

Visualizing Across Space, Time and Relationships: Unveiling Southeast Asia to Contemporary Eyes Through 16th to mid-17th Century Iberian Sources

Cuahtémoc Tonatiuh
Villamar
National University of Singapore
Department of History
Singapore
villamarc@u.nus.edu

Richard Cheng Yong Ho
National University of Singapore
NUS Libraries
Singapore
clbhcyr@nus.edu.sg

Yikang Feng
National University of Singapore
NUS Libraries
Singapore
fengyikang@nus.edu.sg

ABSTRACT

This paper describes the development of a teaching tool for exploring fifty-seven early Iberian writings on Southeast Asia from the sixteenth to mid-seventeenth century. This is an interdisciplinary grassroot effort initiated by a historian and two librarians, in hope of stimulating conversations surrounding adoption of digital methods in the local historian community. The teaching tool takes the form of interactive connection maps. It augments the exploration of where these early texts were published, their subsequent reprints or translations over space and time, and the system of influences behind early European concepts of Southeast Asia.

CCS CONCEPTS

• **Human-centered computing** → **Information visualization**;

KEYWORDS

southeast asia, digital humanities, visualization, interdisciplinary collaboration, iberian literature, digital storytelling, 16th century, 17th century, history, event-based data model

ACM Reference Format:

Cuahtémoc Tonatiuh Villamar, Richard Cheng Yong Ho, and Yikang Feng. 2017. Visualizing Across Space, Time and Relationships: Unveiling Southeast Asia to Contemporary Eyes Through 16th to mid-17th Century Iberian Sources. In *Proceedings of 4th Histoinformatics Workshop, Singapore, November 2017 (Histoinformatics 2017)*, 4 pages. https://doi.org/10.475/123_4

1 INTRODUCTION

In August 2016, during a workshop on digital humanities at NUS Libraries¹, the idea of attracting new generations of university students to the old collections of books was discussed. How can we steer interest into old and dusty books in an era of internet and digital screens? This was the starting moment of the collaboration between the authors of this project, one historian and two digital scholarship librarians, to make a selection of European books

¹The workshop was titled "Heritage interfaces: Presenting cultural specificity in digital collections", organized by Dr. Miguel Escobar Varela from Department of English Language and Literature, National University of Singapore and took place from 12 to 14 August 2016.

related to the first encounters with Southeast Asia, since the sixteenth century. The current trend of digitalization of knowledge calls for this type of interdisciplinary approaches and open-minded collaboration.

We wanted to identify the books that refer to Southeast Asia, and apply digital methods to explore the printed volumes difficult to access even to specialists. We confined our exercise to the region South of China and East India [12], which has received many designations, among others, the *Land below the Winds* [18], or the *Asian Mediterranean* [22]. The exercise is an invitation to *read* and also to *see* the Southeast Asia region through a selection of fifty-seven books that were written in Europe between the sixteenth and mid-seventeenth century; to be more precise, writings that were produced as a result of the deployment of Portuguese and Spanish forces, commercial, military and religious militias in Asia during that period. The intention was to share the opportunity of approaching that literature now available thanks to the advance of internet and valuable archives that have been working to digitize books which would otherwise be extremely difficult to consult.

We understand the problem in approaching this mixture of material from a contemporary perspective. It comes in different formats, at least four languages, and each text was written with the intention to inform, to convince or to hide problems. It is necessary to develop some basic training to catch the nature of each document, to compare with the historical context, to know more about the authors, the cities in which they were printed and even the printers who bore the task of putting the book in the market. We need to ask who were the intended readers of these books - some were semi-secret reports and others were written for public entertainment in a time in which the readers in reality were listening the texts in the voice of someone with basic literacy skills. There is a story that Philip II of Spain liked to listen from time to time the adventures of Fernandes Pinto in Asia in the Portuguese language, the same way nowadays we entertain ourselves with films².

For that purpose, we suggest to use a form of *interactive visualization* we have created with the curiosity of a traveller of the sixteenth century. One can *see* the books, pinpointing the time in which the texts were created, printed, distributed or translated. In some cases, the public knew only chapters of the books, without knowing the name of the author. We can discover how the European knowledge about Southeast Asia started quite soon after the fall of

²Pedro Cardim highlights the interest of Philip II to incorporate the Portuguese knowledge to the Spanish intellectual circles; himself the son of a Portuguese Queen. [6]

Melaka (or Malacca) in 1511 through the narrative of Giovanni d'Empoli, an Italian secretary of Afonso de Albuquerque. Almost four decades later, the same historic moment was recreated in hindsight by Bras de Albuquerque with the particular intention to embellish the image of his father. Another early story of the time of discovery became popular in Europe thanks to the ability of a young German living in Spain, Maximilian Transilvanus, which produced a kind of "news report" interviewing the surviving sailors of the Magellan expedition. He wrote it in Latin, more as an exercise of journalism of his time, providing fresh news to a handful of selected readers (including the Archbishop of Koln). The text was almost immediately translated into vernacular languages and reprinted in various cities.

This exercise is a "grassroots initiative" which, unfunded, had to start small in scope. Cuauhtémoc Tonatiuh Villamar, a PhD student from the Department of History, approached NUS Libraries and formed a project team with two digital scholarship librarians with backgrounds in information studies, geography and computing. The team shared the interest for digital methods in the humanities. The historical vision allows the analysis of information produced in the early modern period through the data contained in the library materials, now increasingly digitized and available to the public. The deliverable of this exercise is a teaching tool to encourage students to engage with library materials. Equally important, we wanted to demonstrate the potential of digital methods in historical research, in the hope of stimulating more conversation in the digital humanities within the local historian community.

2 HISTORICAL CONTEXT

The focus on the relation between the European "discovery" on one side, and the rich and manifold number of cultures in Southeast Asia on the other, opens an opportunity to observe the changes in both parts. The Portuguese were pioneers in exploring the sea routes to circumvent the Cape of Good Hope in Africa. Attracted by the possibility of dominating the spice trade, they reached in few years the Ormuz Strait, the coasts of India, and all the way the Spice Islands in today's Indonesia. This coincided with the time of the Spanish conquest of Mexico and Peru. However, the Spanish interest to reach the Asian region, attracted also by the spice trade, was accomplished on 1565 when they settled in the Philippines. It was evident from the books included in this exercise that this was a period in which many European concepts were subverted, from the geography to the human landscape of the globe.

The reasons to combine Portuguese and Spanish sources correspond to the nature of the *Iberian literary culture*, which had mutual influences. The wider public impact produced by such literature is elusive because it seems limited to the Iberian public. However, the fact that such narratives were almost immediately translated into other European languages indicates the appetite of other publics to know about the events in the so-called *Far East*. During the closing decades of the sixteenth century, there were Portuguese authors that published in the Spanish language to have a larger number of readers. One more reason to study Portuguese and Spanish texts together is that it is an important part of the production of narratives which corresponds to the period of *Union of the Crowns*, commonly known as the time in which the Spanish monarchs ruled

Portugal, from 1581 to 1640. Further to this fact, is the interaction that existed in Asia (not exempted of conflict) between officials, merchants, religious orders, and colonizers in the cities around the Asian continent. It should be noted that the books were printed in several parts of the Iberian world: Valladolid, Madrid, Lisbon, Goa, Mexico City, Manila. This fact provides additional interest to the analytical exercise.

3 METHODOLOGY

3.1 Data

We created a practical catalogue of the literature produced during the deployment of Portuguese and Spanish in Southeast Asia during the sixteenth century until the mid-seventeenth century. There are fifty seven books in total. In this exercise, we hope to cross the formal division of Portuguese and Spanish knowledge as a separate corpus of information that is usually treated in two historiographic traditions. The starting point for this compilation was the monumental work of Donald Lach, *Asia in the Making of Europe*, published in six volumes from 1965 to 1988 [2, 3, 13, 14, 19, 20]. To complement the catalogue, we used a collection compiled by Francisco de Herrera Maldonado at the beginning of the seventeenth century, published in the first Spanish translation of the *Peregrinação* of Fernandes Pinto. In this list, the books about the *Orient* were representative of the knowledge of Asian region in both Portuguese and Spanish literature, and was a kind of *ideal personal library* in his time. It must be said that, for practical reasons, we had to exclude texts referring to China, Japan (East Asia) or India (South Asia), and concentrate in Southeast Asia. Recent interpretations about the Iberian presence in the region, critical to the traditional imperial narrative about the early modern period, helped to shape the approach and limits of this project [1, 8, 9, 15, 21, 23].

We adopted an event-based data model that took reference from the CIDOC Conceptual Reference Model (CIDOC-CRM), an ontology for cultural objects [10] accepted as ISO 21127 standard in 2006. Books were seen as information objects created from writing and printing events that were carried out by different actors across space and time-spans. This design enables our data to be convertible to "reduced CRM-compatible" form, which may promote understanding and reuse by other digital humanities projects.

3.2 Collaborative Workflow

Our workflow broadly comprises of three steps which weaved together the expertise of our team members:

3.2.1 Transcribe Books into Tables. The historical books were identified, read and interpreted. For each book, all relevant information was transcribed into a pre-designed table template which specified information to extract, then saved as a text document file. The files were stored in a shared drive. This step was owned and performed by the historian who has command of several languages.

3.2.2 Data Modelling. The tables were interpreted, and transcribed into an event-based graph data model. The transcription effort included conversion of data fields into controlled vocabulary. Occasionally, the data model had to be refined to capture the phenomenon more closely. We used SylvaDB [7], a user-friendly free online tool that enables modelling of graphs and data entry without

any need for programming. This step was owned and performed by a librarian, in conversation with the historian who populated the tables.

3.2.3 Implementation. In this step, a librarian with background in information visualization developed a web application using a preservation-friendly technology stack (HTML, CSS, JavaScript and file-based database). The graph data from SylvaDB was converted to text file representations via Gephi, and QGIS was used to derive a table of place names with geographic coordinates. When loaded, the web application reads and stores the data from text files into data structures and uses Leaflet library to draw an indicative connection map on OpenStreetMap, filtered by a time slider. SigmaJS library was used to draw an indicative connection map of relationships. This step involved iterative prototyping in consultation with the team.

4 OVERVIEW OF VISUALIZATION

The persistent URL for the project is: <https://doi.org/10.25541/V5AF-1BBY>. It has two distinct views: *geographic view* and *relationship view*. The geographic view (Figure 1) enables the user to explore geographic and temporal patterns. Hovering on each node opens a popup window with related resources. At the bottom, there is a hyperlink which opens up the relationship view.

The relationship view (Figure 2) provides for exploration of the relationships between works and entities involved in the production. It comprises of a connection map of the relationships between publications and their creators, publishers, sponsors, places of publishing and derived works.

5 DISCUSSION

Through our iterative prototyping process, it became apparent that the visualization may indeed influence humanities research thinking in ways described by Hinrichs and Forlini [11]: (1) as a speculative process, (2) as aesthetic provocation and (3) as mediator between disciplines. As a speculative process, one immediate discovery is the significant amount of printing of Portuguese and Spanish books overseas, which seems contrary to the well-established

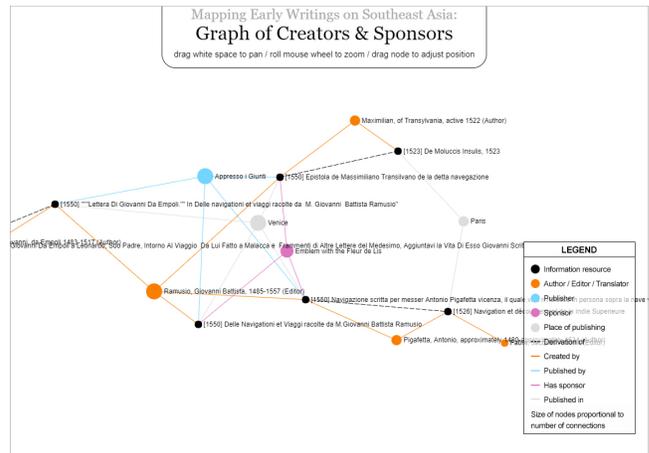


Figure 2: Relationship view.

notion that they tend to hide information within their capitals, thus creating room for further investigation. In terms of aesthetic provocation, the interactive and visual nature of the connection maps makes the information relatively accessible to students and the public. The visualization platform also showed potential as a mediator between disciplines such as history, geography and literature. It makes visible how one author takes after another author, intertextuality, and how information is reproduced, promoting critical discussion with regards to the production and distribution of knowledge in the early modern period in Europe.

The visualization could be a starting point for analysis of several themes. A first theme could be the pride provoked by the “discovery” of new territorial and human spaces in Asia, as a result of the initiative of Portuguese and Spaniards explorers. It was canonical in the literature to mention the importance of the role of the monarchies in the enterprise to discover and colonize other continents, deemed as prizes for their wisdom and benevolence with other populations. This was somehow motivated on the other hand by the constant accusations since the early sixteenth century for the destruction and abuse against the indigenous peoples of America, that gave elements to the ideological battle with other European powers that stands the black legend of Spain. In this regard, the translations into other European languages also had the intention to downplay the actions of the Iberians in Asia. Another theme could be the mental construction of a geography that evolved, in bits and pieces, through the Iberian narratives. The avidity of the European readers was translated into a cartography of Asia, made with the chronicles and reports from the Far East. The study of these connections, between travellers and armchair cartographers, might produce an interesting scope for additional study [5, 16, 17].

As future development, the data can be collapsed from a multimodal graph to a monopartite graph for computational social network analyses in a way similar to Brown, Soto-Corominas and Suárez [4], to derive insights on key players behind the construction of the earliest European perspectives on Southeast Asia.

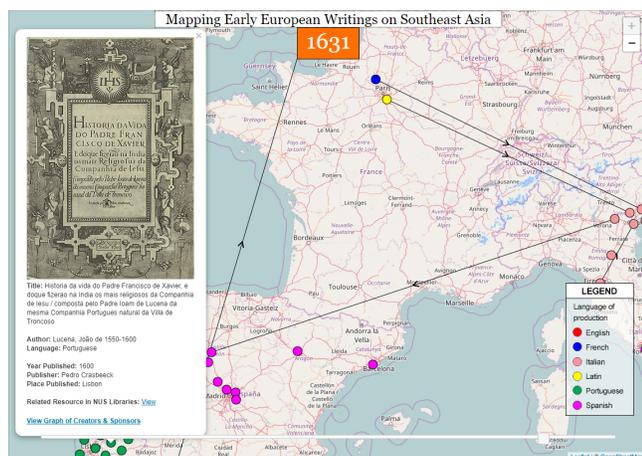


Figure 1: Geographic view.

6 CONCLUSION

An interdisciplinary team comprising of a historian and two librarians embarked on a collaborative endeavor to create a teaching tool that could also serve to create awareness and conversation in the adoption of digital methods within the local historian community. This involved research and curation of a historical collection, their transcription into an interoperable data model and expression into interactive connection maps across space, time and relationships. The interactive visualization prototype provokes further inquiry into the reading cultures and the production and flows of interpretations and imaginings of Southeast Asia amongst Europeans in the sixteenth to mid-seventeenth century.

ACKNOWLEDGMENTS

The authors would like to thank the anonymous reviewers and Dr. Miguel Escobar Varela for their constructive comments.

REFERENCES

- [1] Peter Borschberg. 2014. *The Memoirs and Memorials of Jacques de Coutre. Security, Trade and Society in 16th and 17th-Century Southeast Asia*. NUS Press, Singapore.
- [2] Charles R. Boxer. 1984. *From Lisbon to Goa, 1500-1750: Studies in Portuguese Maritime Enterprise*. Variorum Reprints, London.
- [3] Charles R. Boxer. 1992. *The Portuguese Seaborne Empire, 1415-1825*. Carcanet Press Ltd./ Calouste Gulbekian Foundation and the Discoveries Commission, Lisbon.
- [4] David M. Brown, Adriana Soto-Corominas, and Juan Luis Suárez. 2016. The preliminaries project: Geography, networks, and publication in the Spanish Golden Age. *Literary and Linguistic Computing* fqw036 (2016).
- [5] Mercedes Maroto Camino. 2005. *Producing the Pacific. Maps and Narratives of Spanish Exploration (1567-1606)*. Rodopi, Amsterdam – New York.
- [6] Pedro Cardim. 2014. *Portugal Unido y Separado. Felipe II, la unión de territorios y el debate sobre la condición política del Reino de Portugal*. Universidad de Valladolid, Valladolid.
- [7] Javier de la Rosa Perez, Juan-Luis Suárez, and Fernando Sancho-Caparrini. 2013. SylvaDB: A Polyglot and Multi-backend Graph Database Management System. In *Proceedings of the 2nd International Conference on Data Technologies and Applications*. 285–292.
- [8] Paulo Jorge de Sousa Pinto. 2012. *The Portuguese and the Straits of Melaka, 1575-1619*. NUS Press, Singapore.
- [9] A. R. Disney. 2009. *A History of Portugal and the Portuguese Empire*. Cambridge University Press, New York.
- [10] ICOM/CIDOC Documentation Standards Group and CIDOC CRM Special Interest Group. 2016. Definition of the CIDOC Conceptual Reference Model. <http://icom.museum/resources/publications-database/publication/definition-of-the-cidoc-conceptual-reference-model/>. (2016). Accessed: 2017-08-08.
- [11] Uta Hinrichs and Stefania Forlini. 2017. In defense of sandcastles: Research thinking through visualization in DH. In *Proceedings of the Conference on Digital Humanities*. International Alliance of Digital Humanities Organizations (ADHO).
- [12] Paul Kratoska, Remco Raben, and Henk Schulte Nordholt. 2005. *Locating Southeast Asia: Geographies of Knowledge and Politics of Space* (1st. ed.). NUS Press and Ohio University Press, Singapore.
- [13] Donald F. Lach. 2014. *Asia in the Making of Europe*. Vol. 3. Universidad de Valladolid, Valladolid. 306–366 pages.
- [14] Patricio Hidalgo Nuchera. 1998. *Guía de Fuentes Manuscritas para La Historia de Filipinas Conservadas En España*. Fundación Mapfre Tavera, Madrid.
- [15] Manel Ollé. 2002. *La Empresa de China: De La Armada Invencible Al Galeón de Manila*. El Acanalado, Barcelona.
- [16] Ricardo Padrón. 2009. A Sea of Denial: The Early Modern Spanish Invention of the Pacific Rim. *Hispanic Review* 77, 2 (Jan. 2009), 1–27. <https://doi.org/10.2307/40541410>
- [17] María Portuondo. 2009. *Secret Science: Spanish Cosmography and the New World*. University of Chicago Press, Chicago.
- [18] Anthony Reid. 1988. *Southeast Asia in the Age of Commerce, 1450-1680*. Vol. 1. Yale University Press, New Haven.
- [19] Marcela Londoño Rendón. 2010. La biblioteca oriental de Francisco de Herrera Maldonado. *Studia Aurea: Revista de Literatura Española y Teoría Literaria Del Renacimiento y Siglo de Oro* 4 (2010), 105–137.
- [20] Isacio Rodríguez and Jesús Álvarez. 2014. *Fondo de Filipiniana en la Biblioteca de Agustinos de Valladolid*. Biblioteca del Colegio de San Agustín, Valladolid.
- [21] Sanjay Subrahmanyam. 2012. *The Portuguese Empire in Asia, 1500-1700: A Political and Economic History*. John Wiley & Sons, Chichester, West Sussex, UK.
- [22] Heather Sutherland. 2003. Southeast Asian history and the mediterranean analogy. *Journal of Southeast Asian Studies* 34, 1 (Feb. 2003), 1–20.
- [23] Ernst van Veen. 2000. *Decay or Defeat? An Inquiry Into the Portuguese Decline in Asia, 1580-1645*. Research School of Asian, African and Amerindian Studies, Universiteit Leiden, Leiden.