbolic worth, while confirming if not elevating the value of similar goods that remained in the commercial sphere of exchange (Rowlands 2005, 267; Appadurai 1986, 28).

The symbolic and aesthetic force of commercial objects complemented their economic worth for merchant patrons and audiences. In an elemental way, their materiality and physical beauty made them attractive (Mathews 2015, 10-11). The gleaming, reflective, and colorful surfaces of glazed ceramics and the bright white marble of ancient tomb sculptures heightened their appeal. The symbolic significance of these reused objects and materials resided in part in their role as trophies. This plunder manifested dominance over political enemies and economic competitors through its public display on important religious structures (Mathews 2016, 67-74). In a competitive Mediterranean environment, appropriated objects visualized a civic identity for these Italian maritime cities that elevated them above their commercial rivals and referenced control of key trade routes and the commodities exchanged along them.

Nautical charts also became increasingly elaborate in the fourteenth and fifteenth centuries as they served as navigational tools, but also decorative objects for the home. Para map or epicartographic additions complemented the basic information provided on portolan charts (Sheehan 2013, 133). These maps were created to outline the coasts and islands, but over time the inland spaces were filled with flags, crests, portraits, topographic features, representations of cities, and animals both real and mythical. Such enhancements created a taste for navigational charts to new owners while appealing to an established merchant clientele in novel ways. As the maps themselves developed into aesthetic objects, the context of their viewing transformed as well. Too precious or beautiful to be used at sea, nautical charts came to grace the public areas of middle class and elite homes (Houssaye Michienzi and Vagnon 2019, 29; Sheehan 2013, 133; Sheehan 2014, 322, 326). In an analogous manner to their *spolia* counterparts on religious structures, the maritime map manifested a merchant identity defined by knowledge of the sea and the port cities located along its coastline. Instead of a visualizing a broader civic identity, the display of a map in a private home was rather a personal status symbol, indicating a cosmopolitan worldview and familiarity with distant locales (Carlton 2012, 28-29, 36). It signaled belonging to an elite social group defined by mercantile education,

cultural sophistication, and maritime knowledge.

The Collection

A merchant mentality informed but was also defined by the gathering of places and things into collections. Such collections were purposeful combinations of disparate elements into a meaningful whole. A collection gained significance through the sheer quantity of items brought together while also highlighting the variety and singularity of the individual elements. Spoliate ensembles were meant to impress through the vast number of objects on display as well as their varied colors, materials, and origins. The significance of a specific object, however, was downplayed as it was subsumed into the collective force of the totality. The places and things compiled in portolans and merchant manuals also comprised vast collections. The merchant manuals listed all the goods circulating across the Mediterranean and the commercial transactions that defined the wealth and prosperity of the Italian maritime cities. The manuals and nautical charts collected the port cities where these goods were traded, demonstrating the extent of each city's economic network and familiarity with numerous locales.

Vast and varied collections implied mastery on the part of the collector, whether an individual or corporate entity (Baudrillard 2009, 49, 53). The trophy ensembles in all these Italian cities allowed each republic to claim dominance over a bitter rival through the sheer number of stolen artifacts put on public display. The numerous objects taken from the enemy enhanced the quality of the victory and painted a picture of concerted and long-standing triumph over a specific adversary. Appropriation thus deprived the enemy of meaningful things and their display in an eclectic plunder collection created a powerful type of politicized decoration on urban monuments that highlighted the dominance of the victorious city (Kinney 1995, 58; Kinney 1997, 120). The plunder could reference military victories that allowed a city to take possession and hold dominion over strategic Mediterranean sites.

Collections of commodities and ports created the illusion of dominance and mastery based on extensive knowledge of the Mediterranean environment. The entire volumes of the *Liber* and the *Compasso* or the overall view of the Mediterranean in the *Carte pisane* visualized dominion over the sea by those who possessed these compendia. The bird's-eye or omniscient view of a map has been addressed at length in the context of charts made for sovereigns who could claim control of territories by having them depicted in cartographic form, either painted on palace walls or incorporated into lavishly illustrated books (Rosen 2015; Birkholz 2004; Carlton 2012). Humbler, mercantile-oriented portolans generally have not been associated with notions of sovereignty, but they should be understood as both political and economic instruments. In the thirteenth and fourteenth centuries, the greatest competition for the Italian maritime republics came from one another and the production of portolan charts in Venice and Genoa could be seen as a manifestation of competitive mapmaking, where each republic attempted to display its control of Mediterranean routes and spaces at the expense of the other (Rosen 2015, 6-7). In both visual and textual formats, the collective force of objects argued for the

political, economic, and cultural supremacy of the city that possessed them, displaying them in visual ensembles or recording them in written works. The vast number of things ornamenting Italian churches attested to their abundance in the city and the wealth and prosperity that brought so many beautiful and luxurious objects to Italy. The hundreds of sites incorporated into the *Liber*, *Compasso*, and *Carte pisane* presented them as known quantities, presuming knowledge of locales Italian merchants and mariners may or may not have visited. The excess of things and the places where they could be procured displayed the economic opportunities offered by Mediterranean trade. Italian maritime cities vied with each other to accrue the great riches garnered from control of maritime commercial networks.

Inventory and Itinerary

Geographical data and *spolia* ensembles could be understood from the broader perspective, then, of a comprehensive collection in which the totality of items amassed highlighted the collector's mastery and dominion. The organization systems used to understand and display the collection's contents, however, present another facet of a merchant mentality: the tendency to see places and things through the lens of an itinerary or inventory. The discrete units of the map or chapters of the text encouraged those consulting portolans to think about the Mediterranean in a non-holistic manner, concentrating on individual places and peoples as allies or adversaries (Goldie 2015, 703-04; Campbell 1987, 387). A particularly evocative manifestation of this emphasis on sequential, modular units of space can be seen in a type of text known as an *isolario*, or book of islands, that first appeared in the fifteenth century. Combining text and maps in a book format, the *isolario* highlighted the importance of these discrete land masses while displaying their role as connecting nodes across the Mediterranean (Conley 1996; Tolias 2007; Cachey 2010). In a cartographic framework, points on the map represented metonymically a culture or political entity just as the architectural fragments did on Italian civic structures. The organization of space on a map resembled the encrusted exteriors of public architectural structures as the chart pinpointed the origin and traced the circulation of the consumer goods exchanged by Italian merchants. Both organizational systems focused on individual elements arranged in a sequential inventory or catalogue. The bacini ringing the exterior of San Sisto and the disparate spoliate objects covering San Marco were analogous to the succession of ports and cities in portolan texts and charts (figures 8A and 8B).

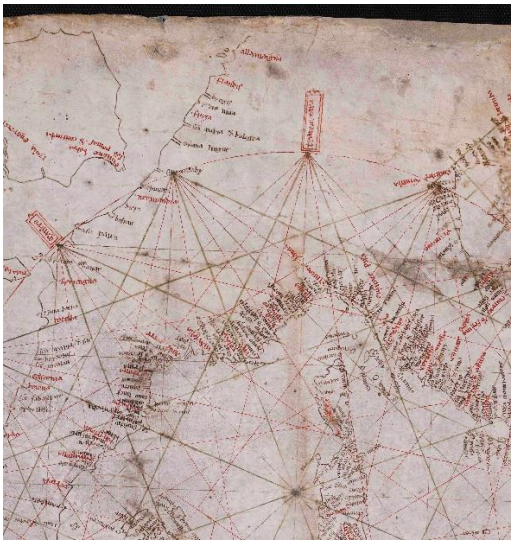

Figure 8A (facing) & 8B (above) (A) bacini on San Sisto west façade and (B) *Carte pisane* place names along the Mediterranean coast. Photo: (A) by author; (B) Paris, Bibliothèque Nationale.

Lists provided a comprehensive catalogue to allow viewers and readers to make sense and manage the consumption of the vast amount of data compiled. As such, they were the central organizing principle for merchants' manuals and portolan texts that assembled geographical locations, goods, weights, measures, interest and exchange rates. A spatial sequence subdivided the data into comprehensible units, mimicking the physical travel from one port to another undertaken by Italian maritime merchants. The logical sequence of coastal cities in portolan charts and manuals could also have been mapped on the public architecture of these Italian ports, with distinct spoliate objects corresponding to sites on a map. Mercantile-oriented audiences would have recognized the provenance of the objects on display and appreciated their spatial arrangement that echoed the visual systems of cartography, albeit on a monumental scale. Such inventories were not disinterested, however, and conveyed the perspective and worldview of those who created them. The inventory and itinerary thus presented and perpetuated a maritime merchant's viewpoint that focused on taxonomies, hierarchies, and relationships between people, places, and things (Yale 2014, 289, 294-95).

Memory and Souvenirs

A characteristic that maps, manuals, and architectural *spolia* share is a tension between tradition and innovation. Portolan charts, texts, and merchant manuals contained data that required continual emendation to be accurate and up to date. Nonetheless, older texts and charts continued to be used for decades if not centuries after they were written or drawn (Pegolotti 1936, xxvii; Jacoby 1986, 409-10; Dotson 1994, 17, 24; Vagnon 2013, 454). In a more general sense, what these mercantile instruments offered was the appearance of comprehensiveness and mastery of a vast array of knowledge. The universalizing symbolic force that reinforcing traditional beliefs counterbalanced the detail-oriented content in these mercantile maritime instruments that assisted traders and mariners in their professions. As instruments of power for the Italian maritime republics, architectural spoils, navigational charts, and merchant manuals had the potential to construct narratives, configure cultures, and define memory in a way that highlighted the economic and political predominance of each city.

The presentation of data in portolans and merchant manuals could thus be as evocative as it was authoritative. The visual and textual content central to a mer-

chant's worldview may have been recorded and displayed as a mnemonic device (Campbell 2013, 51-53; Sheehan 2014, 325; Gautier Dalché 1995, 40). The transcribing and preservation of this data could assist merchants in remembering places, prices, and merchandise (Goldie 2015, 723; Pujades 2013a, 65). The goods on the architectural structures could visualize the Mediterranean locales plotted on nautical charts, evoking voyages and the interaction with various cultures as Italian mariners traversed the sea to engage in war or conduct commerce. Memories of journeys, transactions, and cultural exchange and interaction were preserved and shared in a concrete manner through physical objects that served as souvenirs (Houssaye Michienzi and Vagnon 2019, 29; Rodini 1995, vol 1, 84-87). Mementoes of places and events ornamented civic structures and graced private homes to be shared with small groups of friends, colleagues, and rivals or larger communal audiences. The invocation of memory gave this predominantly spatial data a temporal dimension, highlighting continuity over centuries or the volatility of the current Mediterranean environment that was in a constant state of redefinition. Memory could be corporate as well in these Italian cities where mercantile endeavors were central to political identity and economic prosperity. Maps, manuals, and *spolia* recorded a Pisan, Genoese, or Venetian worldview and the connection to strategic places and valuable things that distinguished each city from one another.

Conclusion

A spoliate aesthetic had a long pedigree in the Italian merchant republics, emerging in the eleventh century as an apposite way to visualize mercantile and military endeavors through the use of *spolia* and spoils of war. In the late twelfth century, portolan texts and charts offered a new way of conceptualizing this relationship in terms of mapping. Cartography provided the technological mechanism to plot the origin and movement of the highly mobile objects that decorated Italian civic monuments. The explosion of cartographic instruments in the thirteenth and fourteenth centuries, however, had the potential to create new forms of merchant visuality, a "mapping eye," where artistic production in the cities of Venice, Genoa, and Pisa was perceived and interpreted through the conceptual logic and organization of the nautical chart. The propensity of Italian maritime merchants to view their world through a mapping mentality defined the cultural products of these cities and encouraged mercantile-oriented audiences to consume visual and textual culture in a particular way, perpetuating and concretizing this world view. *Spolia* collections and mercantile tools – manuals and portolan charts and texts – became increasingly more complex and intertwined to reflect the opportunities and challenges faced by these merchant mariners in the fluid Mediterranean environment of the later Middle Ages.

References

Appadurai, Arjun. 1986. "Introduction: Commodities and the Politics of Value." In *The Social Life of Things*: *Commodities in Cultural Perspective*, edited by Arjun Appadurai, 3-63. Cambridge: Cambridge University Press.

Bacci, Michele, and Martin Rohde, eds. 2014. *The Holy Portolano: The Sacred Geography of Navigation in the Middle Ages*. Berlin: De Gruyter.

Barral, José. 1994. "Encontrada la lauda del emir al-Murtada, primer rey independiente de las Islas." *Anuario Ibiza Formentera* 12: 119-26.

Baudrillard, Jean. 2009. "Subjective Discourse or the Non-Functional System of Objects." In *The Object Reader*, edited by Fiona Candlin and Raiford Guins, 41-63. London: Routledge.

Baxandall, Michael. 1988. *Painting and Experience in Fifteenth Century Italy: A Primer in the Social History of Pictorial Style*. Second edition. Oxford: Oxford University Press.

Bellomo, Elena. 2008. "Sapere nautico e geografia sacra alle radici dei portolani medievali (secoli XII-XIII)." In *Dio, il mare, e gli uomini*, edited by Luciano Fanin, 215-41. Verona: Cierre Edizioni.

Berti, Graziella. 1991. "Bacini." In *Enciclopedia dell'arte medievale*, vol. 2. Rome: Istituto della Enciclopedia Italiana.

---. 1993. "Pisa: Dalle importazioni islamiche alle produzioni locali di ceramiche con rivestimenti vetrificati (seconda metà X–prima metà XVII secolo)." In *Pisa, Piazza Dante: Uno spaccato della storia pisana, la campagna di scavo 1991*, edited by Stefano Bruni, 119-43. Pontedera: Cassa di Risparmio.

---. 1997. *Le ceramiche medievali e post-medievali: Pisa, Museo Nazionale di San Matteo*. Florence: All'Insegna del Giglio.

Berti, Graziella, and Liana Tongiorgi. 1981. *I bacini ceramici medievali delle chiese di Pisa*. Rome: L'Erma di Bretschneider.

Berti, Graziella, and Marcella Giorgio. 2011. *Ceramiche con coperture vetrificate usate come "bacini"*. Florence: All'Insegna del Giglio.

Birkholz, Daniel. 2004. *The King's Two Maps: Cartography and Culture in Thirteenth-century England*. New York: Routledge.

Cachey, Theodore. 2010. "From the Mediterranean to the World: A Note on the Italian 'Book of Islands' (isolario)." *California Italian Studies* 1: 1-13.

Campbell, Tony. 1987. "Portolan Charts from the Late Thirteenth Century to 1500." In *The History of Cartography, volume 1: Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean*, edited by Brian J. Harley and David Woodward, 371-463. Chicago: University of Chicago Press.

---. 2013. "Why the Artificial Shapes for the Smaller Islands on the Portolan Charts (1330-1600) Help to Clarify Their Navigational Use." *Comité français de cartographie* 216: 47-65.

---. 2015. "Map History: History of Cartography." http://www.maphistory.info/CartePisaneTEXT.html.

Carlton, Genevieve. 2012. "Making an Impression: The Display of Maps in Sixteenth-century Venetian Homes." *Imago Mundi* 64 (1): 28-40.

Caskey, Jill. 2004. *Art and Patronage in the Medieval Mediterranean: Merchant Culture in the Region of Amalfi*. New York: Cambridge University Press.

Ciriacono, Salvatore. 2017. *Luxury Production, Technological Transfer and International Competition in Early Modern Europe*. Leipzig: Leipziger Universitätsverlag.

Conley, Tom. 1996. "Virtual Reality and the 'Isolario'." *Annali d'Italianistica* 14: 121-30.

Conti, Graziella. 1990. "I Doria e l'"antico'." *Storia dell'arte* 73: 297-331.

Cowdrey, H.E.J. 1977. "The Mahdia Campaign of 1087." *English Historical Review* 92 (362): 1-29.

Debanne, Alessandra. 2011. *Lo Compasso de navegare: Edizione del codice Hamilton 396 con commento linguistico e glossario*. Brussels: P.I.E. Peter Lang.

Déléry, Claire. 2009. "Using *Cuerda Seca* Ceramics as a Historical Source to Evaluate Trade and Cultural Relations between Christian Ruled Lands and Al-Andalus, from the Tenth to Thirteenth Centuries." *Al-Masāq* 21 (1): 31-58.

Dotson, John. 1994. *Merchant Culture in Fourteenth Century Venice: The Zibaldone Da Canal*. Binghamton: Medieval and Renaissance Texts and Studies.

Dufour Bozzo, Colette. 1967. *Sarcofagi romani a Genova*. Genoa: Fratelli Pagano.

Edson, Evelyn. 2007. *The World Map, 1300-1492*. Baltimore, MD: Johns Hopkins University Press.

Faedo, Lucia. 1984. "Conoscenza dell'antico e reimpiego dei sarcofagi in Liguria." In *Colloquio sul reimpiego dei sarcofagi romani nel Medioevo*, edited by Bernard Andreae and Salvatore Settis, 133-54. Marburg: Verlag des Kunstgeschichtlichen Seminars.

Falchetta, Piero. 2009a. "The Portolan of Michael of Rhodes." In *The Book of Michael of Rhodes: A Fifteenth-century Maritime Manuscript*, edited by Pamela Long, David McGee, and Alan Stahl, 193-210. Cambridge, MA: The MIT Press.

---. 2009b. "The Use of Portolan Charts in European Navigation during the Middle Ages." In *Europa im Weltbild des Mittelalters: Kartographische Konzepte*, edited by Ingrid Baumgärtner and Hartmut Kugler, 269-76. Berlin: De Gruyter.

Favaretto, Irene. 2003. *Il Museo di San Marco*. Venice: Marsilio.

Fortini Brown, Patricia. 1996. *Venice and Antiquity: The Venetian Sense of the Past*. New Haven, NH: Yale University Press.

Galliazzo, Vittorio. 1984. "I cavalli di San Marco: Una quadriga greca o romana?" *Faventia* 6 (2): 99-126.

Garzella, Gabriella. 1991. "Il Tempio di S. Sisto in Corte Vecchia nell'assetto urbano di Pisa medioevale." In *Momenti di storia medioevale pisana: discorsi per il giorno di S. Sisto*, edited by Ottavio Banti and Cinzio Violante, 189-98. Pisa: Pacini.

Gaspar, Joaquim Alves. 2019. "The *Liber de existencia riveriarum* (c. 1200) and the Birth of Nautical Cartography." *Imago Mundi* 71 (1): 1-21.

Gautier Dalché, Patrick. 1995. *Carte marine et portulan au XII^e siècle: Le Liber de existencia riveriarum et forma maris nostri Mediterranei (Pise, circa 1200)*. Rome: École française de Rome.

Giusti, Enrico. 2002. *Un ponte sul Mediterraneo: Leonardo Pisano, la scienza araba e la rinascita della matematica in Occidente*. Florence: Edizioni Polistampa.

Goldie, Matthew Boyd. 2015. "An Early English Rutter: The Sea and Spatial Hermeneutics in the Fourteenth and Fifteenth Centuries." *Speculum* 90 (3): 701-72.

Goldthwaite, Richard. 1993. *Wealth and the Demand for Art in Italy, 1300-1600*. Baltimore, MD: Johns Hopkins University Press.

Hoffman, Catherine, et al. 2013. "How Portolan Maps Were Made and Used Through the Centuries." In *The Golden Age of Maritime Maps: When Europe Discovered the World*, edited by Catherine Hoffman, Hélène Richard, and Emmanuelle Vagnon, 30-36. Buffalo, NY: Firefly Books.

Houssaye Michienzi, Ingrid, and Emmanuelle Vagnon. 2019. "Commissioning and Use of Charts Made in Majorca c. 1400: New Evidence from a Tuscan Merchant's Archive." *Imago Mundi* 71 (1): 22-33.

Howard, Deborah. 2000. *Venice & the East: The Impact of the Islamic World on Venetian Architecture 1100-1500*. New Haven, NH: Yale University Press.

Jacoby, David. 1986. "A Venetian Manual of Commercial Practice from Crusader Acre." In *I comuni italiani nel regno crociato di Gerusalemme*, edited by Gabriella Airaldi and Benjamin Kedar, 401-28. Genoa: Istituto di Medievistica.

---. 2007. "The Pisan Commercial Manual of 1278 in the Mediterranean Context." In *Quel mar che la terra inghirlanda: In ricordo di Marco Tangheroni*, edited by Franco Cardini and Maria Luisa Ceccarel-li Lemut, 2: 449-64. 2 vols. Pisa: Pacini.

Jacoff, Michael. 1993. *The Horses of San Marco and the Quadriga of the Lord*. Princeton, NJ: Princeton University Press.

Jardine, Lisa, and Jeremy Brotton. 2000. *Global Interests: Renaissance Art between East and West*. Ithaca, NY: Cornell University Press.

Kinney, Dale. 1995. "Rape or Restitution of the Past? Interpreting *Spolia*." In *The Art of Interpreting*, edited by Susan C. Scott, 52-67. University Park, PA: Department of Art, Pennsylvania State University.

---. 1997. "*Spolia: Damnatio* and *renovatio memoriae*." *Memoirs of the American Academy in Rome* 42: 117-48.

Kopytoff, Igor. 1986. "The Cultural Biography of Things: Commoditization as Process." In *The Social Life of Things: Commodities in Cultural Perspective*, edited by Arjun Appadurai, 64-91. Cambridge: Cambridge University Press.

Kovesi, Catherine. 2018. "Luxury and the Ethics of Greed in Early Modern Italy: An Introduction." In *Luxury and the Ethics of Greed in Early Modern Italy*, edited by Catherine Kovesi, xv-xxx. Turnhout: Brepols.

Le Goff, Jacques. 2001. *Marchands et banquiers du Moyen-Âge*. Ninth edition. Paris: Presses Universitaires de France.

Lopez, Robert. 1979. "The Culture of the Medieval Merchant." *Medieval and*

Renaissance Studies: Proceedings of the Southeastern Institute of Medieval and Renaissance Studies 8: 52-73.

Lopez, Robert, and Gabriella Airaldi. 1983. "Il più antico manuale italiano di pratica della mercatura." *Miscellanea di studi storici* 2: 99-133.

Mack, Rosamond. 2002. *Bazaar to Piazza: Islamic Trade and Italian Art, 1300-1600*. Berkeley: University of California Press.

Maguire, Henry, and Robert Nelson, eds. 2010. *San Marco, Byzantium and the Myths of Venice*. Washington, DC: Dumbarton Oaks Research Library and Collection.

Mathews, Karen Rose. 2012. "Plunder of War or Objects of Trade? The Reuse and Reception of Andalusi Objects in Medieval Pisa." *Journal of Medieval Iberian Studies* 4 (2): 233-58.

---. 2014. "Other Peoples' Dishes: Islamic *Bacini* on Eleventh-Century Churches in Pisa." *Gesta* 53 (1): 5-23.

---. 2015. "Decorating with Things: *Spolia* as Material Culture in the Italian Maritime Republics, 1100-1300." *BFO-Journal* 1: 4-13. http://bauforschungonline.ch/bfo-journal-12015.html

---. 2016. "Holy Plunder and Stolen Treasures: Portable Luxury Objects as War Trophies in the Italian Maritime Republics, 1100-1400." In *More than Mere Playthings: The Minor Arts of Italy*, edited by Julia Fischer, 59-83. Newcastle: Cambridge Scholars Publishing.

---. 2017. "Defining a Merchant Identity and Aesthetic in Pisa: Muslim Ceramics as Commodities, Mementos, and Architectural Decoration on Eleventh-century Churches." In *Postcolonising the Medieval Image*, edited by Eva Frojmovic and Catherine Karkov, 196-217. London: Routledge.

---. 2018. *Conflict, Commerce and an Aesthetic of Appropriation in the Italian Maritime Cities, 1000-1150*. Leiden: Brill.

Morelli, Marcello, and Marco Tangheroni, eds. 1994. *Leonardo Fibonacci: Il tempo, le opere, l'eredità scientifica*. Pisa: Pacini.

Müller, Rebecca. 2002. Sic hostes Ianua frangit: *Spolien und Trophäen im mittelalterlichen Genua*. Weimar: VDG.

---. 2003. "Constructing Fame in a Medieval Town." *Medium aevum quotidianum* 47: 8-32.

Nelson, Jonathan K., and Richard Zeckhauser. 2008. *The Patron's Payoff: Conspicuous Commissions in Italian Renaissance Art*. Princeton, NJ: Princeton University Press.

Pegolotti, Francesco Balducci. 1936. *La pratica della mercatura*, edited by Allan Evans. Cambridge, MA: The Mediaeval Academy of America.

Pujades, Ramon. 2007. *Les cartes portolanes: La representació medieval d'una mar solcada*. Barcelona: Lunwerg.

---. 2013a. "Navigational Maps: The First Widely Distributed Maps." In *The Golden Age of Maritime Maps: When Europe Discovered the World*, edited by Catherine Hoffman, Hélène Richard, and Emmanuelle Vagnon, 60-65. Buffalo, NY: Firefly Books.

---. 2013b. "The Pisana Chart: Really a Primitive Portolan Chart Made in the 13th Century?" *Cartes et géomatique* 216: 17-32.

Radicati, Luigi. 2002. *Fibonacci tra arte e scienza*. Milan: Silvana.

Rodini, Elizabeth. 1995. "*Translatio Sancti Marci*: Displaying the Levant in Late Medieval and Early Modern Venice." PhD dissertation, University of Chicago. 2 vols.

Rosen, Mark. 2015. *The Mapping of Power in Renaissance Italy: Painted Cartographic Cycles in Social and Intellectual Context*. Cambridge: Cambridge University Press.

Rowlands, Michael. 2005. "Value and the Cultural Transmission of Things." In *Commodification: Things, Agency, and Identities: (The Social Life of Things Revisited)*, edited by Wim van Binsbergen and Peter Geschiere, 267-81. Münster: Lit.

Scalia, Giuseppe. 2007. "Pisa all'apice della gloria: l'epigrafe araba di San Sisto e l'epitafo della regina di Maiorca." *Studi medievali*, ser. 3 (48): 809-28.

Sheehan, Kevin. 2013. "Aesthetic Cartography: The Cultural Function of Portolan Charts from 1300 to 1700." *Imago Mundi* 65 (1): 133-35.

---. 2014. "The Functions of Portolan Maps: An Evaluation of the Utility of Manuscript Nautical Cartography from the Thirteenth through Sixteenth Centuries." PhD Dissertation, University of Durham.

Sigler, L.E., ed. and trans. 2002. *Fibonacci's Liber Abaci: A Translation into Modern English of Leonardo Pisano's Book of Calculation*. New York: Springer.

Silva, Augusta, ed. 1987. *Corpus Inscriptionum medii Ævi Liguriæ*. Genoa: Istituto di Medievistica.

Stahl, Alan. 2010. "Michael of Rhodes and the Birth of the Mariner's Manual." *Journal of Early Modern History* 14: 151-63.

Stasolla, Maria Giovanna. 1980. "L'iscrizione araba della chiesa di San Sisto." *Studi maghrebini* 12: 99-102.

Tolias, George. 2007. "Isolarii, Fifteenth to Seventeenth Century." In *The History of Cartography, volume 3: Cartography in the European Renaissance*, edited by David Woodward, 263-84. Chicago: University of Chicago Press.

Toncini Cabella, Alessandra. 2001. *Chiese e parrocchie gentilizie a Genova: Aristocrazia, arte, devozione*. Genoa: De Ferrari.

Ulivi, Elisabetta. 2002. "Scuole e maestri d'abaco in Italia tra Medioevo e Rinascimento." In *Un ponte sul Mediterraneo: Leonardo Pisano, la scienza araba e la rinascita della matematica in Occidente*, edited by Enrico Giusti, 121-60. Florence: Edizioni Polistampa.

Vagnon, Emmanuelle. 2013. "La représentation cartographique de l'espace maritime." In *La terre: Connaissance, représentations, mesure au Moyen Âge*, edited by Patrick Gautier Dalché, 443-503. Turnhout: Brepols.

Vio, Ettore, ed. 2003. *St. Mark's: The Art and Architecture of Church and State in Venice*. New York: Riverside Book Company.

Yale, Elizabeth. 2014. "Making Lists: Social and Material Technologies in the Making of Seventeenth-century British Natural History." In *Ways of Making and Knowing: The Material Culture of Empirical Knowledge*, edited by Pamela Smith, Amy Meyers, and Harold Cook, 280-301. Ann Arbor: University of Michigan Press.

ADAM McKEOWN
Tulane University

Mapping Ideas in the Fortress-Cities of Civitates orbis terrarum

The third volume of *Civitates orbis terrarum*, first published in 1581, includes a group of eight towns spread across four pages, with each town depicted in steep bird's-eye perspective.[i] The eight towns are Avesnes, Beaumont, Charlemont, Chimay, Landrecies, Mariembourg, Philippeville, and Walcourt (figures 1 and 2). With the exception of Avesnes, all eight are within one hundred kilometers of each another along what was then the border between France and the Holy Roman Empire. Five of these towns feature bastioned trace fortifications, which were developed in the sixteenth century in response to artillery warfare and are characterized by angled walls and arrowhead-shaped bastions. Three of these towns – Mariembourg, Philippeville, and Charlemont – were purpose-built as fortress-cities in the sixteenth century by Imperial engineers and named after Habsburg rulers (Martens 2019b, 25-48).[ii] Given their proximity and the geographical organization of the atlas, it makes sense that these towns are grouped conspicuously together, except that geographic coherence is not an inevitable consequence of proximity nor is proximity an inevitable consequence of linear distance. This grouping, rather, reflects a process, one inherent to the map as a genre, of imagining and prioritizing relationships in the human world and developing from those relationships a persuasive narrative (Harley and Woodward 1987, xvi; Gillies 1994, 54; Gordon and Klein 2001, 3). In this case, the grouping of the towns reinforces a relationship between them already established in discourse, one in which the bastioned trace plays a crucial role. *Civitates orbis terrarum* creates a visual narrative of this relationship by adapting its source material in order to emphasize the bastioned trace fortification systems represented in the group. The process by which these maps isolate and display the sophisticated geometry of the bastioned trace sheds light on the larger process by which new fortification technology was translated into popular print as a visual entertainment.

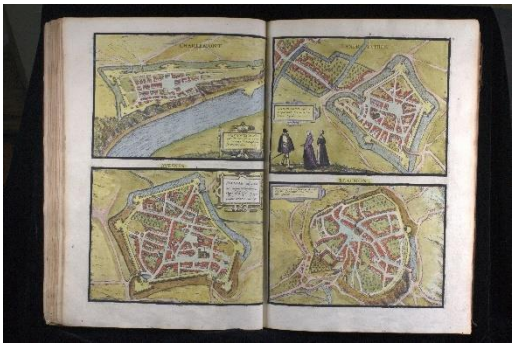

Figure 1
from *Civitates orbis terrarum* (1581).
Courtesy of Queens' College Library.

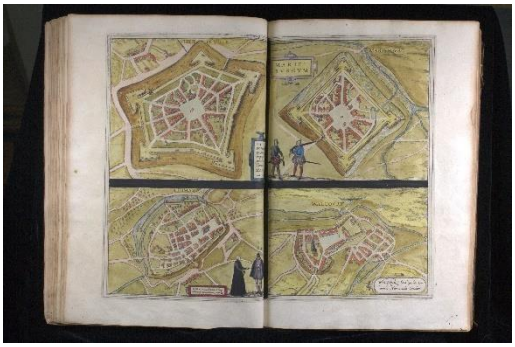

Figure 2
from Civitates orbis terrarum (1581).
Courtesy of Queens' College Library.

Before going forward, it is necessary to say that while this essay is concerned with the bastioned trace, it is written from the perspective not of an architectural or military historian but of a literary scholar interested in the bastioned trace as an important element of early modern textual and visual culture. This essay would not have been possible without the archival heavy-lifting of Pieter Martens, Martha Pollak, Mary Henninger-Voss, Marion Hilliges, Morgan Ng, and so many other architectural historians who have reintroduced the world to the bastioned trace in the twenty-first century. It will very often draw on their expertise, but it does not attempt to duplicate their efforts or develop their methodologies. Its objective is not to reinterpret the form, function, or history of fortifications or to reconsider how any given fortification might have cooperated with other infrastructure in what Fernando Cobos-Guerra has called a "territorial system" (2015). Its goal is, instead, to examine how images of these objects work as elements of narrative in a world of books. For this reason, it will avoid specialized military and architectural terminology – and specialized literary critical terminology – to the greatest extent possible.

The exciting thing, from the perspective of a literary scholar, is that the bastioned trace is part of the real world of early modern Europe and a character in a book. The bastioned trace fortification systems were real structures, and images of them were available to connoisseurs through loose prints, to a coterie of professional architects and scholars through manuscripts, and to state and military decisionmakers through three-dimensional models. The scale of the distribution of these representations expanded exponentially, however, through popular cartography and through *Civitates orbis terrarum* specifically, which was published in six volumes and dozens of editions in three languages for over forty years. *Civitates orbis terrarum* also regularized popular experience with the bastioned trace in that suddenly a whole lot of people were looking at the same handful of images through the same medium. So while bastioned trace fortifications can and should be approached as structures designed by architects, built by princes, and placed within territorial systems, they also need to be approached as "paper cities," to borrow Annalisa Dameri's useful phrase, created by engravers, arranged by printers, and sold as entertainment to the book-buying public (2016, 271-93). What is more, they were paper cities within the emerging genre of popular cartography, whose conventions were not yet fixed and that straddled a developing but inconsistent divide between the map as a special kind of image characterized by objectivity and scientific accuracy and the map as another kind of artwork that would have been expected to delight as well as teach (Maier 2012, 712-13). "Like texts and like paintings," as Basile Baudez has recently argued, "maps were made to convey information, but equally intended to please and to convince" (2021, 54).

How the bastioned trace worked within an emerging genre, how it helped to shape that genre, and how it was itself shaped within visual culture through that genre are the bigger questions informing this essay. The hope is that some of these questions can be answered by reading outward from the group of eight cities in the third volume of *Civitates orbis terrarum*.

Why Georg Braun, Frans Hogenberg, and Simon van de Neuvel, the brain trust behind *Civitates orbit terrarum*, decided to publish the group of eight cities as a group of eight cities is not precisely known. In general, the editorial team added maps to subsequent volumes of *Civitates orbis terrarum* as they became available and categorized them geographically – not infrequently with multiple maps on the same page, so a simple answer is that these towns are all in the same region, the editors acquired them between the publication of the second and third volumes, and they grouped them in a way that is not all that unusual for the atlas (Van der Krogt 2008). But the geographical relationship mapped in the grouping reflects a process of rationalizing the border country between France and the Holy Roman Empire as a coherent place, one that has precedents in discourse and that revolves in discrete but cooperating ways around the bastioned trace.

Each city view in the group has been attributed to Jacob van Deventer, an accomplished Mechlin cartographer who was commissioned by Philip II to map every town in the Low Countries between 1558 and 1572 (Fussel 2008; Vollen-Bronck 2009, 2; Dupont 2020, 17-18; Kagan 1986). The survey was undertaken probably for administrative purposes, although its objectives could have been more specifically military. Either way, the survey was intended to facilitate Imperial governance of the Low Countries, and van Deventer's maps were drawn methodically in order to provide accurate information about the fortifications of individual towns as well as their immediate surroundings. While van Deventer's works have recently been compiled and re-examined by Reinout Rutte and Bram Vannieuwenhuyze, the precise mechanism by which maps drawn for this government commission found their way into *Civitates orbis terrarum* is unclear (Rutte and Vannieuwenhuyze, 2018; Vannieuwenhuyze 2019, 4-13; Dupont 2021). Van Deventer was in dispute with Spanish officials over payment at the time he fled Mechlin for Cologne when, ironically, the forces of the prince who employed him sacked the city in 1572. In Cologne, he may have reconnected with Frans Hogenberg, who was also originally from Mechlin and the principal engraver for *Civitates orbis terrarum*. Hogenberg, presumably, incorporated many of the images into the ongoing atlas project after van Deventer's death in 1575 (Deys 1989). Whether these maps leaked into popular print or had simply lost their proprietary or strategic value by the late 1570s – and what role van Deventer might have played in bringing them to press – await the discovery of new evidence. Hogenberg had previously been in trouble with the Imperial administration for printing "visual reports" of Protestant uprisings in the Low Countries and likely had few compunctions about incorporating high-quality materials into a lucrative book project (Voges 2021, 303-4).

The maps as they appear in *Civitates orbis terrarum* are not exactly van Deventer's maps, however. They retain some but not all of the features that would have made

them most valuable to Imperial officials. Unfortunately, only two thirds of the maps van Deventer created for this survey survive, and any maps he might have drawn of Charlemont and Philippeville are not among them. Yet, much can be gleaned from comparing van Deventer's extant maps with their counterparts in the group of eight. It is clear from a glance that the maps in *Civitates orbis terrarum* use the scale of van Deventer's miniature versions with regard to the size of the town relative to the size of the map. It is generally supposed that the miniatures are cartoons and a vestige of van Deventer's drafting technique. With such an onerous task to perform, he worked methodically and efficiently to capture the most critical information about the town in the miniature before transferring the miniature image to the finished map and framing off the miniature as a separate map (Deys 1989; Vollen-Bronck 2009). These miniatures eliminate most interior and exterior detail other than the outline of the walls and the routes of major streets, which are roughed in as dotted lines.

Because the versions of the towns that appear in *Civitates orbis terrarum* retain the proportions of van Deventer's miniatures, they also exclude most of the information about the towns' physical and social situations available in van Deventer's finished maps (Dupont 2021, 16). The *Civitates orbis terrarum* maps also embellish the wall systems by adding a subtle three-dimensionality and by covering open spaces around the outline of the wall systems with decorations. The map of Avesnes in *Civitates orbis terrarum*, for example, eliminates the suburbs included in van Deventer's miniature (figure 3), and the resulting empty space is covered by a cartouche. In the case of Landrecies (figure 4), the vast green space of the Sambre valley partially visible in van Deventer's miniature is filled in with a cartouche and fanciful images of people in local dress of the sort that can be found in the corners of pages throughout the atlas. In both cases, the isolation of the cities and the elimination of other geographic information calls attention to the impressive bastioned trace systems installed by Imperial engineers after 1530 (Salamagne 2011). Mariembourg, one of the three fortress-cities in the group of eight, is inflated so that its dazzling new bastions dominate the frame, eliminating most of the landscape visible in van Deventer's image (figure 5) but also simplifying considerably the network of roads leading into it. Unfortunately, van Deventer's map of Mariembourg in the Royal Library of Belgium is the only one known to exist, and it does not include a miniature for comparison. Since van Deventer was precise about roads and other administratively crucial information, it is likely that the road system was simplified in the translation of the survey map into *Civitates orbis terrarum*. This image of Mariembourg complements the image of Philippeville on the facing page, in which the earthworks mirroring the arrow-head bastions are almost touching the frame of the map in three places. Van Deventer's map of Philippeville is lost, so it cannot be known if and, if so, how the *Civitates orbis terrarum* image modifies its source. What is evident from the arrangement of the maps on these two facing pages, however, is that the new fortifications of Philippeville and Mariembourg are showpieces whose notable bastions are almost bursting out of their frames and crowding out distracting information. Their spectacular appearance is emphasized by the images of Chimay and Walcourt directly below them, which are depicted from a higher vantage that makes them and their

older wall systems a smaller part of a larger countryside.

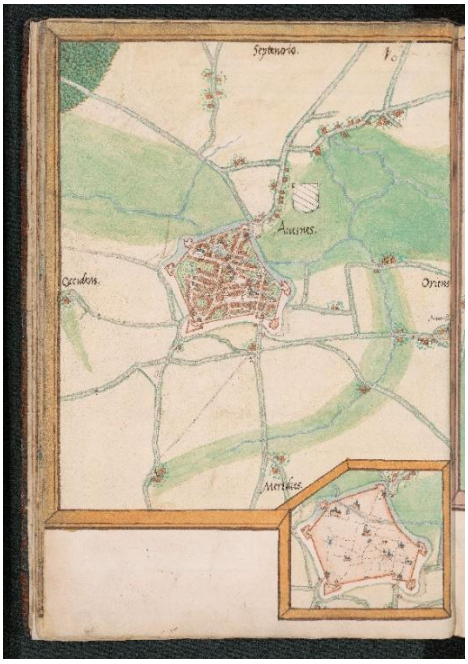

Figure 3
Avesnes by Jacob van Deventer (c. 1558-1572). Courtesy of the Biblioteca Nacional de España.

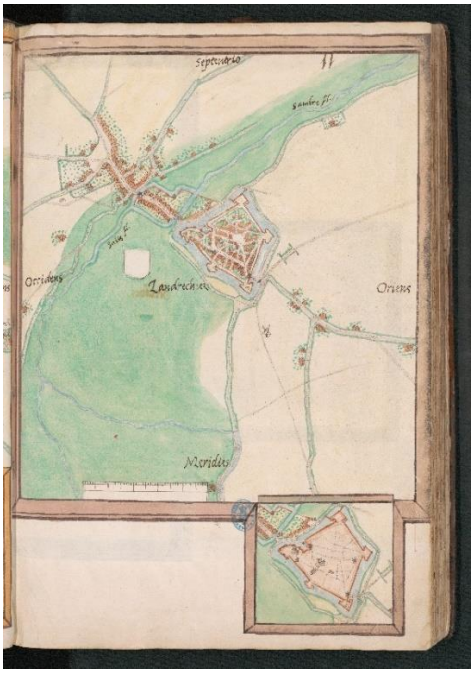

Figure 4
Landrecies by Jacob van Deventer (c. 1558-1572). Courtesy of the Biblioteca Nacional de España.

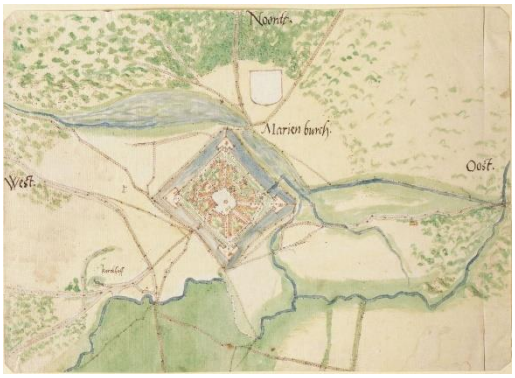

Figure 5
Mariembourg by Jacob van Deventer (c. 1558-1572). Courtesy of the Koninklijke Bibliotheek van België.

This group of eight towns also forms a visual narrative that complements a verbal narrative with which many readers of *Civitates orbis terrarum* would have been familiar. The territorial system created through these towns by the work of Imperial engineers was celebrated enough to earn Sebastian van Noyen, the designer of Philippeville and Charlemont, honorable mention from Giorgio Vasari in his *Lives of the Artists* (Vasari 1568; Martens 2019b). Six of the eight towns were also previously grouped together by Lodovico Guicciardini in *Descrittione di tuttu I Paesi Bassi* published in 1567 (264-265). In Guiccardini's atlas, the towns are listed on facing pages, as they are in *Civitates orbis terrarum*, with bold subheadings for each town (1567). Guiccardini does not include pictures of the towns, but he discusses their defensive posture in the border country and remarks on the fortifications of Mariembourg in especially evocative terms, referring to its four "*belissimi*

buluardi" (1567, 264-65). *Civitates orbis terrarum* also tells the story of this relationship in verbal form, discussing Charlemont, Mariembourg, and Philippeville among the "strong defenses raised by the Emperor Charles V against the invasions of the French" (*COT* 1581, 23).[iii] *Civitates orbis terrarum* gives its readers an opportunity not only to see the *belissimi* bulwarks described by Guicciardini but to see them in terms of a narrative about a region that had already formed *as* a narrative of fortifications.

It may have been through a series of happy accidents that van Deventer's survey maps came into Hogenberg's hands in the 1570s, but the arrangement of the group of eight towns and the composition of its constituent maps in the 1581 volume reflects a process of translating administrative or military maps into a visual narrative that developed from existing verbal narratives and that is organized visually around the bastioned trace. The versions of van Deventer's maps that enter *Civitates orbis terrarum* add emphasis to the wall systems and to the purpose-built wall systems of Mariembourg and Philippeville especially. Other information is crowded out or covered over with ornamentation, making isolated wall systems the most prominent feature of the real world represented by each map. That isolation is then replaced through the grouping of the maps with an imaginary coherence supplied by the idea of a territorial system that had itself been established in narrative, which the images of the fortification systems also affirm. The fortifications are not merely a part of the story but the part that holds the story together.

Why the bastioned trace was effective in this narrative role comes perilously close to the old question of how the bastioned trace was aesthetically pleasing. This question was explored by Paolo Marconi in "La cittadella come miscrocosmo" (1968) and "La città come forma simbolica" (1973) as well as by J. R. Hale in *Renaissance Fortifications: Art or Engineering?* (1977), but it has not been revived much in the groundswell of scholarly interest in the new fortifications the twenty-first century has witnessed. That said, city walls had always been practical defensive apparatuses, and yet, they had always held significance beyond their practical functions. They protected cities, and they embodied and communicated the strength and wealth of cities – and that did not change suddenly with the introduction of the bastioned trace at the turn of the sixteenth century (Pepper 2000; Brett 2011, 7). What did change, however, was the design of city walls, the accuracy of representations of them, and the scale on which print enabled the distribution of these representations. The question of how these images of new fortifications signify or communicate or please is different from the question of how fortifications signify or communicate or please. The question, then, of why images of new fortifications as paper cities were interesting enough to command two-page spreads in a major commercial undertaking like *Civitates orbis terrarum* would seem to be important, and it is one that, happily, can be approached through recent developments in architectural history.

The bastioned trace was informed by a self-conscious "mathematical expertise," which was embraced by military architects of the sixteenth century as a way to define themselves against their civil counterparts (Henninger-Voss 2002, 377). Stephan Hoppe and Marion Hilliges have suggested, however, that this commitment to geometric precision in sixteenth-

century military architecture may have run ahead of its proven benefits in defensive warfare (Hoppe 2012, 100; Hilliges 2011). Indeed, the emergence of a robust literature on the specialized mathematical knowledge required of fortification design lent itself to dilettantism and fed a "courtly culture engaged in the theoretical study of the military arts," as Morgan Ng has explored in his recent essay on the fortification designs of Francesco De Marchi (2016, 404). This dilettantism could extend to the highest strata of society, as Dirk Jacob Jansen has recently argued in his analysis of the star-shaped hunting lodge designed by Archduke Ferdinand (2019, 252). That Iago, in Shakespeare's *Othello* (1608), can discredit Michael Casio's military expertise by calling him an "arithmetician" full of "bookish theoric" suggests that the jargon of military geometry was well-established as part of an affectation of military expertise by the early seventeenth century (Shakespeare 2016, 1.1.18-23).

There can be no doubt, however, that artillery warfare required (and still requires) mathematical expertise, nor can there be any doubt that the mathematical expertise behind the new fortification systems contributed to their effectiveness in defending territory for the better part of four centuries (Parker 1996, 63-172). The issue, rather, is that "[m]ilitary engineers had one oar in cartographic methods, which promised to reduce to scale exactly physical landscapes and standing walls, and another in the geometric methods, which allowed the design of "perfect" forms of desired proportionalities," as Mary Henninger-Voss has argued (2004, 155-56). Effective military architecture required the cooperation of both of these skills, which are not coterminous even while they may overlap. The way these two oars pull with and against each other is reflected, for example, in Allain Manesson-Mallet's recommendation of regular or symmetrical wall systems instead of irregular or asymmetrical ones unless the terrain makes the former untenable (1671, 4-5).[iv] From the perspective of either a gunner or a cannonball, symmetry does not matter much, but for Manesson-Mallet, clearly, it is an ideal of design that exerts pressure on what should ostensibly be a very practical matter. But the opposite is also true. Very practical matters of terrain that military architects were trained to map precisely exert pressure on ideals of design. The new fortifications were, thus, highly practical mechanisms designed to function within a territorial system, but they were also expressions of a process of overcoming the challenges of terrain through the innovative application of mathematical ideals or, conversely, of realizing the highest ideals of mathematical precision within the constraints of the environment.

They were also expressions, as Paul Hirst has argued, as "of prevailing ideas of how to rationalize space" (1997, 13-15). The new fortifications worked as fortifications because they provided an economical and effective solution to the problem of artillery, as Geoffrey Parker and others have argued, but they also made sense as solutions to the problems of artillery because they cooperated with other ideas about how to organize as well as defend the places people lived (Parker 1996, 63-172). It is not by coincidence that early modern utopian literature grew up alongside the bastioned trace or that early modern utopianism and bastioned trace architecture sometimes converge. Zamosc, founded by Jan Zamoyski, Grand Chancellor of Poland, and designed as an ideal city by Bernardo Morando in 1580,

is among the more notable images of the bastioned trace in the sixth and final volume of *Civitates orbis terrarum*. Not depicted in *Civitates orbis terrarum* but more telling is Freudenstadt. Envisioned by Duke Friedrich I of Wurttemberg as a Protestant refuge, it was designed in 1599 by Heinrich Schickhardt, an associate of fellow Swabian Johann Valentin Andrea, who included a fortress-city much like Freudenstadt in his utopian work *Christianopolis* (1619) (Lewis 2016, 71). Whether there was as much art as engineering at work in the bastioned trace may be a distracting question, but a constructive approach to a similar set of issues is to see the bastioned trace, as Martha Pollak has suggested, as synthesizing a discourse on "military urbanism" characterized by "uniformity, geometrical clarity, control, architectural economy, and unadorned monumentality" (2010, 63).

These ideals of "uniformity, geometrical clarity, control, architectural economy, and unadorned monumentality" are clearly displayed in the group of eight cities and in the images of Mariembourg and Philippeville in particular. Moreover, the group quite literally puts these ideals on the map by locating them in towns in the real world, which is important given that the readership of the book would have had few opportunities to see a bastioned trace in such a clear and perfected form. Most communities did not completely refurbish their medieval walls if they did so at all. Even amidst a flurry of fortification building in the Netherlands in the decades leading up to the Dutch Revolt, only thirty towns or so were refortified – which is a lot, but a fraction of the hundreds of towns van Deventer sketched (Martens and van de Vijver 2016, 77). Even with first-hand experience, the geometric complexity of the bastioned trace is difficult to see. Niccolò Machiavelli describes it unflatteringly as a tangle of "walles crooked, and full of tournynges, and receiptes" surrounded by countryside stripped of "tree or house" (1562, xciii-xcvii). Edmund Spenser refers to them as "part circulare, / And part triangulare" and "Not built of bricke, ne yet of stone and lime, / But of thing like to that Aegyptian slime" (2006, 2.9.21-22; Burlinson 2006, 103-7) Nathaniel Hawthorne laments centuries later while visiting Ticonderoga with a "young lieutenant of engineers" that he could see "nothing but confusion in what chiefly interested [the lieutenant]; straight lines and zigzags, defence within defence, wall opposed to wall, and ditch intersecting ditch; oblong squares of masonry below the surface of the earth, and huge mounds, or turf-covered hills of stone, above it" (1974, 186-191). As Hirst notes in a discussion of why the new fortification systems have often struggled to achieve heritage site status in the twentieth century, "Many of these structures are difficult to identify, since they consist in the main of earthen ramparts that barely show above a ditch covered by a glacis" (1997, 13).

The geometric complexity of the bastioned trace is much easier to see in paper cities, which were becoming a larger part of early modern visual culture in the 1560s and 1570s. Manuscript images, survey drawings, and even three-dimensional models circulated widely among professional engineers, military leaders, and state decisionmakers, and a steady commerce in fortification technology, especially between Italy and the Low Countries, has been well established (Martens and van de Vijver 2016; Henninger-Voss 2004). These representations were not widely accessible to the general public,

however. Printed images of refined bastioned trace systems as seen from directly overhead (i.e., in ichnographic projection) or at a slightly oblique angle were mostly the stuff of Venetian military manuals, which typically depict conceptual fortifications rather than images of real European cities (Breman 2002).[v] Books of this kind started to emerge in the north in the 1570s, with Hans van Schille's *Form und weis zu bauen* in Antwerp and Peter Whithorne's *Certaine Wayes for the Ordering of Souldious* in London, both published in 1573. Aurelio de Pasino's *Discours sur plusieurs poincts de l'architecture de guerre*, also published in Antwerp, followed in 1579. None of these include representations of the fortifications of real European cities.

Detailed ichnographic or oblique images of the bastioned trace started to be more common in printed books in the decades prior to the publication of the group of eight towns in 1581, but they were still rare in popular print to that point. The richest source is probably Giulio Ballino's *De disegni delle piu illustri citta, & fortezze del mondo* (1569), which includes ground plans for contemporary fortification projects among bird's-eye views of many European cities' fortifications. Guillaume Gueroult's *Epitome de la Corographie d'Europe* (1563) includes no maps of this kind, and neither does Abraham Ortelius's *Theatrum orbis terrarum* (1570), although both include maps of cities in bird's-eye perspective in which fortifications are visible. Antoine du Pinet's *Planz, Pourtraitz, et Descriptions de Plusiers Villes et Forteresses* (1564) includes a bird's-eye drawing of Mirandola that gives minute details of new fortifications, but it is concerned with information specific to the Papal siege of 1551 and is stylistically consistent with the conventions of live-action (*ad vivum*) representations of siege warfare (Martens 2019a). Francois Belleforest's French translation of Sebastian Munster's *Cosmographia*, published as *Cosmographie Universielle* in Paris in 1575, includes a drawing is of Le Havre (Havre-de-Grace) showing a complex bastioned trace system in steep bird's-eye perspective.[vi] The flow of images depicting the new fortifications in detail increased with *Civitates orbis terrarum*. The first volume, published in 1572, depicts the bastioned trace at Farmagusta and Malta in steep bird's-eye perspective, and it also displays the fortifications of Milan and the citadel at Antwerp (although it must be acknowledged that the latter two maps are much larger in scope and include much more information in addition to the fortification systems). The second volume, published in 1575, includes the fortifications of Gravelines and Groningen in great detail, while La Rochelle and the citadel at Metz might also be described as providing intricate details of fortification systems from a vantage point nearly overhead. The citadels of Tunis may be the most striking examples of the bastioned trace in this volume, but, like du Pinet's map of Mirandola, the *Civitates orbis terrarum* map of Tunis follows the conventions of representing siege warfare (in this case the Imperial siege of 1535).

While the state of the knowledge about the distribution of early modern maps and printed books is always changing, a reasonable conclusion to be drawn is that the group of eight maps in the third volume of *Civitates orbis terrarum* was published at a moment when maps like these were increasingly entering mainstream visual culture through printed books and that these maps call attention to and epitomize that process. Certainly, from the

late 1560s on there were more bastioned trace systems to map and necessarily more plans and surveys – like van Deventer's – in circulation and accessible to the print industry. The staging of the group of eight towns suggests, however, that detailed representations of bastioned trace systems in the real world were also visual attractions. They were relatively novel, especially for the general reading public. They transparently communicate the mathematical precision informing ideals of urban designs that extended beyond military architecture. They made city walls that were occulted in turf-covered zigzags visible in their entirety. They provided images to go along with the stories circulating about amazing new fortress-cities like Mariembourg and the talent behind them.

How maps of the bastioned trace work as visual attractions in *Civitates orbis terrarum* can be further elucidated through a brief examination of the map of the fortress-city of Hesdin (Hesdin Fort) in the fourth volume (1588). Spread across two pages, Hesdin is the largest image of a bastioned trace fortification system published in the atlas to that point (figure 6). It is presented as a highly regular pentagon with five arrow-head bastions, and its symmetry is marred only slightly by the orientation of the bastion in the lower right corner. Like the maps showing the bastioned trace in the group of eight, Hesdin crowds the frame of the map and is thereby isolated from its surrounding environment, which is further obscured by cartouches in three corners of the map and images of people in the fourth. Presented this way, the fortress-city appears to be floating in its geometric clarity among ornaments above a flat and undistinguished landscape.

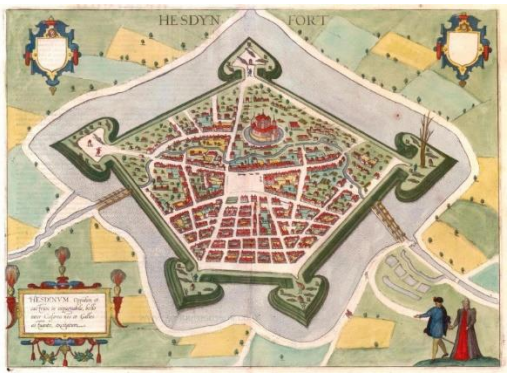

Figure 6
Hesdin from *Civitates orbit terrarum* (1588). Art Resource.

The map somewhat misrepresents Hesdin in significant ways. The new fortress-city, also designed by van Noyen and much resembling Philippeville, was built not as the regular pentagon as shown in *Civitates orbis terrarum* but as an irregular pentagon (Dereymaeker 2016; Martens 2019b). Its irregular shape is an effect of its conformity to the terrain and waterways in which it is situated. The map of Hesdin that appears in *Civitates orbis terrarum* has not been satisfactorily attributed, but drawings of the fortification plans are extent in at least two manuscript collections as well as in the remains of van Deventer's survey (Gerbino 2018, 32; Martens 2019b). Using van Deventer's map as a reference (figure 7), the irregular pentagon is a relatively small and quiet part of a landscape that includes the old city of Hesdin to the right of the new fortress-city. Parts of the old city are also visible in van Deventer's miniature, the proportions of which *Civitates orbis terrarum* approximates. Hesdin is represented similarly as a small fortress-city in a seventeenth-century map by Willem Janszoon Blaeu (figure 8). The orientation of Hesdin in Blaeu's map does not cleanly align with van Deventer's map, even allowing for the changes effected by the addition

of a sixth bastion in 1593, but both depict Hesdin as an asymmetrical fortress-city that takes its shape from the natural environment of which it is a central but relatively small part (Dereymaeker 2016).

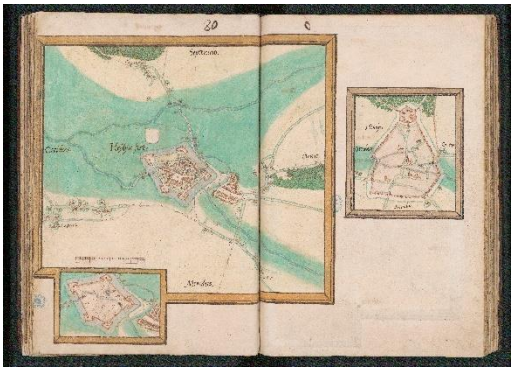

Figure 7
Hesdin by Jacob van Deventer (c. 1558-1572). Courtesy of the Biblioteca Nacional de España.

Figure 8
Siege of Hesdin by Willem Janszoon Blaeu. *Novum Ac Magnum Theatrum Urbium Belgicae* (1649). Art Resource.

As with the group of eight towns in volume three, the scale of Hesdin is lost in *Civitates orbis terrarum's* representation through the elimination of the surrounding landscape, and it is isolated by the exclusion of details about the built and natural environment that explain its irregularity in other representations. Like the maps of Mariembourg and Philippeville, the bastioned trace dominates the representation of the town, but unlike those maps, the image is inaccurate in a way that enhances its geometric clarity. Whether Hogenberg or van de Neuvel were working with a survey drawing that was itself inaccurate or whether they selectively modified van Deventer's map – or whether they even had van Deventer's map – are questions that await further research (Gerbino 2018). How the image of Hesdin in *Civitates orbis terrarum* came to misrepresent the town matters less, at least from a literary critical perspective, than the way its enhanced symmetry is integral to the composition of the map as it appears in the book. The gutter splits the pentagon down the middle of the fortress, evenly separating the bottommost bastions and dividing the topmost bastion in a way that would not be possible were Hesdin represented accurately. This artificial symmetry is further enhanced by the addition of complementing circular badges in both top corners and cartouches identical except for the text in both bottom corners. The old city that would appear only on the right side of the map is crowded out of the frame, and the road network on that same side is eliminated along with the creek it follows. The Hesdin in the real world of 1581 is a marvel of working ideal proportions around such sublunary constraints as creeks and old buildings, and it certainly could have made a good show across two pages of *Civitates orbis terrarum*, but not the same show. The enhanced symmetry of the image lends itself to a clearer display of the mathematical ideas informing the bastioned trace, which the atlas highlights by the size of the fortress-city relative to the

frame, by the elimination of geographical information that would make the map less symmetrical, and by the isolation of the city from other reference points.

An interesting question raised by the images of the fortress-cities this essay has examined is how *Civitates orbis terrarum* and books like it influenced the emergence of the bastioned trace in mainstream visual culture. This is a big and multifaceted question that deserves far more critical attention that it has received, and more than this essay can give it in a short conclusion. That the bastioned trace had become a part of popular visual culture by the turn of the seventeenth century is demonstrated nowhere more clearly than by Shakespeare's reference to "the roundure of your old-faced walls" as a poor defense against "cannons' malice" in *King John* (1595-1596) (2018, 2.1.251-259). Since for reasons discussed above few if anyone in a London theater would have had enough firsthand experience with the bastioned trace to visualize one all that clearly, it can be assumed that books like *Civitates orbis terrarum* played a major role in establishing a visual reference through which these lines in *King John* make sense – a role that would expand as popular cartography grew as a genre throughout the seventeenth century (Lewis 1992; Pollak 1991). As this article has, hopefully, demonstrated, turning the bastioned trace into a character in a printed book was a process that involved creating a visual narrative through the shaping and staging of images, sometimes at the expense of their accuracy. The bastioned trace that emerges in popular visual culture by the turn of the seventeenth century is, by implication, one that is filtered through these processes of idealization and, to some extent, fictionalization.

The most famous image of the bastioned trace in *Civitates orbis terrarum*, one published at almost the same time *King John* was written, sheds light on this issue. The map of the fortress-city of Palmanova (figure 9) that appears in the fifth volume (1596) was reproduced in many atlases throughout the seventeenth century and remains to this day one of the best-known images of the bastioned trace (de la Croix 1966).

Figure 9
Palmanova from *Civitates orbis terrarum* (1596). Courtesy of the British Library.

It is also exceptionally embellished and conspicuously inaccurate. As with Hesdin, Palmanova covers two pages of *Civitates orbis terrarum*, and also like Hesdin, the gutter splits the image into two perfect halves emphasizing its symmetry, as do the roads depicted as leading from the fortress and fading away toward the top corners of each facing page. Two cartouches fill the two bottom corners, each identical except for the written text. In the top corners are circular badges, also identical except for their constituent images (one is a crest of the Venetian Republic, and in the other is a crest of the city). As with Hesdin, the suppression of landscape detail gives the impression of a

perfectly formed fortress-city isolated from its surroundings and floating in space.

Inaccuracies in the image contribute to this geometric clarity. The earthwork scarps surrounding the bastions are minimized in the map, which gives the paper city a crisper outline than the real city (Baier, Bischoff, and Hilliges 2011; Ghironi and Manno 1993; de la Croix 1966). The scarps that are there, barely visible but hinted at in a green shadow on the exterior ring-road, highlight rather than obscure the contours of the bastions, which are also inaccurate. Not all of the bastions had been built by 1596, and the bastions are depicted as smaller relative to the span of the walls than they actually are, as revealed by a comparison with a plan of Palmanova from Pietro Bertelli's *Theatrum Urbium Italicarum* (1599) (figure 10). This misrepresentation is significant in that it gives more visual space for the gates that were controversially placed in the center of the walls over the objections of the military architects designing it (Scamozzi 1615; de la Croix 1966).[vii] The central tower was not built by 1596 and would never be built. Its presence in the map gives the impression of a city far more developed than it was at the time and, standing at the nexus of the lines of communication between the gates, the fictional tower bodies forth the idea of the fortress-city as an instrument of command and control – or, less optimistically, as the realization of an absolutist ideal ordered around "an all-powerful, all-seeing central hub from which its streets radiate" (Lewis 2016, 58-59). The streets are also misrepresented as developed and bustling with people, giving Palmanova the appearance of a thriving city and not of an overgrown citadel that had very few buildings in it by 1596 and that would struggle to cultivate a civilian population long after (Pollak 2010, 168; Braunfels 1988, 159-160; de la Croix 1966). And yet this map works effectively as a map because it presents a compelling image of Palmanova which, if the number of times it was reproduced throughout the seventeenth century is any measure, captivating the general reading public.

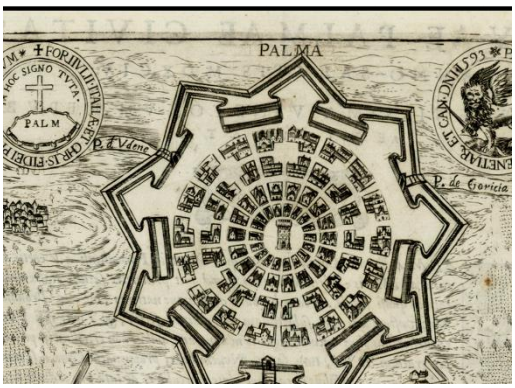

Figure 10
Palmanova by Pietro Bertelli, *Theatrum Urbium Italicarum* (1599).
https://earthworks.stanford.edu/catalog/stanford-gr152mp7207

None of which is to suggest that the image of Palmanova in *Civitates orbis terrarum* is a fiction, even if it is a character in a book. It would eventually be completed and become something very much like the image that appears in *Civitates orbis terrarum* in 1596 or in *Theatrum urbium Italicarum* in 1599 as well as the star-shaped city included in Lorini's unpublished *Delle fortification* – all of which are engaged with the idea of a star-shaped city that had been circulating in humanistic architectural circles since the late fifteenth century (de la Croix 1972). The point, ultimately, is that the images of Palmanova or of any of the fortress-cities of *Civitates orbis terrarum* this essay has examined are formed in part by expectations of what a

fortress-city is supposed to embody. They may be representations of cities in the real world, but they are also paper cities in their own right that represent themselves as much as or more than they represent anything in the real world. While the maps of the bastioned trace in *Civitates orbis terrarum* provide important information about the design of new fortification systems and while the book's editors were to some extent constrained by the maps they had to work with, the maps nevertheless reflect a process of communicating, reinforcing, and also supplementing ideas and ideals of military urbanism that existed nowhere more clearly than in the book itself.

References

Baier, Christof, Andre Bischoff, and Marion Hilliges. 2011. "Palmanova und der Besetzung." In *Ordnung und Mannigfaltigkeit*. Weimar: VDC.

Baudez, Basile. 2021. *Inessential Colors: Architecture on Paper in Early Modern Europe*. Princton, NJ: Princeton University Press.

Belleforest, Francois de. 1575. *Cosmographie Universielle*. Paris.

Braunfels, Wolfgang. 1988. *Urban Design in Western Europe: Regime and Architecture, 900-1900*, trans. Kenneth J. Northcott. Chicago: University of Chicago Press.

Breman, Paul. 2002. *Military Architecture Printed in Venice*. Boston: Brill.

Brett, Annabel S. 2011. *Changes of State: Natural Law and the Limits of the City in Early Modern Natural Law*. Princton, NJ: Princeton University Press.

Burlinson, Christopher. 2006. *Allegory, Space, and the Material World in the Writings of Edmund Spenser*. Cambridge: D. S. Brewer.

Cobos-Guerra, Fernando. 2015. "Technical and Systemic Keys and Context of Hispanic Fortification on Western Mediterranean Coast." *Defensive Architecture of the Mediterranean: 15th to 16th Centuries* 1: 19-34. Accessed August 28, 2022. https://doi.org/10.4995/FORTMED2015.2015.1803.

Dameri, Annalisa. 2016. "Defending a Border: Piedmont and Lombardy Cities in the First Half of the Seventeenth Century." In *Draughtsman Engineers Serving the Spanish Monarchy in the Sixteenth to Eighteenth Centuries*, edited by Alicia Cámara Muñoz, 271-93. Madrid: Fundación Juanelo Turriano.

De la Croix, Horst. 1972. *Military Considerations in City Planning: Fortifications*. New York: George Braziller.

---. 1966. "Palmanova: A Study in Sixteenth Century Urbanism." *Saggi e Memorie di storia dell'arte* 5: 25-41.

Dereymaeker, Nathalie. 2016. "Hesdin, Philippeville et Charlemont: Villes neuves fortifiées, entre théorie et pratique." *Histoire urbaine* 45: 17-37.

Deys, H. P. 1989. "De stadsplattegronden van Jacob van Deventer." *Caert-Thresoor* 8: 81-95.

Dupont, Colin. 2020. "Du texte a l'image: Les plans de Jacques de Deventer, un example d'appropriation cartographique de l'espace?" *Revue de geographie historique* 17-18: 54-69. https://doi.org/10.4000/geohist.328.

---. "Creating Philip II's Vision: *Urbs* and *Civitas* in the Town Maps of Jacob van Deventer (1558-1575)." *Imago Mundi* 73: 16-31.

Fussel, Stephan, ed. 2008. *Civitates orbis terrarum*. Los Angeles: Taschen.

Gerbino, Anthony. 2018. "Mastering the Landscape: Geometric Survey in Sixteenth-Century France." *The Art Bulletin* 100: 7-33.

Ghironi, Silvano and Antonio Manno. 1993. *Palmanova, storia, progetti e cartografia urbana, 1593-1866*. Padua: Grafiche Turato.

Gillies, John. 1994. Shakespeare and the Geography of Difference. New York: Cambridge University Press.

Gordon, Andrew, and Bernhard Klein. 2001. Literature, Mapping, and the Politics of Space in Early Modern Britain. New York: Cambridge University Press.

Guicciardini, Lodovico. 1567. *Descrittione di M. Lodovico Guicciardini Patritio Fiorentino, di tutti I Paesi Bassi.* Antwerp.

Harley, J. B., and David Woodward. 1987. *The History of Cartography, Volume 1*. Chicago: University of Chicago Press.

Hawthorne, Nathaniel. 1974 (1836). "Old Ticonderoga: A Picture of the Past." In *The Snow-Image and Uncollected Tales*, edited by Fredson Bowers, Claude M. Simpson, Roy H. Pearle, and William Charvat, 186-191. Columbus: The Ohio State University Press.

Henninger-Voss, Mary. 2004. "Measures of Success: Military Engineering and the Architectonic Understanding of Design." In *Picturing Machines*, edited by Wolfgang Lefevre, 143-69. Cambridge: MIT.

---. 2002. "How the "New Science" of Cannons Shook Up the Aristotelian Cosmos." *Journal of the History of Ideas* 63: 371-97.

Hilliges, Marion. 2011. *Das Stadt- und Festungstor: Fortezza und sicurezza – semantische Aufrustung im 16. Jahrhundert*. Berlin: Mann.

Hirst, Paul. 1997. "The Defence of Places: Fortifications as Architecture." *AA Files* 33: 13-26.

Hoppe, Stephan. 2012. "Die nichtmathematische Festung und ihr medialer Untergang." In *Festungsbau: Geometrie, Technologie, Sublimierung*, edited by Bettina Marten, Ulrich Reinisch, and Michael Korey, 86-104. Berlin: Lukas.

Jansen, Dirk Jacob. 2019. *Jacopo Strada and Cultural Patronage at the Imperial Court*. vol. 1 of 2. Boston: Brill.

Kagan, Richard L. 1986. "Philip II and the Art of the Cityscape." *The Journal of Interdisciplinary History* 17: 115-135.

Lewis, Michael J. 2016. *The City of Refuge: Separatists and Utopian Town Planning*. Princeton, NJ: Princeton University Press.

Lewis, Michael J. 1992. *The Geometry of Defence: Fortification Treatises and Manuals, 1500-1800*. Montreal: Canadian Centre for Architecture.

Machiavelli, Niccolo. 1562. *The Arte of Warre*, trans. Peter Whitehorne. London.

Manesson-Mallet, Allain. 1671. *Les Travaux de Mars ou la Fortification Nouvelle*. Paris.

Maier, Jessica. 2012. "A 'True Likeness': The Renaissance City Portrait." *Renaissance Quarterly* 65: 711-52.

Martens, Pieter. 2019a. "Cities under Siege Portrayed ad vivum in Early Netherlandish Prints (1520-1565)." In *Ad vivum? Visual Materials and the Vocabulary of Life-Likeness in Europe Before 1800*, edited by Thomas Balfe, Joanna Woodall, and Claus Zittel, 151-99. Boston: Brill.

---. 2019b. "Planning Bastions: Olgiati and Van Noyen in the Low Countries in 1553." *Journal of the Society of Architectural Historians* 78: 25-48.

Martens, Pieter and Dirk van de Vijver. 2016. "Engineers and the Circulation of Knowledge in the Spanish Netherlands." In *Embattled Territory: The Circulation of Knowledge in the Spanish Netherlands*, edited by Sven Dupre, Bert De Munck, Werner Thomas, and Geert Vanpaemel, 73-106. Gent: Academia Press.

Ng, Morgan. 2016. "New Light on Francesco De March (1504-1576) and His Treatise on Fortification." *Mitteilungen Des Kunsthistorischen Institutes in Florenze* 53: 403-11.

Parker, Geoffrey. 1996. *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800*, 2nd. edition. New York: Cambridge University Press.

Pepper, Simon. 2000. "Siege Law, Siege Ritual, and the Symbolism of City Walls in Renaissance Europe." In *City Walls: The Urban Enceinte in Global Perspective*, edited by James D. Tracy, 573-604. New York: Cambridge University Press.

du Pinet, Antoine. 1564. *Planz, Pourtraitz, et Descriptions de Plusiers Villes et Forteresses*. Lyon.

Pollak, Martha. 2010. *Cities at War in Early Modern Europe*. New York: Cambridge University Press.

---. 1991. *Military Architecture, Cartography, and the Representation of the Early Modern European City: A Checklist of Treatises on Fortification in the Newberry Library*. Chicago: Newberry Library Press.

Rutte, Reinout and Bram Vannieuwenhuyze. 2018. *Stedenatlas Jacob van Deventer*. Bassum: Thoth.

Salamagne, Alain. 2011. "Philippe II de Croÿ et la fortification des villes de Hainaut: Avesnes, Bouchain, Le Quesnoy, trois chantiers Renaissants de la décennie 1530." *Revue belge de philologie et d'histoire. Belgisch tijdschrift voor philologie en geschiedenis* 89: 685-700.

Scamozzi, Vincenzo. 1615. *Dell'ide della archtettura universale*. Venice.

Shakespeare, William. 2018 (1595-1596). *King John*. New York: Bloomsbury.

---. 2016. *Othello* (1608). New York: Bloomsbury.

Spenser, Edmund. 2006 (1590). *The Faerie Queene*. New York: Longman.

Van der Krogt, Peter. 2008. "Mapping the Towns of Europe: The European Towns in Braun and Hogenberg's Town Atlas, 1572-1617." *Belgio* 3: 2-30.

Vannieuwenhuyze, Bram. 2019. "Enkele nieuwe ideen over de ontstaanscontext van Jacob van Deventers stadsplattegronden." *Caert-Thresoor* 38: 4-13.

Vasari, Giorgio. 1568. *Le Vite*. Florence.

Voges, Ramon. 2021. "Pictures and Power: The Visual Prints of Frans Hogenberg." In *Print and Power in Early Modern Europe (1500-1800)*, edited by Nina Lamal, Jamie Cumby, and Helmer J. Helmers, 301-16. Boston: Brill.

Vollen-Bronck, Laurens. 2009. "De stadsplattegronden van Jacob van Deventer." *Historisch-Geografisch Tijdschrift* 27: 73-83.

[i] This article used primarily the 1581 Cologne edition (the title of which is *Vrbium praecipuarum totius mundi liber tertius*) in the collection of Queen's College Cambridge Old Library. Due to the different editions of the book and inconsistencies in the binding process, extant copies may have these images on four consecutive pages or they may have text or blank pages in between, but in every copy consulted these four maps are consecutive in that there are no images between the first and second groups of four.

[ii] The three cities are named after Charles V, his sister Mary of Hungary, and his son Philip II of Spain.

[iii] Unless otherwise noted this and all other translations in this essay are the author's.

[iv] Manesson-Mallet describes "regular" fortifications as those where all the sides and bastions are like one another and "irregular" fortifications as those whose sides and bastions are of different sizes.

[v] Some notable examples of fortification treatises published prior to 1581 are follows: Giovanni Battista de' Zanchi, *Del modo di fortificar le citta* (Venice: 1554), includes several examples of the bastioned trace in ichnographic perspective; Giacomo Lanteri, *Due dialoghi* (Venice: 1557), includes several line drawings of bastioned trace plans; Domenico Mora, *Tre quesiti in dialogo sopra il fare batterie, fortificare una città* (Venice: 1567), also includes a some line drawings; Carlo Theti, *Discorsi delle fortificationi* (Venice: 1575), offers a comprehensive survey of different styles of ground plans concepts; Gregorio Zuccolo, *I discorsi di M Gregorio Zuccolo* (Venice: 1575), includes a few diagrams.

[vi] Francois de Belleforest, *Cosmographie Universielle* (Paris: 1575), 111-112.

[vii] The controversial decision to move the gates to the center of the walls may have been influenced by Vicenzo Scamozzi, who also claims to have laid the first bricks of the city, and it was aggressively resisted by the projects' military architects, Giulio Savorgnan and Buonaiuto Lorini.