# Rationalizing Disaster: Assessing the Physical, Economic, and Cultural Impact of Natural Hazards in Luzon, 1645-1754

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I declare that this thesis is my own account of research and contains as its main content work which has not previously been submitted for a degree at any tertiary education institution.

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# Abstract

This dissertation asserts historic natural hazards and the disasters they created are a potent and flexible analytical tool for studying the Philippine archipelago during the mid-colonial period (ca. 1640-1764). Historic hazards, because they occurred in the islands with sufficient regularity in the seventeenth and eighteenth centuries, were not just discrete, disruptive events, but processes that acted over time. These hazards, when viewed as processes, illustrate how a colonial society altered and adapted itself to cope with prolonged disruptions. When comprehended as events, though, responses to individual natural hazards identify the central connections and tensions that defined the colonial Philippines at the moment of disruption.

Therefore, this dissertation employs both perspectives to study the physical, economic, and cultural impact of natural hazards in Spanish Luzon between 1645 and 1754, years defined by the most severe disasters experienced in the islands in their respective centuries. By treating each hazard that transpired in the 109-year period as separate events, the dissertation demonstrates how seismic and meteorological hazards threatened crucial assets of the Spanish Empire, including galleons, fortresses, and churches. The dissertation also identifies how individual hazards amplified the growing poverty of the Philippine colony in the seventeenth century.

By treating the same destructive events as a process, the dissertation shows the evolving responses of governing institutions—colonial administrators and members of the clergy—to natural hazards over time. These institutional adaptations are reflected in the ways narratives of disaster shared amongst the colony's literate, Spanish elite changed

between 1645 and 1754 to emphasize hazards' capacity for destruction over their supposed metaphysical causes. Lastly, through case studies on folk magic and the creolization of Catholic festivals, the dissertation explores how Spanish soldiers and the colonized indigenous peoples of Luzon perceived natural hazards respectively.

# Acknowledgements

As many fellow students, good friends, advisors, and colleagues have reminded me time and again, writing a dissertation is a grueling process. It is also an adventure, one defined by setbacks, uncertainty, improvement, and moments of triumph. And, in this moment of elation as I submit this dissertation for consideration, I would like to thank the many people who helped craft and improve this work. It is fair to say, without their contributions, insights, and recommendations, this dissertation would have never been realized.

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# Notes on Nomenclature and Citations

This dissertation employs two Spanish terms, *naturales* and *indios,* to refer to the indigenous peoples of Luzon in the seventeenth and eighteenth centuries. Documents utilized by this dissertation used the term *naturales* to refer to Luzon's indigenous inhabitants generally. A more specific term, *indio* (Indian), exclusively referred to the indigenous peoples under Spanish dominion. Within the dissertation, these terms and the phrase "indigenous peoples" are used interchangeably to refer to the peoples of Luzon subjugated by the Spanish Empire. Alternatively, the dissertation describes indigenous peoples, when appropriate, by their ethnicity (i.e. Tagalog, Pampangan, Ilocano, and Bicolese). This dissertation does not use the present-day term "Filipino" because, prior to the nineteenth century, a Filipino identity arguably did not yet exist.

Additionally, this dissertation relies on Spanish sources that describe a pre-modern colonial bureaucracy. While direct English translations are used when applicable, multiple Spanish terms are employed throughout the dissertation to refer to various institutions (e.g. *Contaduría*), forms of correspondence (e.g. *traslado*), and tribute taxes (e.g. *polo*). All Spanish terms are italicized, and a glossary is available at the conclusion of the dissertation.

Lastly, when citing archival materials, this dissertation identifies the archive where material was gathered; the bundle (*legajo*) or collection where a document was encountered; and the document's number within the bundle. Additionally, when citing from a bound, unpublished primary source, the dissertation provides a page number (if page numbers are available). The documents' *folio* numbering scheme, where the front of a page was labelled *Recto* and the back *Verso,* is employed in citations.

# Commonly Employed Abbreviations

*AFIO:* Archivo Franciscano Ibero-Oriental (Madrid)

*AGI:* Archivo General de Indias (Seville)

*AGN:* Archivo General de la Nación (Mexico City)

*BR: The Philippine Islands* collection, edited by Emma Blair and Alexander Robertson

*BNE:* Biblioteca Nacional de España (Madrid)

*PNAS:* Proceedings of the National Academy of Sciences

# Introduction

Natural disasters are, despite the name, human-made. An event produced by naturally occurring processes possesses no inherent quality of disaster or calamity. Thus, an earthquake without human observers is not a disaster, but merely a release of built-up tension from seismic activity. Such an event becomes a disaster when it impacts human lives, structures, or infrastructure. A natural disaster is therefore a point of interaction between potentially destructive natural processes—referred to as natural hazards by scholars of disaster—and humans, both individuals and societies.[1] The study of natural disasters, as a result, necessitates distinguishing between the risks posed by the environment and the risks generated by people, their customs, attitudes, technology, and structures.[2]

In the Anthropocene, human alterations to the environment, ranging from deforestation to the emission of greenhouse gases, have blurred this distinction between the natural and artificial components of natural disasters.[3] Anxiety towards climate change,

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[1] Eric C. Jones and Arthur D. Murphy, "Linking Broad-Scale Political Economic Contexts to Fine-Scale Economic Consequences in Disaster Research," in *The Political Economy of Hazards and Disasters,* ed. Eric C. Jones and Arthur D. Murphy (Lanham, Maryland: Alta Mira, 2009), 3.

[2] Anthony Oliver-Smith, "Anthropology and the Political Economy of Disasters," in *The Political Economy of Hazards and Disasters,* ed. Eric C. Jones and Arthur D. Murphy (Lanham, Maryland: Alta Mira, 2009), 13, 15-16.

[3] In the present day, anthropogenic climate change has obliterated the boundary between what is natural and what is man-made. The atmosphere has been filled with synthetic chemicals and pollutants, but also altered at such a fundamental level that humans can claim partial responsibility for warming temperatures and extreme weather. And, owing to climate change, scholars are acutely aware of the potential of climatic shifts and their associated natural hazards to disrupt, displace, and destroy lives. The present day marks a moment of rapid transition, when climate change accelerates to take place within a single human lifespan and where disasters that were once unthinkable become increasingly frequent. For more on the history of climate science and debates surrounding climate change, see Matthias Heymann and Dania Achermann, "From Climatology to Climate Science in the Twentieth Century," in *The Palgrave Handbook of Climate History,* ed. Sam White, Christian Pfister, and Franz Mauelshagen (London: Palgrave MacMillan, 2018), 612-614 and Naomi Oreskes, Erik Conway, David J. Karoly, Joelle Gergis, Urs Neu, and Christian Pfister, "The Denial of Global Warming" in *The Palgrave Handbook of Climate History,* ed. Sam White, Christian Pfister, and Franz Mauelshagen (London: Palgrave MacMillan, 2018), 149-150, 159-161, and 165.

as well as the increased frequency and severity of disasters in the late-twentieth and twenty-first centuries, has generated scholarly and popular interest in morose subjects like disaster, eschatology, and societal collapse.[4] Anthropologists, geographers, archaeologists, demographers, economists, natural scientists, and—albeit with expressed reluctance—historians are therefore increasingly studying the creation of natural disasters, how individuals and societies respond to such disruptions, and even how natural disaster may be linked to societal collapse.[5] Historians' contribution to this nascent field is context. Historians can describe past disasters; they can assess the impact of one or a series of disasters; and they can trace the evolution of responses to, recovery from, and evolving perceptions of natural hazards. And, perhaps most importantly, historians can address fears regarding anthropogenic climate change by studying how people in the past responded to chronic, severe, and novel disasters.[6]

## Establishing a Colony: The Philippines from 1565 to 1645

Although anthropogenic climate change represents an unprecedented challenge, it does not represent the first instance of collective anxiety towards a foreign climate or

[4] The fear that human (in)action towards the climate has augmented the impact of natural disasters, finds ample expression in popular culture. Two progenitors of this trend were Roland Emmerich's *The Day After Tomorrow* (2003) and Al Gore's *An Inconvenient Truth* (2005). For a discussion of Emmerich's film in an academic context, see Franz Mauelshagen, "Climate Catastrophism: The History of the Future of Climate Change" in *Historical Disasters in Context: Science, Religion, and Politics,* ed. Andrea Janku, Gerrit J. Schenk, and Franz Mauelshagen (New York: Routledge, 2012), 261-263.

[5] John Haldon, Timothy P. Newfield, Arlen F. Chase et al, "History meets paleoscience: Consilience and collaboration in studying past societal responses to environmental change," *Proceedings of the National Academy of Sciences,* PNAS Latest Articles (March 2018): 1.

[6] Across academic disciplines, the question—or fear—of whether abrupt climate change increases the rate of conflict, disease, famine, and ultimately societal collapse pervades. Amongst popular accounts of disaster, this fear is more explicit and prevalent. This contemporary iteration of the four horsemen repeats an anxiety recurrent throughout history. Although the modern climate crisis represents the first time humans have blamed chemicals for the increase in observable calamities, it is not the first time humans have condemned their greed, vanity, or their existence for the oncoming apocalypse. and is therefore a topic worthy of consideration by historians, along with the broader topic of disaster history. See Chapter 4 for an extensive discussion of apocalyptic ruminations inspired by natural hazards in Colonial Luzon.

potentially frequent disasters. Throughout the colonial period, for example, European powers, each with pre-conceived notions of disaster (natural or man-made), were forced to adapt to the natural extremes and climates of environments that neither individual colonizers nor their institutions had ever experienced. These environs, not to mention the experiences of colonized peoples, challenged European understandings of nature and of natural hazards.[7]

The Philippines were one such environment, especially during the first two hundred years of Spanish colonialism. The Spanish conquest of the archipelago, which consists of approximately seven thousand islands, was led by Miguel Lopez de Legazpi. Although he initially conquered the island of Cebu in 1565, it was ultimately deemed insufficient for a colonial capital. In 1571, the Spanish moved northwards, subjugating the largest island in the archipelago, Luzon, and establishing the city of Manila.[8] Over the next several decades, the Spanish consolidated control over Central Luzon as well as the group of smaller islands that surrounded Cebu in the south, collectively known as the Visayas.[9] The large islands of

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[7] Innumerable monographs and pieces of scholarship written in the past thirty years confirm colonial environments were contested ground—literally and metaphorically. How colonists envisioned colonial landscapes changed over time as the landscapes were physically altered and as colonized peoples and landscapes influenced colonists' perceptions of the land. The two environmental historians whose scholarship is emblematic of the dialogue between colonizer and environment are William Cronon and Richard Grove. Although neither spoke of natural hazards, their broader theories are readily applied to studying these environmental features. See William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England, 20th Anniversary Edition* (New York City: Hill and Yang, 2003), xv, 9-10, 21, and 48-52. See also Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism* (Cambridge: Cambridge University, 1995), 5-7, 11-12, 14, 16, 24, 29, and 484-486.
For more specifically on how perceptions of disasters echo prevailing perceptions of nature, see Susanna M. Hoffman, "The Monster and the Mother: The Symbolism of Disaster," in *Catastrophe and Culture: The Anthropology of Disaster,* ed. Susanna M. Hoffman and Anthony Oliver-Smith (Santa Fe: School of American Research, 2002), 114-115.

[8] Barbara Watson Andaya and Leonard Y. Andaya, *A History of Early Modern Southeast Asia, 1400-1800* (Cambridge: Cambridge University, 2018), 136-139. See also "Relation of the Conquest of the Island of Luzon," trans. J.G. Gill, in *The Philippine Islands Vol. III,* ed. Emma Blair and James A. Robertson (Cleveland: Arthur H. Clark, 1903), 145-147. See also "Foundation of the City of Manila," trans. James A. Robertson, in *The Philippine Islands Vol. III,* ed. Emma Blair and James A. Robertson (Cleveland: Arthur H. Clark, 1903), 173. From this point forward, documents from this collection will be cited using the abbreviation *B&R* followed immediately by the volume number referred to.

[9] See Barbara Andaya and Leonard Andaya, *A History of Early Modern Southeast Asia,* 192 and 195.

Mindanao and Borneo, to the south and southwest of Luzon and the Visayas, remained outside of the Spanish aegis, and for the next three-hundred years were frequent adversaries.[10]

The new colony almost immediately came under threat from its northern neighbors as well, when the Chinese corsair Limahong (or Limahon in Spanish accounts) momentarily threatened Manila with invasion. His attacks were repulsed on the 30th of November, 1574. In recognition of the victory, the saint associated with that day, Andrew the Apostle, became a patron saint of Manila.[11] Success against Limahong also generated Chinese interest in the colony, and a vibrant trade began between Nueva España (Mexico) and Ming China.[12] American silver, brought across the Pacific Ocean each year by the *naos de Manila* (the Manila Galleons), was exchanged for Asian silks and porcelains.[13] The wealth generated by this exchange spurred Manila's rapid growth from a colonial outpost to a thriving city of

[10] The Brunei (sixteenth century), Maguindanao (early seventeenth century), and Sulu Sultanates (eighteenth through mid-nineteenth century) would successively harass and pillage the Spanish Philippines, at times threatening the colony's continued existence. For more information on raids from the south and Spanish activity in Mindanao, see Horacio de la Costa, S.J., *The Jesuits in the Philippines, 1581-1768* (Cambridge: Harvard University, 1967), 150-151, 280-286, 299-301, 310, 319, 324-327, 388, and 549-550.

[11] *Ibid,* 404-405. For more on Limahong's effect on Manila's architecture, see Robert R. Reed, *Colonial Manila: The Context of Hispanic Urbanism and Process of Morphogenesis* (Berkeley: University of California, 1978), 45-47.

[12] Prior to the arrival of the Spanish, Chinese merchants had already established a presence in Central Luzon as part of pre-existing commerce in the South China Sea. See James Francis Warren, "Weather, History, and Empire: The Typhoon Factor and the Manila Galleon Trade, 1565-1815" in *Anthony Reid and the Study of the Southeast Asian Past,* ed. Geoff Wade and Li Tana (Singapore: ISEAS Publishing, 2015), 185.

[13] Arturo Giraldez, *The Age of Trade: The Manila Galleons and the Dawn of the Global Trade Economy* (New York City: Rowman and Littlefield, 2015), 2-3, and 5. Although Spanish Manila's primary trading partner was Ming China, the entrepot attracted merchants from South, Southeast, and East Asia. As early as 1586, the Parian—the neighborhood outside Manila's walls where the city's Chinese merchants resided—was filled with traders from Macao, Japan, and Siam. Several trade goods exchanged for Mexican silver—porcelain, silk, lacquer work, jade, and ivory among others—were transported back to Acapulco and then, finally, Mexico City where they were sold at the annual trade fair in a district named the Parian, after its counterpart in Manila. The influx of Asian artwork and luxury goods had a pronounced impact on American styles, fashion, and design. "Relation of the Philippine Islands, 1586-88," trans. James A. Robertson, *B&R VII,* 28-30. For information on how trade with Asia influenced colonial Mexican artwork and designs, see Donna Pierce, "By the Boatload: Receiving and Recreating the Arts of Asia," in *Made in the Americas: The New World Discovers Asia,* ed. Dennis Carr (Boston: Museum of Fine Arts Boston, 2016), 53, 55, 58, 65, and 67.

more than forty-thousand people by 1600.[14] The trade attracted thousands of Chinese merchants from Fujian province, referred to as the *Sangley* in Manila. These merchants ensured the trade between China and the Spanish Americas, the first global trade and (then) the most profitable in history, continued.

The other great external threat to the early colony, though, proved to be a European enemy. The Dutch, then engaged in a prolonged rebellion with Hapsburg Spain, first arrived in Southeast Asia in 1600 with the voyage of the privateer Oliver van Noort. Van Noort's vessels momentarily harassed Manila's trade, but they were repulsed by a small contingent led by Antonio de Morga.[15] This encounter was the prelude to several Dutch attempts to expel the Spanish from Southeast Asia. At the same time, Batavia, established in 1619, was slowly eclipsing Manila in intra-regional commerce while the Dutch expanded their presence in Tidore and the other Spice Islands, challenging the Spanish foothold in Ternate.[16] The Spanish regional position worsened with the successful capture of the Spanish outpost in Formosa (presently the island of Taiwan) in 1642—along with the earlier capture of Portuguese Malacca in 1641. Meanwhile, the Manila Galleons became frequent targets for Dutch privateers, leaving Manila and the Philippine colony increasingly impoverished.

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[14] Reed, *Colonial Manila,* 33. This number is confirmed by Warren, who cites William Lytle Schurz's history of the Manila Galleons (1939). See Warren, "Weather, History, and Empire," 186.

[15] See de la Costa, *The Jesuits in the Philippines,* 190-191. Antonio de Morga is a prominent name in the early colony's history. He was appointed deputy-governor of the Philippines in 1593 (though he would not arrive in the islands until 1595). He would serve under multiple governors, first as deputy-governor and then as the chief *oidor* (judge) of the Philippine Audiencia. His account of the Philippine islands, *Sucesos de las Islas Filipinas* (1609), is one of the few surviving, published histories of the colony's earliest years, and the only one composed by an author who was not an active member of the clergy. Morga's *Sucesos* can be accessed in volumes 15 and 16 of *B&R*.

[16] See de la Costa, *The Jesuits in the Philippines,* 399. Multiple historians of the early Philippine colony (sixteenth to mid-seventeenth century) have argued that the Philippine economy was the victim of Manila's success. The silver trade in Manila generated immense private wealth, and as a result no effort was made to develop trade or stimulate economic developments within the islands. For a detailed study of the economy of the archipelago in the sixteenth century, see Germelino M. Bautista, "The Economy of the Philippines in the Age of Philip II (1527-1598)," in *Re-Shaping the World: Philip II of Spain and His Time,* ed. Dámaso de Lario (Manila: Ateneo de Manila, 2008), 40 (four tiers of colonial Philippine economy), 51 (Manila's role as entrepot), and 54 (capital-flight and why Manila's wealth did not stay in the colony).

Although the Spanish managed to repulse a large Dutch invasion in 1646 in five successive battles, *las batallas de la Naval de Manila,* the Philippines were rendered destitute from decades of war and the forced mobilization of laborers by the mid-seventeenth century.[17] While peace with the Dutch in 1648 would preserve Spanish control over the archipelago, the colony never reacquired the regional significance (or global renown) it enjoyed in its earliest years.[18]

Natural disasters did not pose an existential threat to the Spanish Philippines like Limahong or the Dutch. However, they were a constant threat to the inhabitants of Luzon and the Visayas, colonizer and colonized alike. The Philippines hold the unenviable distinction of being amongst the most hazardous places on Earth. The islands rest along the

[17] See de la Costa, *The Jesuits in the Philippines,* 406-411. See also Giraldez, *The Age of Trade,* 117. What might be called the downstream effects, that is the consequences of this prolonged period of mobilization of labor and resources for war, have been chronicled by several historians and ethnohistorians of Luzon. For demographic change during the Early Spanish period owing to disease, conquest, and forced labor, see Linda A. Newson, *Conquest and Pestilence in the Early Spanish Philippines* (Honolulu: University of Hawai'i, 2009), 3-4, 8-9, 76-79, 110-112, 145, 251, 254, and 256-257. For discussion of revolts (especially revolts in Central Luzon in 1660) prompted by heightened labor demands in the first half of the seventeenth century, see John A. Larkin, *The Pampangans: Colonial Society in a Philippine Province* (Berkeley: University of California, 1972), 25-27; Felix M. Keesing, *The Ethnohistory of Northern Luzon* (Stanford: Stanford University, 1962), 32-34; and Rosario Mendoza Cortes, *Pangasinan, 1572-1800* (Quezon City: New Day, 1974), 153. The revolts of 1660 were awarded special significance by Renato Constantino, a Marxist-influenced social historian who argued the Filipino identity was forged through resistance and revolt: "The only way a history of the Philippines can be Filipino is to write on the basis of the struggles of the people, for in these struggles the Filipino emerged. Filipino resistance to colonial oppression is the unifying thread of Philippine history." Renato Constantino, *The Philippines: A Past Revisited* (Quezon City: Tala Publishing, 1975), 3, 8-9 (cited portion), 81, 83-84 (role of Hispano-Dutch conflict in generating abuses and exploitation), 86-88 (revolt as rejection of Spain but not Catholicism), 90-91 (Pampangan Revolt), and 97 (other revolts in Luzon in 1660).

[18] See de la Costa, *The Jesuits in the Philippines,* 416. The fluorescence of Manila in the early seventeenth century was produced by alignments both between Chinese need and Spanish supply and in regional geo-politics (as discussed later in this Introduction). Anthony Reid asserts the period from the voyages of Zheng He (circa 1480) until the mid-seventeenth century was an "Age of Commerce" in Southeast Asia—a conceptualization most regional historians presently accept—where the region was defined by trade between entrepots that transpired despite conflicts. The conquest or destruction of a trade center, rather than stopping trade, instead promoted the rise of a different entrepot. It was under this system that Manila, with access to Amerindian silver, first flourished. However, the arrival of the Dutch presaged the end of this system, as the VOC (Dutch East India Company) established monopolies over spices and other exports from Southeast Asia, stifling a previously vibrant and fluid trade by imposing mercantile structures upon it. See Anthony Reid, *Southeast Asia in the Age of Commerce, 1480-1680: Volume 2, Expansion and Crisis* (New Haven: Yale, 1993), 1-2, 12, 14, 16, 22, 123, 204, 208-212 (listing and discussion of significant entrepots in the Age of Commerce), 285-286, and 326.

Pacific Ring of Fire, where as much as ninety percent of Earth's recorded seismic activity transpires.[19] As a result, the islands are subject to frequent and potentially severe earthquakes and volcanic eruptions. The islands' positioning along several fault lines has also bestowed them with a complex topography. Luzon contains several mountain chains: the Cordillera Gran that separates the Western littoral plain from the Cagayan River valley; the Camarines, which run along the southwest coast of the Bicol region (which includes the modern provinces of Camarines Norte, Camarines Sur, Albay, and Sorsogon); the Zambales that abut Manila Bay and the Cordillera; and the Sierra Madres, which run along Luzon's eastern shores, shielding it from the Pacific ocean. These mountains generate microclimates in Luzon, some of which are prone to flooding while others may experience drought.[20] Last, and most worrisome for inhabitants, Luzon (and the Visayas) lie along the Typhoon Belt and are annually subjected to powerful tempests (see Figure I.1).[21]

Storms, famines, fires, and all manner of catastrophe were common in the colony's earliest years. Fires consumed Manila on multiple occasions, ultimately prompting administrators to command the Spanish quarter be built with stone to prevent conflagrations.[22] Likewise, typhoons proved a constant threat to the galleons and the immense wealth they carried. In order to avoid such storms, ships were commanded to depart the ports of Acapulco and Manila at certain times each year.[23] However, unlike the Dutch invasions, Sangley revolts, or revolts from the indigenous peoples, natural hazards

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[19] Frederick L. Wernstedt and J.E. Spencer, *The Philippine Island World* (Berkeley: University of California, 1967), 9-13.
[20] *Ibid,* 3, 17-22, and 53-57.
[21] *Ibid,* 50-51.
[22] See Reed, *Colonial Manila,* 44 and Greg Bankoff, "A Tale of Two Cities: The Pyro-Seismic Morphology of Nineteenth-Century Manila," in *Flammable Cities: Urban Conflagration and the Making of the Modern World,* ed. Greg Bankoff (Madison, Wisconsin: University of Wisconsin, 2012), 172-173.
[23] For several reasons, however, the galleons often failed to depart on time. See Warren, "Weather, History, and Empire," 192-194 and Giraldez, *The Age of Trade,* 34 and 155.

were not a directed threat against Spanish authority, nor could they be confronted militarily.[24] Rather, natural hazards were, until the mid-seventeenth century, an internal irritant to be managed and responded to, a lesser threat in the eyes of Spaniards than hostile foreigners or colonized peoples.

This established dynamic between the colonizers and the environment changed in one night in 1645. On the evening of November 30th (San Andrés's saint day)—while the entire city was retiring from a night of celebration—a powerful earthquake struck Manila and the surrounding *pueblos*. Within minutes, nearly every building in the city was reduced to rubble, entombing one third of the city's Spanish population and leaving the survivors to scramble between aftershocks to the beach.[25] This was the first of several powerful earthquakes that struck Manila in the latter half of the seventeenth century. Nor were the earthquakes the colony's only worries. Despite the cessation of hostilities with the Dutch, the city and the colony's income shrank through the 1640s and 1650s, ultimately decreasing by more than fifty percent. The level of wealth the colony enjoyed before 1645—already substantially less than its income before 1610—would not return until 1694 and 1695.[26]

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[24] Much was already stated about indigenous revolts in the mid-seventeenth century, including the Pampangan revolt of 1660, in a previous footnote and will not be reiterated here. Accompanying revolts by the indigenous population, though, were revolts by the Chinese merchant population concentrated just outside Manila's walls. Over the course of the seventeenth century, there were four "Sangley Revolts," which transpired in 1603, 1639, 1662, and 1686. Each of these revolts resulted in the massacre of thousands of Chinese (with the number who perished in the first two revolts potentially exceeding ten thousand), and the deportation of survivors. For accounts of the 1603 revolt, see Pedro de Acuña. "Letters to Felipe III from Pedro de Acuña," trans Robert W. Haight, *B&R XIII*; Miguel Rodriguez de Maldonado, "The Sangley Insurrection of 1603," trans. James A. Robertson, *B&R XIV*; and Antonio de la Morga, *Sucesos de las Islas Filipinas*, trans. J.S. Cummins. (Cambridge: Cambridge, 1971), 219-223. An account of the 1639 rebellion is available in "Relation of the Insurrection of the Chinese," trans. Emma H. Blair, *B&R XXIX*. A limited discussion of the 1662 revolt may be found in "Events in Manila, 1662-1663," trans. Emma H. Blair, *B&R XXXVI*. Lastly, mention of the 1686 account can be found in Casimiro Diaz, O.S.A., "The Augustinians in the Philippines," *B&R XLII,* 249-252.

[25] Joseph Fayol, "Affairs in the Philippines, 1644-47," *B&R XXXV.* This source and the 1645 earthquake are discussed thoroughly in Chapter 4.

[26] Luis Alonso, "Financing the Empire: The Nature of the Tax System in the Philippines, 1565-1804," *Philippine Studies,* Vol. 51, No. 1 (2003): 70-73.


*Figure I.1: Map of Luzon and surrounding islands with labelled rivers, bodies of water, and capital cities of bishoprics and archbishoprics (as their names appear in 17th and 18th century documents).*[27]

This prolonged depression cannot be attributed solely to the San Andrés Earthquake. The Dutch attempts on Manila had depleted Spanish resources and the all-important silver trade with China had slowed.[28] As that trade lulled, the profitability of Manila evaporated. At the midpoint of the seventeenth century, the islands were impoverished, had suffered

[27] This figure was constructed using the open source software program *QGIS,* where the land mass, bodies of water, and rivers were constructed using data available through the free data package titled "OpenStreetMap."

[28] The decline in trade was linked to both the decline of Ming China and a gradual convergence between bimetallic ratios—the value of a set weight of gold relative to an equal weight of silver—in the Spanish Empire and China, which decreased the profitability of the trade. Dennis Flynn and Arturo Giraldez, "Cycles of Silver: Global Economic Unity Through the Mid-Eighteenth Century," *Journal of World History,* Vol. 13, No. 2 (Fall, 2002): 405.

population decline, and were on the cusp of rebellion.[29] Tribute from the *encomiendas* and direct taxes could not provide enough income to sustain the colony, and nothing cultivated in the Philippines could be sold for immense profit. The colony lacked significant gold deposits, quality iron, and skilled laborers.[30] Nor were any valuable crops or commodities available for export.[31] Little wheat, essential to the Spaniards, was grown in the colony.[32] And the galleons, still responsible for as much as fifty percent of the colony's annual income, routinely failed owing to storms, administrative disputes in Nueva España, and threats of piracy.[33] These deficiencies and vulnerabilities, blemishes during the colony's infancy, became crippling once Manila lost its regional primacy and wealth.

## The Philippines from 1645 to 1762

Few histories on the Spanish Philippines are available for the period between 1645 and the mid-eighteenth century, let alone the natural disasters that transpired during those years. This reflects, in part, a scarcity of sources. Documents stored in the Philippines were destroyed during invasions by Muslim raiders, the British during the sack of Manila (1762-1764), the Japanese during their occupation of the islands during WWII (1942-1945), or the elements. Copies of some of the destroyed documents, especially administrative briefs and

[29] See de la Costa, *The Jesuits in the Philippines,* 411-413. Additionally, see prior footnotes on demographic changes and revolts during the latter half of the seventeenth century.
[30] See Alonso, "Financing the Empire," 84-88 for more information on crops. For information on the lack of specialized labor, see *AGI, Filipinas* legajo 17, Rollo 1, Número 20.
[31] As previously mentioned, the success of the galleon trade seems to have impeded agricultural development in Luzon and the Philippines. See Warren, "Weather, History, and Empire," 198.
[32] *AGI, Filipinas* legajo 193, Número 20.
[33] Giraldez, *Age of Trade,* 117. A complete listing of all the galleons and vessels that perished or were afflicted by storms, as well as the Dutch and pirates, is offered in an appendix to James Warren's "Weather, History, and Empire" as a table. Warren, whose work cites Friar Miguel Selga (see below), William Lytle Schurz, the Blair and Robertson collection, and Ricardo García Herrera (see Chapter 2), has produced the most thorough, published account of lost galleons currently available to researchers. See Warren, "Weather, History, and Empire," 209-217.

letters, are scattered in archives in Seville, Madrid, Mexico City, Acapulco, New York, Ann Arbor, Chicago, and St. Louis among others. These documents, all in antiquated Spanish, are difficult to access and translate for contemporary Filipinos and many Southeast Asian historians. Thus, lack of access partially explains the dearth of scholarship on this period.

The lack of scholarship may also reflect an old consensus amongst academics that the Philippines were not dynamic in this period.[34] The aforementioned economic recovery at the start of the eighteenth century was the result of a revived silver trade with Qing China. The Mexican silver cycle, which lasted from approximately 1690 to 1720, generated more wealth than the previous Japanese cycle, but failed to return the Philippines to regional primacy.[35] After the new silver cycle ended, slaving raids from an increasingly hostile Sulu Sultanate and successive wars with the British again weakened the Spanish position in Manila until 1762, when the British successfully captured Manila during the Seven Years War. The city was ultimately returned to the Spanish in 1764, but the echoes between the seventeenth and eighteenth century are apparent.

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[34] In his first published article, Michael Pearson said that by the seventeenth century the Spanish suffered a decline in "spirit," that the Philippines (or rather, the Spanish colony) failed to develop further. Pearson later disavowed this generalization. See M.N. Pearson "Spain and Spanish trade in Southeast Asia" in *The world of the Indian Ocean, 1500-1800: Studies in Economic, Social, and Cultural History,* ed. M.N. Pearson (Burlington, Vermont: Valorium, 2005), 128. According to Horacio de la Costa, William Lytle Schurz (the first historian to study the Manila Galleons in-depth) was of a similar opinion. See de la Costa, *The Jesuits in the Philippines,* 416. Similarly, the Blair and Robertson collection, an oft-cited resource for English-speaking scholars, focuses primarily on the period prior to 1645. Of the collection's 55 volumes, almost two-thirds are dedicated to the period between 1565 and 1645. Information on the period between 1645 and the British occupation of Manila in 1762 is present from Volumes 35 through 48, but not at the level of detail achieved in earlier volumes, which offered multiple documents from each year of the colony's history, thus providing a false impression that little of significance transpired. This, according to Glória Cano, was a conscious choice intended to portray Spanish Imperialism as static, unchanging, and retrograde, which thereby justified the American imperial adventure in the Philippines. See Glória Cano, "Blair and Robertson's 'The Philippine Islands, 1493-1898': Scholarship or Imperialist Propaganda?" *Philippine Studies,* Vol. 56, No. 1 (March 2008), 5, 34-36.

[35] The silver trade in the eighteenth century transpired alongside the exchange of other commodities and an increased European (especially British) presence in Southeast Asia. See Giraldez, *Age of Trade,* 171-173. For more on the Silver Cycles, particularly the Mexican Silver Cycle, see Dennis Flynn and Arturo Giraldez, "Cycles of Silver: Global Economic Unity Through the Mid-Eighteenth Century," *Journal of World History,* Vol. 13, No. 2 (Fall, 2002): 392, 406-407, and 411-412.

Histories and ethnohistories composed over the previous four decades, however, indicate the colony was undergoing profound social and economic developments from 1645 until the mid-eighteenth century, even if its role in regional and global trade was relatively unchanging. John Leddy Phelan and Carolyn Brewer in *The Hispanization of the Philippines* and *Holy Confrontation* respectively demonstrate that, throughout the seventeenth and eighteenth centuries, the Spanish consolidated and expanded their influence in lowland Luzon (and the Pacific Islands) through *reducción,* a program of coerced urbanization and conversion applied to the indigenous peoples (referred to as *indios* or *naturales* in Spanish documents).[36] This stratagem relied heavily on the five mendicant orders present in the Philippine Islands: the Augustinians, Dominicans, Franciscans, Jesuits, and Augustinian Recollects. *Reducción* encountered middling success in enforcing sedentary lifestyles amongst indigenous populations, who were previously semi-nomadic, and in promoting Catholic lifestyles and gender norms.[37] However, as Dennis Roth and Nicholas Cushner demonstrated in their respective works *The Friar Estates* and *Landed Estates in the Colonial Philippines*, reliance on the clergy bred new problems for colonial administrators as the mendicant orders purchased vacant *encomiendas*, ultimately gaining control over farmland and laborers starting in the mid-seventeenth century. These "friar estates" provided the mendicant orders with financial independence from the colonial administrators and therefore a degree of autonomy rarely matched in other Spanish colonies.[38]

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[36] John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses,* 1565-1700 (Madison: University of Wisconsin, 1967), 4, 8-9, 47, 70, 159.

[37] See *Ibid,* 153 and 156-158. See also Carolyn Brewer, *Holy Confrontation: Religion, Gender, and Sexuality in the Philippines, 1521-1685* (Mandaluyong, Philippines: Raintree Publishing, 2001), 6, 32-33, 46, 95, 121, 187, 192-193, 200, 210, 255, and 264-265.

[38] See Dennis Morrow Roth, *The Friar Estates of the Philippines* (Albuquerque: University of New Mexico, 1977), 2, 25-27, 29, 32, 44-45, 71, 86-88, 94-98, 117, 120, 147, and 149. Also see Nicholas P. Cushner, *Landed Estates in the Colonial Philippines* (New Haven: Yale, 1976), 1, 3, 5-7, 25-27, 33, 43-45, and 70.

However, as the work of several ethnohistorians—most famously William Henry Scott—have demonstrated, the *naturales* did not experience these profound changes uniformly. Spanish efforts to consolidate their control over Luzon via *reducción* were always limited by the small number of clergymen present in the colony and the island's topography. Beyond Manila and the course of the Pasig River, most *naturales* never encountered a Spaniard aside from their designated priest. In the provinces distant from Manila, two priests would preside over several recently established villages. Spanish authority and influence over the provincial lowlands, prior to the late-eighteenth century, was therefore tenuous.[39] Thus, to better exert control, Spanish colonizers coopted pre-existing forms of social organization, empowering the *datu* or chief of a *barangay* or kin group as *indio principal* responsible for collecting tribute.[40] In exchange, the Spaniards promised protection from sea raids, other *naturales*, and the mountain-dwelling nomads.

However, the Spanish found it almost impossible to project their influence into the highlands, where hostile nomadic tribes resided. The Zambales mountains, which start at the northern mouth of Manila bay and run along the western coast into northern Luzon, housed a tribe of the same name who resisted proselytization and harassed the lowlands directly north of Manila.[41] Most famously, however, the Cordillera—the mountains that run from the tip of Northern Luzon to Central Luzon, separating the Cagayan river valley from Luzon's western littoral plain—was home to the Igorots, a tribe of head-hunters who

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[39] Phelan, *The Hispanization of the Philippines,* 12-13, 15-16, 31-32, and 40.
[40] *Ibid,* 15-16. Information on pre-contact hierarchies and social organization amongst indigenous peoples in the Philippine Islands can be found in the collective works of ethnohistorian Henry William Scott. His work on lowland peoples, compiled through vernacular-Spanish language dictionaries composed by friars stationed throughout the Philippines, demonstrates how the Spanish coopted local elites and social structures to colonize the islands. See William Henry Scott, *Barangay: Sixteenth Century Philippine Culture and Society* (Quezon City: Ateneo de Manila, 1994), 4, 7, 127, and 222-224.
[41] See Scott, *Barangay,* 250-252.

successfully resisted occupation and colonization until the American period (1898-1941).[42] The resistance of such tribes curtailed Spanish influence to river valleys and the coasts, which simultaneously rendered the mountains a potential sanctuary for lowland *naturales* seeking to (momentarily) evade Spanish tax collectors, soldiers, or clergymen.[43]

Despite difficulties consolidating control over the lowlands, the economy of the fledgling colony incrementally diversified throughout the eighteenth century, as evidenced by the increasing cultivation of several exportable crops, increased mining in the Camarines mountains south of Manila, and increased trade between Manila and various Asian and European powers.[44] None of these could rival the lucrative silver trade, but all supplemented it. The silver trade would dominate the colony until after the conclusion of the British occupation in 1764, when the Philippines—like most of the Spanish Empire—were transformed by the Bourbon Reforms of Carlos III. The Bourbon Reforms established fledgling tobacco and sugar industries in the Philippines. The success of these new trade goods, and the collapse of the galleon trade during the Mexican War for Independence in

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[42] The Igorots and Spanish were brought into constant conflict because the Cordillera was known to contain gold deposits. Though the gold was low quality and scarce, Spaniards consistently sent expeditions into the mountain to mine it during the early seventeenth century. These expeditions, as well as efforts to construct a road through the Cordillera to connect Manila to Northern Luzon, routinely failed owing to resistance from the Igorots. The first church on the Cordillera would not be established until 1667, nearly a century after the Spanish first arrived in Luzon. Rather than trying to subjugate the mountain peoples through force, the Spaniards ultimately pursued a strategy of conversion, encouraging converts to Catholicism to descend from the mountains to the more-easily controlled plains. See William Henry Scott, *History on the Cordillera: Collected Writings on Mountain Province History* (Baguio: Baguio Printing, 1975), 1, 6-7, 10, and 19. See also William Henry Scott, *The Discovery of the Igarots: Spanish Contact with the Pagans of Northern Luzon* (Quezon City: New Day, 1974), 4, 10-11, 14, 24, 37, 46-47, 67, 97, 101, 103, 110-112, 140, and 144-146.

[43] Scott, *History on the Cordillera,* 176 and 188. It should also be noted that, in times of duress, highland peoples would descend the mountains and seek shelter in the lowlands, though they would often return to the mountains and nomadic lifestyles after conditions improved (much to the Spaniards' consternation). See Scott, *The Discovery of the Igarots,* 52.

[44] See Cushner, *Landed Estates,* 42-45. See also Maria Lourdes Diaz-Trechuelo: "Eighteenth Century Philippine Economy: Commerce." *Philippine Studies,* Vol. 14, No. 2 (April, 1966): 255 (silver trade), 256-258 (regional trade), 262-263, and 271-273; "Eighteenth Century Philippine Economy: Mining." *Philippine Studies,* Vol. 13, No. 4 (October, 1965): 763, 774, 776, and 787; and "Eighteenth Century Philippine Economy: Agriculture." *Philippine Studies,* Vol. 14, No. 1 (January, 1966): 65, 67, 92, 95, 113-114, and 124-126.

1814, ushered the Philippines into a plantation-economy akin to those in the Caribbean.[45] These dramatic changes, it must be noted, were directed externally from distant Madrid and the Americas.

## Defining a Study

The one hundred years following 1645 were therefore a period where expansion, contraction, and adaptations to the colonial environment all transpired together. Afterwards, extraneous events and innovations devised in the colonial metropole again upset the established dynamic between the environment, the colonizers, and the colonized. Given these contradictory developments, this dissertation asserts the period from the San Andrés Earthquake until the mid-eighteenth century is best comprehended through the prism of disruptions. Natural hazards are therefore a perfect avenue for understanding an otherwise difficult to assess period.

Assessing disaster throughout the Philippine archipelago, however, is not the work of one study but of dozens. The seven-thousand-plus islands are home to numerous ethno-linguistic groups and ecologies, all of whom held distinct relations with their diverse environs before the arrival of the Spanish. Nor was Spanish influence, as mentioned, uniform across the islands. Cebu and Manila were the epicenters of Spanish authority. Their influence radiated outwards and decreased with distance from the two cities, with the exception of the highlands, where Spanish suzerainty abruptly ended. Thus, the Spanish influence on indigenous peoples and their conceptions of disaster was subject to distance

[45] Alonso, "Financing the Empire," 87-88; Cushner, *Landed Estates,* 3 and 70; and Roth, *The Friar Estates,* 117-120, 135, and 147-149.

and topography.[46] These complications, along with the fragmentary nature of the surviving source material, require a study of disaster and catastrophe be limited in geographic scope.

This dissertation therefore restricts itself to investigating the island of Luzon, with an emphasis on lowland Central Luzon stretching from the Laguna de Bay Province and Camarines Norte in the south to Pangasinan and the Cordillera in the north. Its period of study, as outlined above, begins in 1645 in the moments just prior to the San Andrés earthquake. Its endpoint is the year of the greatest natural calamity of the eighteenth century to transpire in Central Luzon: the 1754 eruption of Mt. Taal, a volcano located approximately sixty kilometers south of Manila. However, documents detailing natural hazards from as late as 1762, just prior to the British invasion and sacking of Manila, are considered. Thus, the dissertation studies the whole mid-colonial period, more than a century of transition, experimentation, and adaptation.

Although no study, to this author's knowledge, has focused on historic natural hazards and their impact between 1645 and 1754 in Luzon, the collected works of multiple scholars offer valuable initial insights. First and foremost among them are the works of Jesuit scholars at the famed Observatory at the Ateneo de Manila. The Observatory, established in the nineteenth century, produced the earliest meteorological and seismological studies of the Philippine Islands,[47] including two of the earliest anthologies of historic Philippine hazards: *Seismology in the Philippines*, composed by Friar Miguel Saderra Maso (1895) and *Catalog of Typhoons, 1348-1934,* written by Friar Miguel Selga (1935).[48]

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[46] See Barbara Andaya and Leonard Andaya, *A History of Early Modern Southeast Asia,* 209 and 258-259. The effect of geography on colonial influence is also discussed in previous footnotes.

[47] The Observatory was founded in 1865. See Aitor Anduaga, *Cyclones and Earthquakes: The Jesuits, Prediction, Trade, and Spanish Dominion in Cuba and the Philippines, 1850-1898* (Quezon City: Ateneo de Manila, 2017), 26.

[48] Miguel Selga, S.J., *Catalogue of Typhoons, 1348-1934* (Manila: Manila Weather Bureau, 1935) and Miguel Saderra Maso, *La seismología en Filipinas* (Manila: Ramirez, 1895).

Each catalog provides information on historic hazards including the location, year, and estimated impact of the hazard based on the damage it caused. Both works, well after their publication, remain authoritative and invaluable resources.[49]

While natural hazards were never ignored in more recent histories of the Philippine Islands, such events were not the focus of regional histories of commerce, culture, demography, and ethnography. However, the advent of contemporary disaster scholarship (which achieved particular prominence in the works of Susannah Hoffman and Anthony Oliver-Smith in the previous twenty-five years) brought renewed interest to contemporary and historic disaster. By proposing that vulnerability to natural hazards was a result of socio-economic forces, they offered a paradigm that considered disaster response to be an idiosyncratic product of culture.[50] Amongst scholars of the Philippines, the most prominent adherent to this approach is Greg Bankoff. A uniting premise to his twenty years of scholarship on Philippine and Southeast Asian disaster is that exposure to frequent, severe natural hazards produced "cultures of disaster."[51] That is, cultures in the Philippines and Southeast Asia are attuned to and expect natural hazards to occur. The inevitability of

[49] Selga's catalog of impactful typhoons is still utilized by natural scientists studying Pacific storms and their historic impact, including one Ricardo García Herrera, whose work is discussed at length in Chapter 2.
[50] See Anthony Oliver-Smith, "Theorizing Disasters: Nature, Power, and Culture," in *Catastrophe and Culture: The Anthropology of Disaster,* ed. Susanna M. Hoffman and Anthony Oliver-Smith (Santa Fe: School of American Research, 2002), 23-25, 27-29, 37, and 39-41. For more on the evolution of the (anthropological) study of natural hazards—from its origins in research on the effects of wartime bombardment at the conclusion of WWII to contemporary theorizations of vulnerability—see Anthony Oliver-Smith and Susanna M. Hoffman, "Introduction: Why Anthropologists Should Study Disasters," in *Catastrophe and Culture: The Anthropology of Disaster,* ed. Susanna M. Hoffman and Anthony Oliver-Smith (Santa Fe: School of American Research, 2002), 5-6 and 9.
[51] Greg Bankoff, "Cultures of Disaster, Cultures of Coping: Hazard as a Frequent Life Experience in the Philippines," in *Natural Disasters, Cultural Responses: Case Studies toward a Global Environmental History*, ed. Christof Mauch and Christian Pfister (Plymouth, UK: Lexington Books, 2009), 267, 268-270.

hazards in turn affects responses in the short- and long-term, including the adaptations implemented after a disaster transpires.[52]

The majority of Bankoff's work, though, is concerned with the modern Philippines, from the late Spanish period in the nineteenth century, through the American and Japanese occupations, and up to the present day. His work on the sixteenth, seventeenth, and eighteenth centuries is less extensive. A notable exception is the article "A Tale of Two Cities," which details how the city of Manila adapted to the dual risks of seismic hazards and fire throughout its history.[53] However, even this article devotes most of its attention to developments that took place in the nineteenth century.

Undoubtedly, forthcoming publications from Bankoff and others will provide new information on the role of natural hazards in Philippine history prior to the nineteenth century. For instance, recent research performed by James Warren has provided a comprehensive list of every storm to impact the Manila Galleons between 1565 and 1815.[54] For the moment, though, this dissertation is engaging with a little-studied facet of an understudied period. Therefore, its objectives are to identify historic natural hazards that took place between 1645 and 1754 in Luzon, determine whether they were impactful, and—if so—describe how these historic hazards impacted the development of colonial

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[52] Greg Bankoff and Joseph Christensen, "Bordering on Danger: An Introduction," in *Natural Hazards and Peoples in the Indian Ocean World*, ed. Greg Bankoff and Joseph Christensen (New York City: Palgrave Macmillian, 2016), 2, 6, and 20-21.

[53] Greg Bankoff, "A Tale of Two Cities," 170-174.

[54] See Warren, "Weather, History, and Empire," 183, 209-217 (Table of Storms). This edited chapter and a recently published article by Warren titled "Typhoons and the Inequalities of Philippine Society and History," hints at a forthcoming monograph studying the historical impact of typhoons on the archipelago throughout the Spanish Colonial Period and into the present. In the article, Warren emphasizes the historic frequency of typhoons in the Philippines and how, since colonization began in the islands, market forces and colonial exploitation heightened the vulnerability of indigenous peoples. Thus, typhoons were made more impactful while the population of the archipelago grew over the preceding centuries. Still, although Warren discusses a wide breadth of time in the article, its primary focus is nineteenth-century hazards. See James Francis Warren, "Typhoons and the Inequalities of Philippine Society and History," *Philippine Studies,* Vol. 64, No. 3-4 (Sept.-Dec. 2016): 457 and 461-464.

Luzon. It draws upon the scholarship of friars Selga and Maso, but also upon the techniques and strategies developed by Hoffman, Oliver-Smith, and Bankoff. However, to study how historic natural hazards interacted with a pre-modern colonial society, it proposes a novel approach.

To explain how this dissertation studies natural hazards, Chapter 1 will provide an outline of the emerging, multidisciplinary field of historic natural hazard studies, first linking it to historic climatic studies and then demonstrating that hazards can be considered both as events and—in the case of frequent disasters—as processes. The chapter then utilizes prominent studies of historic hazards throughout the world to identify three ways disasters could impact societies: physically, socio-economically, and culturally. These three forms of impact, the chapter asserts, are respectively visible in the short-, medium-, and long-term. A holistic study of natural hazards' impact in the Philippines, then, requires studying how disasters altered the physical environment, disrupted trade and finance, forced institutional adaptation, and were enshrined in memory amongst the island's various residents.

Chapters 2 through 6 examine these three forms of impact. Chapter 2 considers hazards as individual, disruptive events that caused physical alterations to the environment and damaged human structures. Chapter 3, to study the social and structural economic consequences of natural hazards on colonial institutions, considers them as a process rather than a series of events. Chapters 4 through 6 concern themselves with long-term, cultural or behavioral impact amongst various colonial populations. Chapter 4 examines the literate colonists' response to natural hazards. Chapter 5 examines the *fiesta de las lagrimas de San Francisco,* which commemorated a miracle that transpired during the San Andrés Earthquake. Finally, chapter 6 considers the response of colonial migrant laborers—soldiers,

mariners, and other low-paid professionals sourced from Andalusia, Nueva España, and other parts of the Colonial Hispanic World—to Luzon's natural hazards.

The connecting feature of all these chapters is the ubiquity of natural hazards' influence on Colonial Luzon. The most exceptional disasters were the most destructive. They were remembered long-after all those who survived them passed away. However, these spectacles overshadow the persistent influence of recurring natural hazards, the constant stream of earthquakes, fires, eruptions, storms, floods, typhoons, and winds that were part of the rhythm of life in Luzon. Although the destruction occasional hazards caused was striking, the dissertation chooses to focus on how such calamities became routine, and how natural hazards in Luzon influenced the contours of every institution, culture, and society present on the island.

# Chapter 1: The Emerging Field of Historic Natural Hazard Scholarship

The study of historic natural disasters and their impact is in its infancy. Natural hazards and disasters are a universal concern, amplified most recently by anxiety over climate change and humankind's impact on the natural world.[1] As the global population increases and infrastructure expands accordingly—and as climate change continues to increase the frequency of severe typhoons, hurricanes, and cyclones—the impact of natural hazards on vulnerable populations is only expected to grow.[2] As a result, the potential for unprecedented, damaging disasters will inexorably rise.[3] Understandably, this contemporary unease has fostered broad interest in climates and natural hazards, including those from the distant past.

While such disasters have enjoyed the attention of political economists, sociologists, geologists, climatologists, and archaeologists, historians have proven more reluctant to study these extremes.[4] Historians' hesitation stems from serious questions on what, if any,

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[1] There is evidence that since the Industrial Revolution human activity has altered local atmospheres. Stories of the London Fog or Pittsburgh in the late nineteenth-century are well-known instances of human activity deeply affecting air quality. However, the ability of humans to affect the atmosphere on a global scale through carbon dioxide emissions was first advanced by natural scientists in the 1960s (and later confirmed in 1976 by the Keeling Curve, which traced rising carbon dioxide levels in the second half of the 20th century). At this point there is no scholarly debate on whether global climate change is transpiring or whether it is driven by human activity. For a history of climate change and skepticism towards it, see Naomi Oreskes, Erik Conway, David J. Karoly, Joelle Gergis, Urs Neu, and Christian Pfister, "The Denial of Global Warming" in *The Palgrave Handbook of Climate History,* ed. Sam White, Christian Pfister, and Franz Mauelshagen (London: Palgrave MacMillan, 2018), 149-150, 159-161, and 165.

[2] Brief reflection brings to mind several such disasters—Hurricane Katrina in New Orleans (2005), Hurricane Maria in Puerto Rico (2017), and Typhoon Haiyan in the Philippines (2013).

[3] For the role of globalization and the expansion of human activities in producing novel and complex vulnerabilities, see Anthony Oliver-Smith, "Theorizing Disasters: Nature, Power, and Culture," in *Catastrophe and Culture: The Anthropology of Disaster,* ed. Susanna M. Hoffman and Anthony Oliver-Smith (Santa Fe: School of American Research, 2002), 43-46.

[4] "But whereas archaeologists have developed productive links with the paleosciences, historians have, on the whole, remained muted voices in the debate until recently." From John Haldon, Timothy P. Newfield, Arlen F. Chase et al, "History meets paleoscience: Consilience and collaboration in studying past societal responses to environmental change," *Proceedings of the National Academy of Sciences,* PNAS Latest Articles (March 2018): 1. From this point forward, *Proceedings of the National Academy of Sciences* will be abbreviated to *PNAS*.

significant impact historical natural hazards and disasters possess. Undeniably, they are spectacular events. But how these temporally and spatially localized, individual disruptions impact socio-cultural, political, or economic trends over time, especially in conjunction with actions taken by humans, is often unclear. Therefore, determining natural hazards' impact in Luzon between 1645 and 1754 first requires setting the parameters for inquiry. It requires asking how historic hazards should be envisioned and how their impact should be assessed. And, to answer these questions, some discussion of the interrelated fields of climatic and disaster history is vital.[5]

## Conceptualizations of Historic Natural Hazards

Historians' hesitance to engage with historic disasters originates from two concerns. First, attributing human actions to natural events, if taken to extremes, can deny human agency, an argument that historians, as humanists, oppose. Second, history is the study of trends, and disasters, although spectacular, are events. Therefore, natural hazards' capacity to affect geopolitical and socioeconomic trends beyond the areas they immediately impact is dubious. These twin concerns have produced a pronounced division amongst historians over the capacity of environmental disruptions—either natural hazards or the closely related concept of sudden climatic shifts—to broadly affect societies. Therefore, scholarly

[5] A brief overview of relevant terminology is also essential. Literature from natural scientists, social scientists, and humanists alike blends narratives of historic disasters, historic climate change, and historic collapse. Historic disasters occurred when a natural hazard—an extreme event generated by natural processes (i.e. an earthquake, drought, or flood)—interacted with human structures to generate a natural disaster (see Introduction). Climate change represents shifts in precipitation and temperature on an annual or decadal scale. Historic crisis and collapse are vaguer; while they imply suddenness, both arguably occur over decades, or even centuries. Crisis is often described in the literature as comprising a set of cascading events whose impact grows successively before accelerating uncontrollably. Crises may ultimately end in collapse. Guy D. Middleston, "Nothing Lasts Forever: Environmental Discourses on the Collapse of Past Societies," *Journal of Archaeological Research,* 20 (2012): 260-263.

literature on environmental disruptions can be divided into two categories based on how such disruptions are imagined. These categories may be described as "Annales" (or "Classic") because this imagining of environmental disruptions draws heavily upon the Annales school of historical thought, and "Determinist" (or "Revisionist), which assumes hazards or abrupt changes in climates can exercise pronounced effects on societies.

The Annales interpretation of hazard (and climate) has its roots in Fernand Braudel's *The Mediterranean* and Emmanuel Le Roy Ladurie's *Times of Feast, Times of Famine*. Both envisioned history as the study of trends and processes over time, with Braudel—the twentieth century's most famous historian—arguing, "[T]he long run always wins. Annihilating innumerable events…it indubitably limits both the freedom of the individual and even the role of chance."[6] Within Braudel's division of time—short, intermediate and long time (*longue durée*)—natural hazards exist in short time. They are, from the perspective of the humans who experience them, random and spectacular disruptions. Their historical significance beyond the communities immediately impacted, though, is limited with a few notably destructive exceptions, such as the eruption of Mt. Vesuvius that buried Pompeii.[7]

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[6] Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II, vol. 2* (London, Collins, 1972), 1244. More recent histories of the Mediterranean apply Braudel's conclusions (as represented here) to disasters, revolution, and other dramatic events in the Mediterranean. Authors Peregrine Horden and Nicholas Purcell write in *The Corrupting Sea, "*The handmaids of teleology are catastrophe and revolution," and that "Historians, as much as environmental archaeologists, are prone to 'over-periodizing'—searching for phases of pivotal importance…to divide up the past. A merit of Mediterranean history as we propose it is that it so sturdily resists these errors. We must be prepared to see the events which we study on a smooth scale stretching into the distant past." Thus, they conclude, "There may be prominent events on the scale, but we should be reluctant to emphasize them too greatly." Peregrine Horden and Nicholas Purcell, *The Corrupting Sea: A Study of Mediterranean History* (Oxford: Blackwell, 2000), 301, 303, 310, 326-327.

[7] Any natural hazard's significance is further reduced when considering geologic time. Over millions of years, prominent events like natural hazards fade, with even the greatest becoming indistinguishable within larger processes.

Equally foundational to the "Annales" approach to disruption is Emmanuel Le Roy Ladurie, who studied climatic history and, to a lesser extent, natural hazards in *Times of Feast, Times of Famine*. Originally published in 1967, the monograph displayed innovative uses of archival records—such as images of glaciers or, most famously, data on grapes and wine from vineyards—to reconstruct Western European climates from the previous thousand years. Through his own material and studies from dendrochronologists, climatologists, and other natural scientists, Ladurie assessed the potential impact of the "Little Ice Age" and the "Medieval Warming Period," climatic shifts that many historians have argued shaped Eurasian history.[8]

Ultimately, Ladurie expressed reluctance to consider either climatic shift impactful. His conclusions reflected his aversion to what he called "anthropocentrism." Ladurie rejected climatic historians who, "instead of studying the climatic change in itself and for its own sake launched themselves into something quite different and highly dangerous, namely the climatic interpretation of human history."[9] Searching for explanations for human events in the climate record was, to Ladurie, reductionist.[10] It was also a distortion of the study of

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[8] Emmanuel Le Roy Ladurie, *Times of Feast, Times of Famine: A History of Climate Since the Year 1000,* trans. Barbara Bray (London: George Allen & Unwin, 1971), 1, 57, and 125. Chapters 4 and 5 of *Times of Feast* deal specifically with the Little Ice Age and Medieval Warming Period respectively. Throughout his monograph, Ladurie cites several climatologists who did original research on historic climatology including Herbert H. Lamb, whose *Climate, History, and the Modern World* approached climatic history from the perspective of a climate scientist. Like *Times of Feast, Times of Famine*, Lamb's work is a classic of climatic history often cited both for its data and for its theory of human-climate interaction. Lamb argued "Human history is not acted out in a vacuum, but against the background of an environment in which many sorts of changes are always going on[.]" Lamb envisioned human history and climate as two independent cycles, with climatic cycles possessing the capacity to interrupt and direct "social" cycles. Akin to Ladurie, Lamb believed in the potential of climatic history and in its reconstruction through archival records. Lamb, however, was more convinced of the potential for climate to influence human actions. See H.H. Lamb, *Climate, History, and the Modern World: 2nd Edition* (London and New York: Routledge, 1997), 4 (complexity of tracking human-climate interactions), 6 (social and climate cycles), and 13-14 (theoretical mechanics of human-climate interaction).

[9] Ladurie, *Times of Feast, Times of Famine,* 7.

[10] To avoid intellectual reductionism, Ladurie advocated for establishing the history of climate first, and then working to relate the history of climate to the history of ecology and, ultimately, the history of humankind. *Ibid,* 19-20, 22, 120.

the history of climate, a non-human feature of the environment. He deemed such behavior "anthropocentric," a quasi-narcissistic attempt to link the climate's history to human crises.[11]

Although his approach was path-breaking, Ladurie's conclusions about the impact of climate change over long periods of time were restrained:

> In short, the narrowness of the range of secular temperature variations, and the autonomy of the human phenomena which coincide with them in time, make it impossible for the present to claim that there is any causal link between them.[12]

In other words, if variations in temperature over centuries were minimal (less than one degree Centigrade) and human agency was exercised—as it always has been—independent of the environment, then no clear link between climate shifts and human action was demonstrable. Ladurie could not conclude that climatic variation had no effect on human action, but neither could he establish a clear link between temperature and people's decisions on a national or global scale. Ultimately, he asked readers to "suspend their judgment" rather than "be skeptical" of climate's influence until further research was performed.[13]

Ladurie's reluctance to declare natural disasters influential was even greater. Using the great hailstorm that struck France just before the harvest of 1788 as a case study, Ladurie argued that the hail was only one of several factors behind the surge in bread prices that ignited the French Revolution. To attribute the blame to a hailstorm, despite all the human factors that spread dissatisfaction through France was, to his mind, ludicrous. Humans created the preconditions for a revolution. Then humans revolted. The hailstorm

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[11] "[T]he anthropocentric approach, which consists in taking a vast human crisis like that of the late Middle Ages and trying to give it a climatic explanation is not a helpful one." *Ibid,* 16-17.
[12] *Ibid,* 293.
[13] *Ibid,* 292-293.

certainly played a role, but as one prompt to action amongst many.[14] Thus by Ladurie's account, disasters had a more limited impact than climate, which itself had an indeterminable capacity to affect human affairs.

This Classic or Annales understanding of climatic shifts' and natural hazards' influence is now being challenged by anthropogenic climate change.[15] Features of the approach, though, inform historians' studies of historic disasters into the present day. The Annales approach is employed to great effect in "Disaster and Political Culture in Germany since 1500" (2009) by Franz Mauelshagen, who has published several studies on the cultural history of climate and disaster. Early in the study, Mauelshagen contends that natural hazards, to be of interest to historians, must be considered as processes rather than single events. In the study, he assessed dialogues surrounding historic flooding in Germany, which he argued happened with sufficient regularity to be considered a process.[16] By construing natural hazards as a routine rather than irregular events, he proved able to study the evolution of responses to flooding over time.[17] For Mauelshagen, the capacity of natural hazards to affect and disrupt infrastructure was unquestioned, but the significance of a

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[14] *Ibid,* 76.

[15] Christian Pfister, "Climatic Extremes, Recurrent Crises and Witch Hunts: Strategies of European Societies in Coping with Exogenous Shocks in the Late Sixteenth and Early Seventeenth Centuries," *The Medieval History Journal*, vol. 10, 1&2 (2007): 39-40. Also see: George C.D. Adamson, Matthew J. Hannaford, and Eleonora J. Rohland, "Re-thinking the present: The role of a historical focus in climate change adaptation research," *Global Environmental Change,* 48 (2018): 195-198; Timothy P. Newfield, Inga Labahn, "Realizing Consilience in Studies of Pre-Industrial Climate and Pre-Laboratory Disease," *Journal of Interdisciplinary History,* vol. 48, no. 2 (Autumn 2017): 211-215; Dagomar Degroot, "Climate Change and society in the 15th to 18th centuries," *WIREs Climate Change,* e518 (2018): 5; and Philip Slavin, "Climate and famines: a historical reassessment," *WIRE's Climate Change,* 7 (2016): 435-436.

[16] Franz Mauelshagen, "Learning from Nature-Induced Disasters: Theoretical Considerations and Case Studies from Western Europe," in *Natural Disasters, Cultural Responses: Case Studies toward a Global Environmental History,* ed. Christof Mauch and Christian Pfister (Plymouth, U.K.: Lexington Books, 2009), 41 and 66.

[17] Mauelshagen's study demonstrated that damming practices employed rational adaptations to flooding over time. These practical adjustments occurred despite the oft-cataclysmic scholastic narratives expounded by the local clergy, demonstrating that multiple dialogues surrounding flooding existed. These dialogues functioned independently from one another as well. The clergy's arguments on the nature of flooding were, Mauelshagen argued, crafted for the clergy. And, he observed that this moral rationalization of weather echoed today's arguments towards anthropogenic climate change. See *Ibid,* 45, 53, 58-60, and 66.

single event on socio-economic and cultural trends was taken to be negligible unless it could be subsumed into a larger process. A single flood, no matter how severe, was too insignificant to influence such trends in the long-term in Mauelshagen's conception of disasters.

Recent scholarship on historic natural hazards tends towards the other, Determinist school of thought. Determinist is not meant in the pejorative, nor is it meant to evoke comparisons to environmental determinism.[18] Rather, Determinist is intended as a neutral description of scholars who assume natural hazards and abrupt climatic shifts can exercise profound influence over human actions.[19] Humanists and scientists who subscribe to this school tend to study disasters associated with conflict, migration, crisis, and collapse, such as the role of volcanic eruptions in the decline of Minoan Crete; the collapse of classic Maya civilization due to climatic shifts; and the failure of the Norse colonies in Greenland due to the start of the Little Ice Age.[20] Other scholars who subscribe to this approach, such as

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[18] For some discussion of reductionist, deterministic thinking in disaster literature, see Dagomar Degroot, "Climate Change and society in the 15th to 18th centuries," *WIREs Climate Change,* e518 (2018): 5, 11, and 12. For disavowals of determinism, see Karl W. Butzer and Georgina H. Endfield, "Critical Perspectives on historical collapse," *PNAS,* vol. 109, no. 10 (March 6, 2012): 3630.

[19] The best example of well-reasoned and acceptable determinist thinking in environmental history is undoubtedly the monograph *Ecological Imperialism* by Alfred Crosby. A field-defining work, *Ecological Imperialism* argues European colonialism was accompanied by widespread ecological transformations, and its success was dependent on colonists' ability to transform and Europeanize the indigenous environment. Equally significant in Crosby's account was the lack of Old-World domesticated animals in the Americas, which limited Amerindians' exposure to several lethal diseases that would decimate their populations during the 16th century. Thus, Crosby's argument was two-fold: Europeans were advantaged as colonizers owing to environmental preconditions (the prevalence of several grains and domestic animals in the Old World) and their success was determined by their ability to export their ecosystem to similar climes. The deterministic element, of course, is the claim that the Eurasian environment, and particularly the European variant, bestowed a competitive advantage. Yet, nothing in this argument explicitly precludes human agency. The environment provided a potent advantage, but Crosby never implies the Colonial Era in the Americas or New Zealand was inevitable. Hence *Ecological Imperialism* is determinist without being reductionist. Alfred Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University, 1986), 3-4, 6, 18, 22-24, 34, 73, 93-95, 102, 133-134, 140-141, 164, and 190. For Crosby describing himself (reluctantly) as an environmental determinist, see Alfred Crosby, *The Measure of Reality: Quantification and Western Society, 1250-1600* (Cambridge: Cambridge University, 1997), i-v.

[20] Haldon et al, "History meets paleoscience," 3-6. For Crete, see A. Bernard Knapp and Stuart W. Manning, "Crisis in Context: The End of the Late Bronze Age in the Eastern Mediterranean," *American Journal of Archaeology,* vol. 120, no. 1 (January 2016): 99-102. For Greenland, see Steven Hartman, A.E.J. Ogilvie, Jón

Geoffrey Parker in *Global Crisis: War, Climate Change, and Catastrophe in the Seventeenth Century,* have hypothesized that periods of extensive volcanic activity can cause momentary shifts in the climate that generate global crises, contributing to revolts and dynastic collapse.[21] In each of these cited works, disasters—especially those capable of enacting abrupt climate shift—are assumed capable of momentarily superseding or redirecting human agency, and thereby affecting social, economic, and cultural trends.

The best representative of the Determinist approach in disaster and climate history is Christian Pfister. His work focuses on the history of climate, though he has studied historic natural hazards as well. He famously explored the link between adverse climate and the European Witch Hunts of the sixteenth century and has also done pathbreaking work to reconstruct the historic climate of Western Europe.[22] For his reliance on paleoclimatic data and his emphasis on collaboration with natural scientists, Pfister is sometimes characterized as the revisionist (and successor) to Ladurie.[23] Behind all his work is the assumption that

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Haakur Ingimundarson et al, "Medieval Iceland, Greenland, and the New Human Condition: A case study in integrated environmental humanities," *Global and Planetary Change*, vol. 156 (2017): 124, 129. See also Andrew J. Dugmore, Thomas H. McGovern, Orri Vésteinsson et al, "Cultural adaptation, compounding vulnerabilities and conjunctures in Norse Greenland," *PNAS,* vol. 109, no. 10 (March 6 2012): 3658, 3662. For the Mayan collapse, see Nicholas P. Dunning, Timothy P. Beach, and Sheryl Luzzadder-Beach, "Kax and kol: Collapse and resilience in lowland Maya Civilization," *PNAS,* vol. 109, no. 10 (March 6, 2012): 3655-56.

[21] See Geoffrey Parker, *Global Crisis: War, Climate Change, and Catastrophe in the Seventeenth Century* (New Haven: Yale, 2013), 33. For more on the Seventeenth Century Crisis that Parker studies, see Anthony Reid, "The Crisis of the Seventeenth Century in South East Asia," in *The General Crisis of the Seventeenth Century,* ed. by Geoffrey Parker and Lesley M. Smith (New York: Routledge, 1997), 230-236. In the same collection: Geoffrey Parker and Lesley M. Smith, "Introduction" in *The General Crisis of the Seventeenth Century,* ed. by Geoffrey Parker and Lesley M. Smith (New York: Routledge, 1997), 4. See also William Atwell, "A Seventeenth Century 'General Crisis' in East Asia," in *The General Crisis of the Seventeenth Century,* ed. by Geoffrey Parker and Lesley M. Smith (New York: Routledge, 1997), 253-256. All the works cited above concur that climate played a role in generating a Seventeenth Century Crisis.

[22] Christian Pfister, "Climatic Extremes, Recurrent Crises and Witch Hunts," 66 and Christian Pfister, Zhongwei Yon, Hannes Schiile, "Climatic variations in Western Europe and China, AD 1645-1715: a preliminary continental-scale comparison of documentary evidence," *The Holocene*, vol. 4, 2 (1994): 206-207.

[23] See Adamson et al, "Re-thinking the present," 198 and Slavin, "Climate and famines," 436.

climate and even some disasters can exert a significant influence over humans (and not just over short spans of time).[24]

In 2018, Pfister along with Sam White and Franz Mauelshagen were editors for a textbook for the study of historic climate change (the first for this subdiscipline of history): *The Palgrave Handbook of Climate Change*. Within, they argue climatic history can be approached through historical climatology, which relies on human records and archives, and paleoclimatology, which employs "natural archives" such as tree rings, ice cores, and glacial migration. Throughout the handbook, the editors advocate for a holistic view of the climate's effect on human affairs, arguing the climate is a constant influence that is capable of exerting muted or outsized influence.[25] Pfister et al, in the introductory section of their handbook, also reconcile their approach with the conclusions of Ladurie's *Times of Feast, Times of Famine.* They argue that Ladurie's doubts over climate's effect primarily applied to long intervals of time, but they also assert that Ladurie believed climate could prove heavily influential over short and intermediate intervals of time. Likewise, they assert that localized variations—climatic shifts limited to one or several regions—can have great and lasting consequences.[26] Thus, the geological and chronological scale a historian implements affects the perceived significance of climatic shifts.

Before continuing, it must be stated that the Determinist approach, taken to an extreme, becomes environmental determinism.[27] Faith in the capacity of natural hazards

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[24] Christian Pfister, Emmanuel Garnier, Maria-João Alcoforado et al, "The Meteorological framework and the cultural memory of three severe winter-storms in early eighteenth century Europe," *Climate Change,* vol. 101 (2010): 281, 300, 301, and 304.
[25] Sam White, Christian Pfister, and Franz Mauelshagen, "Introduction," in *The Palgrave Handbook of Climate History*, ed. Sam White, Christian Pfister, and Franz Mauelshagen (London: Palgrave-Macmillan, 2018), 2.
[26] *Ibid,* 7.
[27] Environmental determinism comes in many forms, but its most maligned characteristics are embodied in *Guns, Germs and Steel* (1997)*,* a commercially successful world history monograph written by Jared Diamond. Like *Ecological Imperialism, Guns, Germs, and Steel* attempts to explain Europe's success in colonizing other continents. However, whereas Crosby's manuscript explained how the divergent environmental histories of

and abrupt climatic shifts to affect human actions means their effects can be exaggerated at the expense of human agency. Aforementioned studies of the collapse of the Viking colony in Greenland and Minoan Crete avoid exaggerating hazards' and the climates' effects by maintaining that human action can dull or practically nullify these exogenous shocks.[28] These papers do as Ladurie advised: they establish the history of the climatic shift or hazard, and then each moves to assess how the those shocks may have interacted with human infrastructure or communities.[29] The common threads that bind these positive examples of the Determinist approach are a focus on mechanisms and the shared assumption that the

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the Americas and Europe bequeathed Europeans a competitive edge as colonizers, Diamond's explains how the Eurasian environment guaranteed Europe's dominance by bestowing multiple staple crops and a diverse array of animals able to be domesticated. The latter all but ensured European success because animals proved incubators for pathogens that Europeans would later transmit to Amerindians and Aboriginal peoples. Thus, Diamond explains European dominance as the product of an advantageous environment. According to Diamond, if the peoples of Australia and Europe had been switched—and Aboriginals had begun their culture in Europe—they would have enjoyed the same success as Western Europeans did.
Both Diamond and Crosby are determinists because both believe the Eurasian environment bestowed indispensable advantages to its peoples. But only Diamond's theories might be called reductionist because he argues human choices were of lesser importance than environmental factors. It should be noted that Diamond argues the environment rather than people is significant because he firmly believes all human beings possess the same faculty and intelligence. *Guns, Germs, and Steel* advocates for a vision of history that says all humans have the potential to succeed, but their environment determines how their cultures and practices developed. Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York and London: Norton and Company, 2005), 16-17, 87, 405-409.
Very few historians are enamored with Diamond's hypotheses. Many, in fact, cite his book as dangerous, as reductionist, and as perpetuating disavowed and racist ideas. Many more take offence to Diamond's conclusions about history as a discipline, which he argues has failed to become a science and is, "at best" a social science or even a humanist discipline. Diamond, in his approach, argues he has completed a monograph of historical science, and hopes others will further his research. *Ibid,* 420, 423-425. For a well-argued critique of Diamond's work, see "Environmentalism and Eurocentrism" by James M. Blaut. He argues Diamond relies on traditionally Eurocentric arguments (including their long-known flaws) to advance his arguments. See James M. Blaut, "Environmentalism and Eurocentrism," *The Geographical Review,* vol. 89, no. 3 (July 1999): 391-393, 397, 400-401, 403.

[28] For Greenland: Dugmore et al, "Cultural adaptation, compounding vulnerabilities and conjunctures in Norse Greenland," 3658. For Bronze Age: A. Bernard Knapp and Stuart W. Manning, "Crisis in Context," 102.

[29] A comprehensive monograph that encapsulates this approach of verifying rather than merely asserting impact is Bruce M.S. Campbell, *The Great Transition: Climate, Disease and Society in the Late-Medieval World* (Cambridge: Cambridge University, 2016), 27-28, 33. Campbell cites Victor Lieberman's approach for accounting for the influence of climate on human action as well. See Victor Lieberman, *Strange Parallels: Southeast Asia in a Global Context, 800-1830, volumes 1&2* (Cambridge: Cambridge University, 2003), 21, 110-112. Lieberman argues "Not only can culture override climate, but adverse conditions can stimulate creative adaptation." *Ibid, 112*.

existence of severe hazards does not guarantee those events exercised catastrophic influence.

These two conceptualizations of natural hazards, disasters, and climatic shifts are distinguished from one another by belief in the significance of environmentally sourced disruptions. In the Annales conceptualization, natural hazards (and to a lesser extent climate) are considered of limited significance, only featuring prominently in geographically and temporally confined histories. Only when natural hazards transpired with seasonal regularity (i.e. riverbanks flooding during Spring) could their influence be significant over long spans of time. By contrast, the Determinist conceptualization envisions human societies, varying in size from towns to regions, as highly sensitive to the environment and to abrupt climatic shifts or disasters. As a result, it views individual disruptive events as potentially significant over large areas and periods of time, as having the capacity to interrupt, distort, and even transform pre-existing social, political, economic, and cultural trends.

Both these approaches are utilized in recent scholarship and remain valid for studying and conceptualizing natural hazards. However, scholarship on historic disasters increasingly favors the Determinist Approach as anthropogenic climate change continues to illustrate the sensitivity of human structures and societies to strengthening hazards and climatic shifts. Thus, most recent scholarship begins from the fundamental assumption that climate and (increasingly) disaster can exercise tremendous influence over human affairs. The methodologies both approaches employ to study how disasters and climatic shifts exert influence over human societies, what components of society they effect, and how that influence changes over time, are detailed below.

## How Disasters Impact People

This subsection explores methodologies, how to assess the impact of historic natural hazards—what did a natural hazard affect, how severely, and for how long. In a subject that invites transdisciplinary consideration, there are many valid approaches. For this dissertation's purposes, they may be separated into Disaster Studies, Cultural Histories of Disaster, and Economic Histories of Disaster. Additionally, a fourth field exists that combines aspects of each methodology to assess the full impact of natural hazards. This dissertation utilizes this additional, combinatorial methodology.

Disaster Studies represents a broad swath of scholarship. Most articles produced by natural scientists, not to mention social scientists who specifically study disaster, may be categorized as Disaster Studies. Monographs from this subset overwhelmingly tend towards a Determinist conceptualization of historic hazards. Undoubtedly, this is owed in part to disciplinary differences since natural scientists, unlike historians, do not need to justify examining a natural hazard; as a display of a natural phenomenon, it is inherently worthy of study. [30] Similarly, political scientists who study recent or contemporary natural hazards are not obliged to answer questions about the significance of natural hazards. The importance of a recent tsunami or storm is apparent. These scholars focus on the mechanics of an event, on how a hazard unfolded. Particularly relevant to this dissertation are the political scientists, sociologists, and the increasing number of historians who specifically study

[30] For example, Raphaël Paris, Adam D. Switzer et al, "Volcanic tsunami: a review of source mechanisms, past events and hazards in Southeast Asia (Indonesia, Philippines, Papua New Guinea)," *Natural Hazards* 70 (2014): 461-463. Scholarship for a broader academic audience produced by natural scientists also includes: William James Burroughs, *Does the Weather Really Matter? The Social Implications of Climate Change* (Cambridge: Cambridge University, 1997); Brian Fagan, *The Little Ice Age: How Climate Made History, 1300-1850* (New York City: Basic Books, 2000); H.H. Lamb, *Climate, History, and the Modern World* (London and New York City: Routledge, 1997); and Ernest Zebrowski Jr. *Perils of a Restless Planet: Scientific Perspectives on Natural Disasters* (Cambridge: Cambridge University, 1997).

historic hazards, their physical repercussions, and how damage from such events promotes societal adaptations. This eclectic group may be referred to as Disaster Scholars.

Disaster Scholars, as previously mentioned in the Introduction, distinguish between a natural hazard, an extreme or abnormal event produced by natural processes, and a natural disaster, which is the result of a natural hazard interacting with human structures or settlements. The impact of a natural disaster is determined by the quantifiable strength of the natural hazard and the vulnerability of the afflicted society. Vulnerability is, much like in ecology, the measurable potential for a subject's processes to be disrupted; it inherently construes human society as a system of interlinked parts that observably function as a whole.[31] The inverse of vulnerability is resilience, the quantifiable ability of human systems to absorb the shocks originating from a hazard event with minimal damage.[32] It may also represent the ability of a society to respond to and recover from a natural hazard. The last critical term employed throughout disaster studies is adaptability, which represents the

[31] See Johannes Ingrisch and Michael Bahn, "Towards a Comparable Quantification of Resilience," *Trends in Ecology and Evolution,* vol. 33, no. 4 (April 2018): 254. Also, for more on imagining society as a system vulnerable to perturbation by natural hazards, see both Karl W. Butzer, "Collapse, environment, and society," *PNAS,* vol. 109, no. 10 (March 6, 2012): 3636-37 and the methodology of John M. Anderies, "Robustness, institutions, and large-scale change in social-ecological systems: The Hohokan of the Phoenix Basin," *Journal of Institutional Economics (2006),* vol. 2, no. 2 (2006): 133-134.

[32] Because Disaster Studies emphasize the ability of natural hazards to disrupt human infrastructure and societies, scholarship also tends to draw on "systems thought." Systems thought refers to an organizational theory that envisions complex and large-scale operations as composed of multiple parts. These parts function together as part of a system, which in turn can operate in tandem with other systems and processes in an even larger system. For instance, the body is composed of several systems and tracts (e.g. digestive system, cardiovascular system, etc.) which are composed of organs that are in turn composed of cells operating in tandem. Systems are a useful way to imagine operations of scale and is particularly effective for tracking how an exogenous shock or disruption to one component can affect the operation of the whole.
In Disaster Studies, societies are conceived of as existing in an equilibrium that is interrupted by a sudden perturbation, such as a hazard event. The impact is determined by the system's inherent vulnerability, and what follows is a period of recovery whose length is relative to the system's resilience before the system ultimately returns to its pre-disturbance state. Notably, this conceptualization lends itself to theories of societal collapse from cascading disruptions or crises; when too many successive shocks transpire, the system is pushed past a "tipping point" where its fundamental nature (and its preferred equilibrium) are altered or transformed. See Johannes Ingrisch and Michael Bahn, "Towards a Comparable Quantification of Resilience," 253; Butzer, "Collapse, environment, and society," 3622, 3636 and 3638; and Haldon et al, "History meets paleoscience," 6.

ways human societies choose to change their practices to reduce vulnerability to natural hazards.[33] Disaster Studies' refined terminology is useful for any study of historic disasters and will be applied throughout this dissertation.

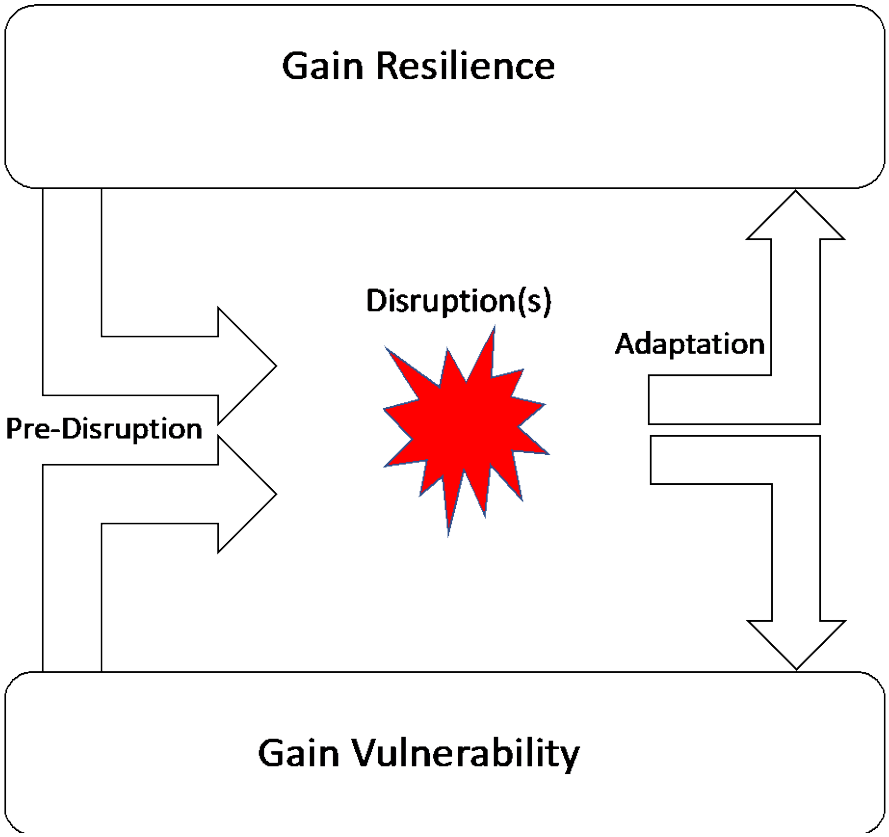


*Figure 1.1: A visualization of how the Disaster Studies method considers natural hazards' impacts. An event causes a disruption, which prompts societal adaptation that either heightens resilience or vulnerability. The society studied then experiences the next hazard from a new equilibrium.*

Methodologically, Disaster Studies imagine each natural hazard as a potential disruption to a society. The quandary of reductionist determinism is adeptly avoided by distinguishing between natural hazards and natural disasters, which offers humanity agency over the disruptive potential of disasters. Where a community is located, what materials it

[33] Eric C. Jones and Arthur D. Murphy, "Linking Broad-Scale Political Economic Contexts to Fine-Scale Economic Consequences in Disaster Research," in *The Political Economy of Hazards and Disasters,* ed. Eric C. Jones and Arthur D. Murphy (Lanham, Maryland: Alta Mira, 2009), 3, 4, 6. See also, from the same edited collection, Anthony Oliver-Smith, "Anthropology and the Political Economy of Disasters," in *The Political Economy of Hazards and Disasters,* ed. Eric C. Jones and Arthur D. Murphy (Lanham, Maryland: Alta Mira, 2009), 13, 15-16, 24-27.

employs in construction, and how well safety regulations are enforced are all factors in determining vulnerability. The intrinsic strength of the hazard event matters, of course, but its intensity will be augmented or mitigated through conscious decisions made by people.

Lastly, in Disaster Studies the impact of natural hazards is resolved over time as an affected society returns to a pre-disruption state of existence. In their two books on historic volcanic eruptions and earthquakes, De Boers and Sanders argue the impact of these events can be metaphorically represented through a time-dependent, decaying sinusoid. Over time, the amplitude of the sinusoid, representative of a disaster's impact, decreases, eventually becoming indistinguishable from background noise. The economic and ecological disruption, not as spectacular as the event itself, decays over a longer period of time as well. Finally, the cultural impact, while relatively muted, can persist for centuries or millennia (as is the case for the story of Pompeii and Mt. Vesuvius). This model based on seismic waves (see figure 1.2) lends itself to superposition—the amplification or diminishment of one wave when it is imposed upon another wave—too. That is, multiple disruptions could produce waves that amplify, dampen, and generally interact with one another.[34]

[34] Jelle Zerlinger de Boer and Donald Theodore Sanders, *Volcanoes in Human History: The Far-Reaching Effects of Major Eruptions* (Princeton: Princeton University, 2002), 1, 17-20 and Jelle Zerlinger de Boer and Donald Theodore Sanders *Earthquakes in Human History: The Far-Reaching Effects of Seismic Disruptions* (Princeton: Princeton University, 2005), 11, 20-21.

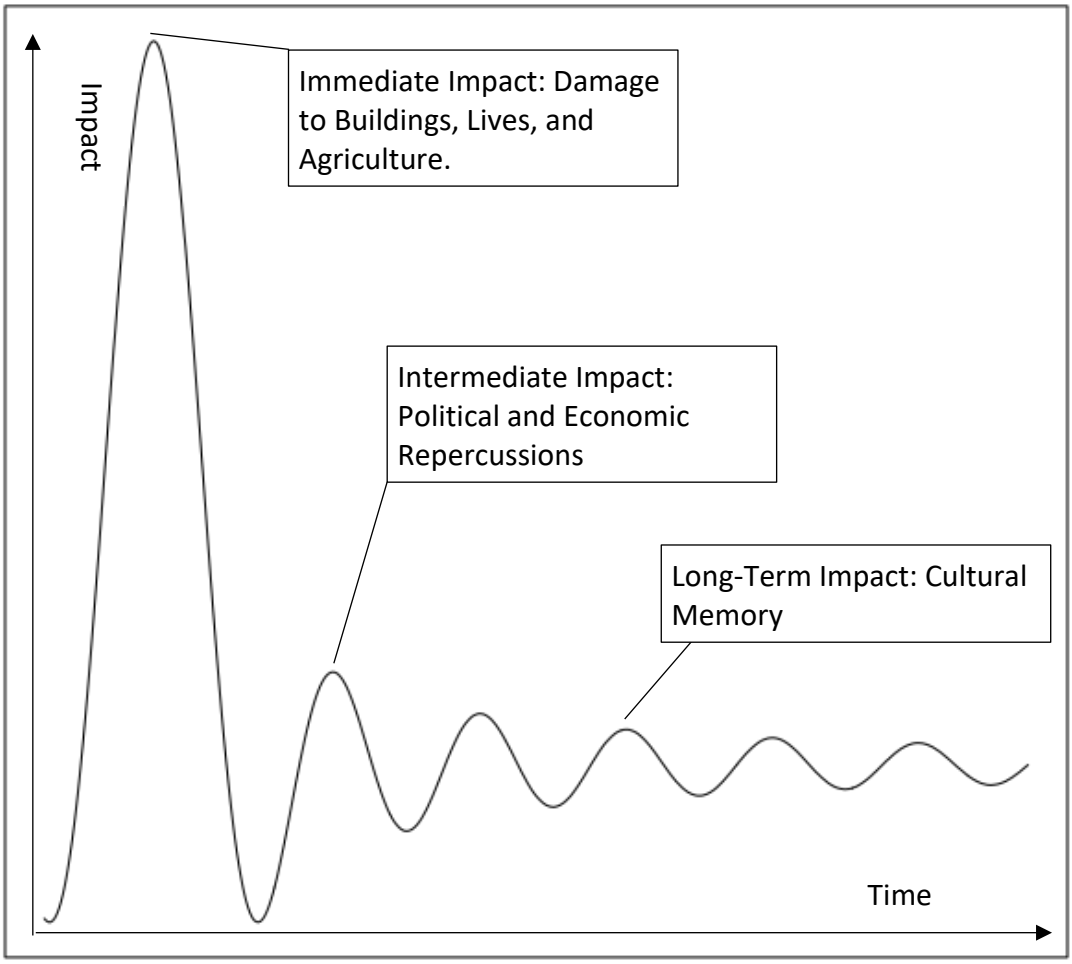


*Figure 1.2: The Sinusoidal Decay model envisioned by De Boers and Sanders. The period (distance between wave crests) increases over time, while the amplitude of said waves decays. This is a metaphor for the impact of geological hazards like earthquakes, which have a sudden and short impact when they occur, a prolonged economic impact, and finally a deep cultural impact that persists for centuries.*

Aspects of Disaster Studies have been critiqued, though, as unsuited to analyzing hazard events from pre-Modern periods.[35] Disaster studies relies on quantified data, both for the strength of the natural hazard being examined and for the damage said hazard imposed on human structures. Standardized measurement of natural hazards only began during the modern age (as late as the twentieth century in much of the world). In the distant past, natural hazards were described differently. They were not measured as they

[35] Stuart B. Schwartz, *Sea of Storms: A History of Hurricanes in the Greater Caribbean from Columbus to Katrina* (Princeton: Princeton University, 2015), xix-xx.

are today, but were instead understood through contemporary criteria. As a result, very little of the information on pre-modern natural hazards that is vital to Disaster Studies techniques can be found in traditional archives.[36] Similarly, although some record of the damage caused by natural hazards exists, that information is often fragmentary and scattered across several letters of correspondence. Thus, applying Resilience or Disaster Studies techniques to the distant past, although still a valuable exercise, cannot fully explore the impact of historic natural hazards.

Cultural Histories of Disaster, which examine historic natural hazards' impact on culture and how various societies comprehended these extreme events, address the weaknesses of Disaster Studies. Whereas Disaster Studies tends to treat every natural hazard as a distinct disruption, Cultural Histories of Disaster envision natural hazards as a process. Franz Mauelshagen's previously discussed work is representative of this methodology because it asks how repeated flooding shaped dialogues and practices around rivers and disasters.[37] Within Mauelshagen's study, it was essential that flooding occurred

[36] Still, it is possible to reconstruct historic hazard events through a combination of scientific techniques and descriptions in archives. See Raphaël Paris, Adam D. Switzer et al, "Volcanic tsunami: a review of source mechanisms, past events and hazards in Southeast Asia," 461.

[37] Mauelshagan demonstrates that, while the clergy in Germany discussed flooding in apocalyptic terms, their prognostications of future devastation did not prevent administrators from adapting dams to flood patterns. Therefore, there were two different dialogues surrounding the same events. In this instance, Mauelshagen demonstrated that disasters were experienced through a cultural lens; a disaster meant different things to different peoples based on their status and occupation. Mauelshagen, "Disaster and Political Culture in Germany Since 1500," 41, 44-45, 55, 58, 59-62. More recent work from Mauelshagen includes an edited volume titled *Historical Disasters in Context*, with several scholars contributing articles that adhere to the following statement from the introduction: "[t]he significance of any such event for human society is largely the result of its historical context, the kind of religious, scientific, and political interpretations it evokes, and the ways these are communicated both through time and space." Cited from Andrea Janku, Gerrit J. Schenk, and Franz Mauelshagen, "Introduction," in *Historical Disasters in Context: Science, Religion, and Politics*, ed. Andrea Janku, Gerrit J. Schenk, and Franz Mauelshagen (New York: Routledge, 2012), 1. In the same edited collection, see also Gerrit J. Schenk, "Managing Natural Hazards: Environment, Society, and Politics in Tuscan and the Upper Rhine Valley in the Renaissance (ca. 1270-1570)," in *Historical Disasters in Context: Science, Religion, and Politics*, ed. Andrea Janku, Gerrit J. Schenk, and Franz Mauelshagen (New York: Routledge, 2012), 31, 44 and Elaine Fulton, "Acts of God: The Confessionalization of Disaster in Reformation Europe," in *Historical Disasters in Context: Science, Religion, and Politics*, ed. Andrea Janku, Gerrit J. Schenk, and Franz Mauelshagen (New York: Routledge, 2012), 54, 57.

annually. The floods' ability to exert pressure on cultural dialogues came from their continuity, not from the magnitude of any single flood. Individual floods were only important as conspicuous expressions of a larger process, an unrelenting source of disruption and a constant pressure to adapt.

Another study this dissertation would classify as representative of Cultural Histories of Disaster is *Sea of Storms* by Stuart Schwartz. *Sea of Storms* is a socio-cultural history that studies how peoples and states (particularly institutions) in the Caribbean were affected by and responded to hurricanes. Akin to Mauelshagen, Schwartz treats hurricanes as a process able to exert pressure over time. However, he also examines several prominent or highly impactful hurricanes, utilizing them either to illustrate ongoing trends or changes in responses to natural calamities.[38] Drawing inspiration from Braudel's rendition of the Mediterranean, Schwartz asserts the Caribbean Sea is a similarly coherent region, and inherent to that sea's environment—the setting of all the human actions that transpired in the Caribbean—were the hurricanes.[39] Still, his focus is on human responses, the political, economic, and social developments transpiring independently of or in conjunction with the storms, rather than on the physical phenomenon of the hurricanes.[40] *Sea of Storms* is therefore a cultural history of disaster, a study of how customs, peoples, and states discussed, imagined, and adjusted to a feature of an environment over time.[41]

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[38] Schwartz, *Sea of Storms,* 62, 73-77, 106, 111, 121, 140-143, 261, 296-297.
[39] *Ibid,* ix-x. Schwartz also wrote, "In a sense, commerce, plantations, slavery, and imperial rivalries provide the great themes by which the region's history are best told, but underlying all of them was the environmental and ecological context" that included hurricanes. *Ibid,* 36.
[40] *Ibid,* xvii.
[41] While the majority of the works discussed to this point focus on Europe, Latin America, or global affairs, there has also been some consideration of natural hazards as objects of cultural interpretation in the Philippines and the Indian Ocean. See Greg Bankoff and Joseph Christensen, "Bordering on Danger: An Introduction," in *Natural Hazards and Peoples in the Indian Ocean World*, ed. Greg Bankoff and Joseph Christensen (New York City: Palgrave Macmillian, 2016), 2, 6, 20-21 and Alicia Schrikker, "Disaster Management and Colonialism in the Indonesian Archipelago, 1840-1920," in *Natural Hazards and Peoples in*

Cultural Histories of Disasters often emphasize the prolonged impact of hazards on institutions and peoples rather than their physical and economic repercussions. Such is the critique presented in "History and the Social Sciences: Shock Therapy with Medieval Economic History as the Patient" by Daniel Curtis, Bas van Bavel, and Tim Soens (2016), who insist that Economic History can better study the physical consequences of historic natural hazards. The article, which functions as a diagnostic on the failure of history to sufficiently address disaster studies and a literature review, asserts medieval history can serve as a laboratory for testing theories on the impact of natural hazards.[42] To illustrate their point, the authors insist that, although quantified data for the medieval period is scarce, what does exist can demonstrate how historic natural hazards, famines, and plagues enhanced or disrupted the stratification of medieval society.[43]

The Economic History of hazards, as represented by Curtis et al, thereby compensates for the blind spots in Cultural Studies of Disaster, allowing for the physical, financial, and even structural impacts of natural hazards to be quantified. A similar approach was utilized by Bruce Campbell in *The Great Transition,* which studied medieval climatic history and the Medieval Warming Anomaly, using English harvest data to assess how a climatic shift and the plague affected Western European economies and trade.[44] Studies of famine by Cormac Ó Gráda and Philip Slavin similarly employ agricultural data to study the economic (and subsequently demographic) impact of climate and disaster. All these Economic Histories of Disaster focus on the tangible, physical and financial consequences of

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*the Indian Ocean World*, ed. Greg Bankoff and Joseph Christensen (New York City: Palgrave Macmillian, 2016), 226, 230-231, 246.

[42] Daniel R. Curtis, Bas van Bavel, and Tim Soens. "History and the Social Sciences: Shock Therapy with Medieval Economic History as the Patient," *Social Science History*, vol. 40 (Winter 2016): 756-758.

[43] *Ibid,* 762-767.

[44] Bruce Campbell, *The Great Transition,* xvii.

historic natural hazards.[45] In the model presented by these studies, hazards (and climate) interrupt commerce, and this interruption has downstream effects on trade and exchange.

The last approach to be discussed is a combinatorial approach, a methodology that draws upon some mixture of Disaster Studies, Cultural, and Economic Histories to study the impact of historic natural hazards.[46] Such an approach is common, even amongst the studies cited as emblematic of a particular methodology. Franz Mauelshagen's article on flooding is a primarily cultural history that draws upon accounts of physical damage. Pfister, another prominent figure, utilizes an approach that mixes Disaster Studies with Economic Disaster History. Nor did Schwartz ignore the economic consequences of storms in his history of shifting narratives around and responses to storms.[47] Each of these studies, while emblematic of one methodology, does not limit itself to exploring the impact of historic natural hazards from a single angle.

It is the assertion of this dissertation, then, that natural hazards in Luzon had physical, cultural, and economic consequences for the colony and a combinatorial approach is therefore necessary. Chapters 2 and 3 determine the physical and economic impact of a series of natural hazards on the island of Luzon. Chapter 2 accomplishes this task through recorded damage to buildings, which includes several references to powerful earthquakes

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[45] See Cormac Ó Gráda, *Famine: A Short History* (Princeton: Princeton University, 2009), 6-7, 31, 40, 48, 52, 56-59, 70-73, 82, 90, 123-125. Also, see Ó Gráda's essay collection: *Eating People is Wrong and Other Essays on Famine, its Past, and its Future* (Princeton: Princeton University, 2015), 4-10. Slavin, "Climate and famines: a historical reassessment." 433-435.

[46] Since most scholars tend to draw on some combination of the methodologies described here, it is difficult to produce a satisfactory definition of a combinatorial approach. However, a combinatorial approach is certainly not consilience. Consilience, as articulated by Edward O. Wilson, is the merger of the multiple academic disciplines around common, unifying principles. This dissertation's combinatorial approach, rather than searching for uniting principles, approaches the same problem—natural hazards' impacts—from varying scholarly perspectives. For a full discussion of consilience, see Edward O. Wilson, *Consilience: The Unity of Knowledge* (New York City: Vintage Books, 1998), 9-11.

[47] Mauelshagen, "Disaster and Political Culture in Germany Since 1500," 41, 44-45; Christian Pfister, "Climatic Extremes, Recurrent Crises and Witch Hunts," 39-40; Schwartz, *Sea of Storms,* 60-63.

and storms. Chapter 3 explores how institutions responded to natural hazards. Lastly, chapters 4 through 6 study how Luzon's various inhabitants, differentiated by race and class, experienced and interpreted natural hazards. The chapters, by approaching hazards as both events and processes with physical, economic, and cultural impacts, work to demonstrate the total impact of natural hazards on the political, economic, social, and cultural developments underway in colonial Luzon between 1645 and 1754.

# Chapter 2: The Physical and Immediate Economic Impact of Natural Hazards

The physical impact of natural hazards is, at first glance, easy to define.[1] For the purposes of this dissertation, it is the alteration of the environment, natural or artificial (i.e. human-constructed), by an extreme natural event, the magnitude of which determines the time needed for the environment to return to a pre-disruption state or 'recover.' This definition necessitates each natural hazard be considered individually rather than as part of a process for two reasons. First, the magnitude or 'strength' of each hazard event differs, which affects its capacity to transform an environment. Second, the abrupt transformations wrought by natural hazards lose their significance over time, becoming difficult to discern from less dramatic, but constant physical processes such as erosion, sedimentation, and decay. The physical impact of natural hazards on the environment, then, is a function of time, with physical impact attenuating after the disaster occurs or, phrased differently, as the environment recovers.[2]

Human action, however, complicates assessments of physical impact. Because vulnerability, resilience, and adaptation are all culturally dependent, human activity

[1] In fact, how physical impact is defined and its significance varies greatly across disciplines that study risk, climate, and natural hazards. For a literature review of the definitions of urban vulnerability as it relates to contemporary climate change, see Patricia Romero Lankao and Hua Qin, "Conceptualizing urban vulnerability to global climate and environmental change," *Current Opinion in Environmental Sustainability,* vol. 3, 2011: 142, 144-145, DOI: 10.1016/j.cosust.2010.12.016. Please note, this dissertation does not employ the definitions or terminology utilized in the above literature review.

[2] Christof Mauch, "Introduction," in *Natural Disasters, Cultural Responses: Case Studies toward a Global Environmental History,* ed. Christof Mauch and Christian Pfister (Plymouth, UK: Lexington Books, 2009), 2-4, 9-10; Emmanuel Le Roy Ladurie, *Times of Feast, Times of Famine: A History of Climate Since the Year 1000,* trans. Barbara Bray (London: George Allen & Unwin, 1971), 76; and Sam White, Christian Pfister, and Franz Mauelshagen, "General Introduction," in *The Palgrave Handbook of Climate History,* ed. Sam White, Christian Pfister, and Franz Mauelshagen (London: Palgrave-MacMillan, 2018), 2, 7, 10-11.

determines the initial magnitude of a hazard's physical impact. Furthermore, recovery is complicated by human input. Natural processes such as erosion and decay are gradual but constant forces, and when these processes act upon an environment without human input, recovery transpires over a set period of time. When a natural hazard impacts a human environment, however, the linear relation between recovery and time becomes onerously complex. Human actions, in contrast to consistent and slow natural processes, are directed and transpire relatively rapidly, but can unfold irregularly, even chaotically, for any number of reasons—the presumed cause of a natural hazard, the people affected, available resources, access to the impacted site, the strength of local institutions, and local politics, for example.

It also should be said that, in an artificial environment, the very term "recovery" is problematic. Its definition depends on arbitrary metrics: is it when economic output for a region, administrative district, or neighborhood recuperates; when the population returns to pre-disruption levels; or is it when every building or affected plot of land has been rebuilt, refurbished, or replaced? And, while recovery takes place, independent human activity continues, potentially prolonging, augmenting, or reducing the physical impact of a natural hazard. To resolve the chaos human agency introduces, a broad definition of 'recovery' is needed, if only to highlight when human actions stop being directly influenced by a natural disaster. In an environment devoid of human input, recovery is the return of the environment—both the physical landscape and the encompassed ecosystem—to a pre-disruption state. Therefore, in a developed environment, rural or urban, recovery should be the return of production and structures to their previous condition or to a new stable state.

Thus, when considering human structures, the physical impact and the short-term financial impact overlap. [3]

Unfortunately, the surviving documentation from Early Modern Luzon prevents easy assessment of physical or financial impact. Prior to the eighteenth century, the documents that discuss natural hazards extensively often described the events as moral censure. While fascinating in their own right, these documents do not summarize the cost of disasters, nor quantify their impact on local labor or trade. Furthermore, the British conquest and sack of Manila in 1762 destroyed most local records, likely including documents detailing the city's responses to earthquakes and storms. As a result, any information on natural hazards in Luzon prior to 1764 is highly fragmentary.

To circumvent this obstacle, this chapter utilizes colonial buildings and structures to identify and describe the physical impact of several historic natural hazards. The reconstruction of buildings and the associated costs of repair were rigorously documented by colonial administrators in Luzon and were then shared with the Spanish Crown in Madrid. That administrative correspondence, now preserved in the *Archivo General de Indias* (AGI) in Seville, can detail the physical impact of natural hazards in Luzon between 1645 and 1754. Furthermore, because these letters offer information on the costs of rebuilding Manila (and the Crown's struggle to fund reconstruction), an intensive history of buildings offers insight on the immediate economic impact of natural hazards.

[3] If recovery were defined strictly as returning to a pre-disruption state, some disasters would have physical impacts spanning centuries that overrode any sense of human agency. Truly catastrophic disasters, such as large volcanic eruptions, can permanently alter an ecosystem, changing the parameters on which a society operates. Humans, however, are adaptable and will establish new structures, institutions, and a new relationship with the environment (even if that requires migrating and abandoning their previous homes). See Anthony Oliver-Smith, "Anthropology and the Political Economy of Disasters," in *The Political Economy of Hazards and Disasters,* ed. Eric C. Jones and Arthur D. Murphy (Lanham, Maryland: Alta Mira, 2009), 24.

## The Disasters that Afflicted the Colonial Philippines between 1645 and 1754

The first step in describing physical impact is to identify what natural hazards transpired between 1645 and 1754. The Early Modern Philippines experienced severe earthquakes, cyclonic storms, volcanic eruptions, fires, and floods with astounding frequency. Yet, extraordinarily to modern observers, these disasters were rarely the focus of contemporaneous documents and letters (excepting the most extreme disasters). Instead, these events were afforded brief mention in administrative correspondence detailing the damage they caused to human structures. Any information on historic natural hazards in Luzon therefore must be gathered piecemeal, often from several documents.[4] Such was the approach employed by Father Miguel Selga, S.J. (1879-1956), the former head of the Ateneo de Manila's observatory, whose work on typhoons remains authoritative close to a century after publication. This dissertation imitates Selga's approach, employing administrative missives to determine when and where destructive hazards of every variety struck Luzon.

For clarity and ease of reference, the most prominent hazards mentioned in this chapter are presented in a single table below (Table 2.1). The table draws upon Miguel Selga's *Catalogue of Typhoons, 1348-1934,* Father Miguel Saderra Maso's *Seismology in the Philippines,* the *Compendio Historico de la Apostolica Provincia de San Gregorio de Philipinas de Religiosos Menores Descalzos de N.P. San Francisco* by Domingo Martinéz, O.F.M. (1756), the work of Ricardo García-Herrera, a present day historic climate scientist, the tables of impactful typhoons provided by James Francis Warren in "Weather, History, and Empire," and documents found in the following archives: the *AGI*, the *Archivo Franciscano Ibero-*

[4] As Greg Bankoff demonstrated in his article, "Storms of History," the fragmentary nature of the historical record means water-based hazards (typhoons and floods) in Luzon are under-reported before the nineteenth century. Greg Bankoff, "Storms of History: Water, hazard, and society in the Philippines, 1565-1930," in *A World of Water: Rain, Rivers and Seas in Southeast Asia,* ed. Peter Boomgaard (Leiden: Brill, 2007), 160, 166. Presumably, this is the case for all manner of natural hazards in Luzon.

*Oriental* (AFIO) in Madrid, the *New York Public Library's Obadiah Rich Collection*, and the *Archivo General de la Nación* (AGN) in Mexico City. Several less prominent storms, tremors, and eruptions are excluded because there is minimal evidence of their physical impact. A second table detailing every natural hazard relevant to this dissertation is presented in the Appendix.

| Date of Hazard | Type of Hazard | Location of Hazard | Description of Destruction Caused | Reference[5] |
|---|---|---|---|---|
| Nov-30-1645 | Earthquake | Central Luzon | Total Destruction of *Intramuros* | *AFIO* Legajo 523, Documento 39 |
| 1646 | Typhoon | Cagayan | Sank the galleon *San Luis,* which was bound for Manila from Acapulco | Warren |
| Oct-5-1649 | Typhoon | San Bernardino Strait | Sank the galleon Nuestra Señora de la Encarnación as it sailed for Acapulco | Selga |
| April 1650 | Storm | ? | Galleon Nuestra Señora de Guia nearly wrecked as it sailed from Acapulco and most goods were lost | Warren |
| 1651 | Storm | Manila | Galleon *San Diego* struck by a storm during voyage to Acapulco, returns to port | Warren |
| May-29-1654 | Typhoon | Central Luzon | Typhoon destroyed the *San Diego* as it sailed for Acapulco*,* according to the testimony of survivor Juan Montiel, S.J. | Selga, Warren |
| 19-Oct-1655 | Storm | Borongan | A galleon, *San Francisco Xavier,* lost at sea while sailing from Acapulco | Warren |
| 1666 | Storm | Manila | Two ships return to Manila, do not make the voyage to Acapulco | Warren |

[5] The term Selga refers to Miguel Selga, S.J., *Catalogue of Typhoons, 1348-1934* (Manila: Manila Weather Bureau, 1935).
The term Maso refers to Miguel Saderra Maso, *La seismología en Filipinas* (Manila: Ramirez, 1895).
The term García-Herrera references Ricardo García Herrera, Pedro Ribera, Emiliano Hernández, and Luis Gimeno, "Northwest Pacific typhoons documented by the Philippine Jesuits, 1566-1900," *Journal of Geophysical Research,* Vol. 112, Issue D6 (27 March, 2007): 3-4.
The term Warren references James Francis Warren, "Weather, History, and Empire: The Typhoon Factor and the Manila Galleon Trade, 1565-1815," in *Anthony Reid and the Study of the Southeast Asian Past,* ed. Geoff Wade and Li Tana (Singapore: Institute of Southeast Asian Studies, 2015).

| | | | | |
|---|---|---|---|---|
| 1669 | Storm | Cavite and Lampon | *Nuestra Señora del Buen Socorro* and the *San Diego* both turned back by storms upon departure from Luzon | Warren |
| 1672 | Typhoon | Manila | Vessel *San Telmo* turns back from voyage, returns to Manila | Warren |
| 1681 | Typhoon | Manila | Galleon *Santa Rosa* forced to turn back to port after departing for Acapulco | Warren |
| 1682 | Typhoon | Manila | *Santa Rosa* again forced to turn back to Manila after encountering fierce and damaging storms | Warren |
| 1687 | Typhoon | Manila | *Santo Nino* returns to port in Bagatoa for typhoon season before returning to Manila with its cargo half-rotten | Warren |
| 1688 (sometimes dated as 1687) | Earthquake | Cavite | Greatly damaged the Castillo de San Felipe | *AGI Filipinas 122, N.17; AGI Filipinas* 14, R.2, N.16 |
| 1690 | ? | Marianas | *Nuestra Señora del Pilar* sinks near Marianas while bound for Manila from Acapulco, but crew and some cargo saved | Warren |
| 1692 | Typhoon | San Bernadino Strait | *Santo Cristo de Burgos* put back to Sorsogon (in Nueva Caceres) after experiencing storms as it sailed for Acapulco | Warren |
| 1693 | Unknown/Storm | ? | Galleon S*anto Cristo de Burgos* lost on route to Acapulco | *AGI Filipinas* 122, N.13 |
| July-3rd-1694 | Storm | Lubang/Lubanan | The galleon *San Joseph* [sic] is shipwrecked during its voyage to Acapulco | *AGI Filipinas*, 122, N.13; García-Herrera; Selga |
| Oct-25-1700 | Storm/Typhoon | Northwest Luzon | The galleon *San Francisco Xavier* nearly sank, though the *situado* was saved | *AGI Filipinas* 124, N.21 |
| 1705 | Storm/Typhoon | ? | Loss of the galleon *San Francisco Xavier* as it sailed to Acapulco | *AGI Filipinas* 129, N.39 |
| 23-July-1726 | Typhoon | Ticao Island | Galleon *Santo Cristo de Burgos* sinks in typhoon as it sails for Acapulco | Warren |
| Nov-28-1728 | Earthquake | Manila | Intense earthquake recorded in Manila, which did extensive damage to several buildings | Maso |

| | | | | |
|---|---|---|---|---|
| 9-November-1730 | Typhoon | Mindoro | Galleon *Sacra Familia* sank during voyage from Acapulco to Manila | Warren |
| Jun-18-1733 | Fire | Manila | Fire destroys Royal Storehouses and their contents | *AGI Filipinas* 334, L.15, 348R-350R; *AGI Filipinas*, 145, N.8 |
| 29-June-1735 | ? | San Bernadino Strait | Galleon *San Cristobal* lost while bound for Manila from Acapulco | Warren |
| 1749 | Volcanic Eruption | Taal | A new *polo* or mount forms within Mt. Taal after intense activity; the earthquakes were felt in Manila and its surrounding towns | *AGN, Filipinas, legajo* 884, Expolio 1 |
| 1750 | Poor weather | ? | Galleon *Nuestra Señora del Pilar* experiences rough conditions upon departure from Manila; fate of vessel unknown | Warren |
| 1754 | Volcanic Eruption | Taal | Mt. Taal undergoes its largest recorded eruption, destroying several *pueblos* at the mountain's base over six months of intense volcanic activity; the earthquakes and ash affected Manila | *AGN, Filipinas, legajo* 884, Expolio 1 |

*Table 2.1: A Short List of Impactful Fires, Storms, Earthquakes, and Eruptions in and around Luzon between 1645 and 1754.*

## Choosing a Proxy to Assess the Physical and Economic Impact of Hazards

The most celebrated aspect of Ladurie's *Times of Feast, Times of Famine* is the identification of vineyards as a suitable proxy for reconstructing historic climates. Each year, the average temperature and rainfall during the growing season determined whether wines were dry, fruity, earthy, or sweet. Because the taste and size of the harvest was recorded each year, vineyards' records reflected sensitivity to the climate while permitting differentiation between the effects of climate, natural hazards, and human practices.[6] Thus,

[6] Ladurie, *Times of Feast, Times of Famine,* 50-56.

through creativity, Ladurie identified a proxy for climate from a tangentially related series of sources.

Finding such a proxy in colonial Luzon is challenging. Records for crops, demographics, construction, and even taxation are fragmentary, especially before the eighteenth century.[7] As previously alluded to, the lack of documentation for most of the island is the product of Luzon's tumultuous history.[8] Therefore the majority of surviving information on the Philippine colony's early history is located in the *AGI*, in the administrative letters sent back to the Crown. Amongst those letters, the most consistent sources of information on natural hazards are the *traslados* (copies of testimonies) concerning colonial buildings' maintenance and repair. Spanish buildings proved vulnerable to Luzon's seismic hazards, while critical assets of the empire like the famed Manila Galleons were susceptible to storms and other meteorological hazards. Therefore, the *traslados* detailing these structures' history provide a quantified record of natural hazards and their cost to the colony, providing the proxy necessary to describe these events' physical and financial impact on Luzon.

Colonial structures are a feasible proxy for natural hazards because they were consistently vulnerable to hazards and of great importance to administrators in Manila and Madrid. Colonial buildings were imbued with symbolic, military, and economic value. Offices for administrators projected Spanish wealth and influence; fortresses signified the Spanish claim to Luzon while defending it; and churches and cathedrals encapsulated the Catholic

[7] Bankoff, "Storms of History," 160.

[8] Most early records kept in Manila were destroyed between 1762 and 1764, during the British occupation of that city. Subsequent invasions by the Americans and the Japanese during the twentieth century also destroyed considerable amounts of archival material as well. Likewise, Muslim slave raiders from the Sulu Sultanate burned local parish records throughout Luzon during their raids in the eighteenth century. And any records that escaped these invasions were still subject to the local climate and decay. As any archivist or researcher can attest, the rice paper used during the early years of the colony is not hardy.

identity of the Spanish Empire. Maintaining these buildings produced bundles of correspondence between Luzon and the royal court at Madrid that included brief letters, *traslados*, *consultas* (consults), and *cedulas* (decrees). These documents represented dialogues and debates between the colonial center and periphery on how to spend money to maintain the center's influence at the far-flung edge of a seaborne empire.

This correspondence was not explicitly concerned with natural hazards. However, just as wines' flavors were subject to climatic shifts, so were buildings susceptible to natural hazards. Furthermore, one of the strengths of administrative correspondence as a proxy is that individual letters differentiate between diverse destructive forces. Letters distinguish between damage caused by natural hazards and other processes, such as decay or poor construction. Thus, *traslados* allow damage from natural hazards to be differentiated from damage caused by deterioration or human activity.

Equally valuable for detailing physical impact are the specificity and consistency displayed in administrative correspondence. *Traslados* provide extensive details on reconstruction, helping to answer how long a natural hazard's physical impact persisted. And, by reporting the cost of repairs, these documents quantify the financial impact of disasters. Furthermore, the format of these documents did not change dramatically between 1645 and 1754. This is not to say that rhetorical strategies were unchanging or that information about buildings and hazards was presented uniformly (see Chapter 3). Rather, the configuration of correspondence regarding buildings—the organization and intent of *traslados* and their accompanying summaries—was consistent between 1645 and 1754.

There are limitations, though, to data gathered from *traslados*. The most obvious of these shortcomings is especially frustrating: data is restricted to where Spanish observers

were present.[9] Most Spaniards in Luzon resided in Manila; only members of the clergy and local administrators, the *alcaldes-mayores*, regularly ventured beyond the city.[10] As a result, discussions of disaster in *pueblos* outside Manila are sporadic, and quantifying physical impact beyond the city is especially difficult between 1645 and 1754.[11]

Spanish documents do not provide a complete account of Manila either. Within colonial records, "Manila" refers exclusively to *Intramuros* (literally "within the walls"), a walled city with fewer than two-thousand people bound by the Pasig River on its North and East and the Bay of Manila to its West. *Intramuros* was designed for Spanish tastes, built with stone and laid out in a grid. Everything outside of the walls was the second city, *Extramuros* ("beyond the walls"). With the exception of Spanish-administered churches and hospitals, *Extramuros* was a city of Asian peoples that grew as needed, with unplanned streets winding between edifices constructed of nipa palm and wood (see Figure 2.1 below).[12] Since administrative correspondence was exclusively concerned with Spanish infrastructure, information on non-Spanish *Extramuros* is comparatively scarce.[13]

[9] Spanish observers were present in central and southern Luzon, along the northern Cagayan River Valley, and along the Northwest coast. See Bankoff, "Storms of History," 160.
[10] *Alcalde-mayor* translates to regional mayor in this context. John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses* (Madison: University of Wisconsin, 1967), 31-32 and 40.
[11] Detailed documentation of the sale and possession of provinces' *encomiendas* has survived to the present day. However, these records only detail the physical condition of the land during a sale or inspection. Any details concerning hazards are therefore captured incidentally. To utilize the sources, scholars would need to focus on known natural hazards in specific locations.
[12] Greg Bankoff, "A Tale of Two Cities: The Pyro-Seismic Morphology of Nineteenth-Century Manila," in *Flammable Cities: Urban Conflagration and the Making of the Modern World,* ed. Greg Bankoff (Madison, Wisconsin: University of Wisconsin, 2012), 170 and 172-173.
[13] For a more detailed account of *Extramuros,* see Chapter 6.

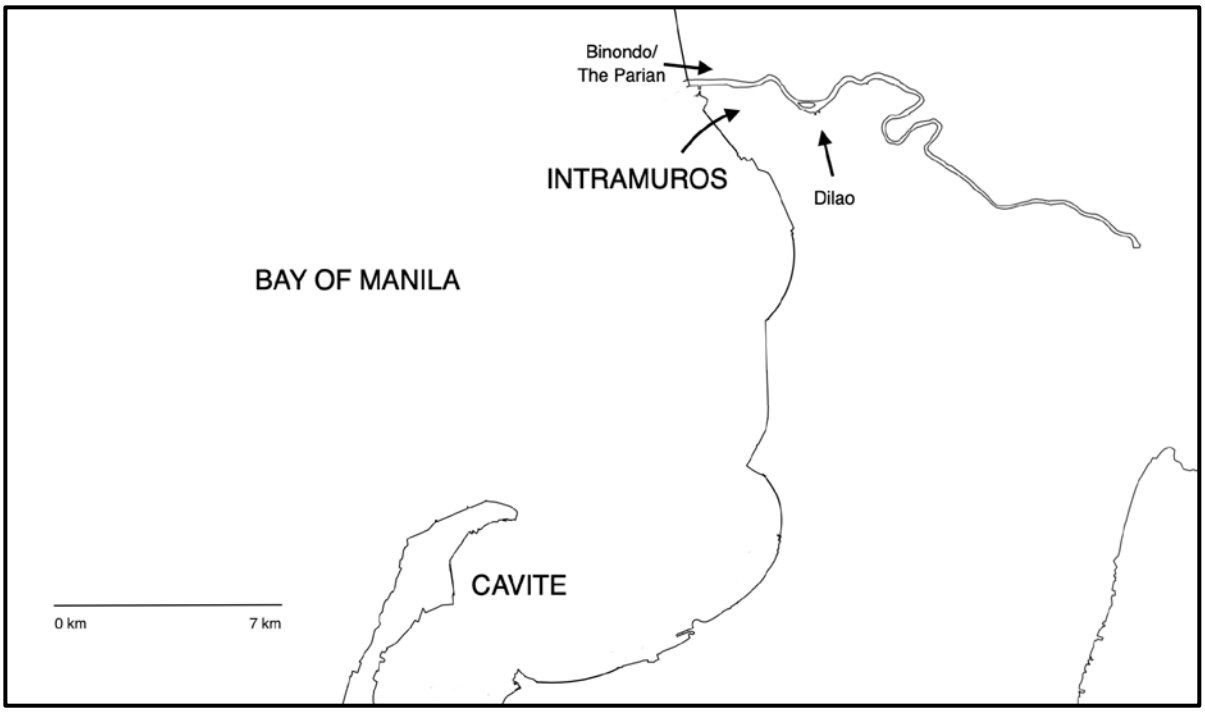


*Figure 2.1: Map of Manila region showing Cavite, Intramuros, Dilao, and the Parian.*[14]

A final noteworthy limitation of administrative correspondence is that it offers few details on the labor of reconstruction, which was almost exclusively performed by colonized peoples. As part of their tribute to the Crown, indigenous workers were forced to reconstruct churches and fortresses in Manila and the far-flung provinces; alternatively, they could be forced to gather resources for Spanish shipyards to construct the Manila Galleons.[15] Similarly, Chinese immigrants provided essential specialized labor as carpenters, smiths, and sculptors.[16] However, *traslados* offer little information on how many individuals were made to work on a project, whether they were fulfilling tribute or being paid, and for

[14] This figure was constructed using the open source software program *QGIS* data available through the free data package titled "OpenStreetMap."
[15] Conquered indigenous peoples in the Philippine colonies were subject to several types of tribute-tax. The most significant for the shipyards was the *polo*, which required they labor on the empire's behalf for a set period of time each year (forty days). Laborers were brought in from colonized regions of Luzon and the Visayas to work in the Cavite shipyards, often under abusive conditions. Resistance to the *polo* and work in the shipyards could prompt large-scale revolts, as happened in the Visayas (1649) and Pampanga (1660). See Nicholas P. Cushner, *Spain in the Philippines* (Quezon City: Ateneo de Manila, 1971), 117-119, 121.
[16] See *Ibid,* 117 and Giraldez, *The Age of Trade: The Manila Galleons and the Dawn of the Global Economy* (New York: Rowman and Littlefield, 2015), 79-80.

how long they worked. Often, colonized peoples are not mentioned at all. As a result, the physical impact of natural hazards on their lives cannot be recovered from the available documents.

These limitations, while considerable, do not detract from the information administrative correspondence provides on structures that were functionally and symbolically essential to the colony. Buildings in *Intramuros,* such as the Castillo de Santiago, the Cathedral of Manila, and the Royal Storehouses (until the eighteenth century a part of the Castillo de Santiago) feature prominently in official records. Similarly, buildings in Cavite like the Castillo de San Felipe and the port (which served Manila) are well-documented. All of these buildings, constructed primarily of stone, proved especially vulnerable to earthquakes, and the physical impact of natural hazards can therefore be recovered from documents detailing their subsequent repairs.[17]

*Traslados* and their associated short letters alone, however, do not provide a complete account of the Manila Galleons, arguably the most important colonial structures. The galleons that made the annual and harrowing journey across the Pacific Ocean have been the subject of much scholarly interest.[18] Such work has demonstrated that the loss of

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[17] *Ibid,* 173 and Robert R. Reed, *Colonial Manila: The Context of Hispanic Urbanism and the Process of Morphogenesis* (Berkeley: University of California, 1978), 38, 44 (role of fires in early history of Manila), and 47 (city fortified and built with stone).

[18] The classic history of the galleons remains William Lytle Schurz's *The Manila Galleon* (1939). Equally significant was Pierre Chaunu's two volume *Les Philippines et le Pacifique des Ibériques* (1960-1966), a detailed and quantified economic history of the galleons. More recently, Dennis Flynn and Arturo Giraldez revisited and revised Chaunu's conclusions in "Born with a Silver Spoon." See Dennis O. Flynn and Arturo Giraldez, "Born with a 'Silver Spoon': The Origin of World Trade in 1571," in *China and the Birth of Globalization in the 16th Century,* ed. Dennis O. Flynn and Arturo Giraldez (Burlington, Vermont: Ashgate, 2010), 205-206, 220-221." Arturo Giraldez has, in addition to his work with Flynn, composed a broader socio-economic and cultural history of the galleons. See Arturo Giraldez, *The Age of Trade*, 9 (role of typhoons in foundation of Southeast Asian settlements), 34-37 (character of galleon trade), 91-93 (catastrophes that affected the galleons in the 1640s), 117, 153-155 (corruption in the galleon trade), 169-171 (China's resurgence and the return of the silver trade), 173 (the silver trade's collapse), 182-184 (changes to Philippine economy diminish galleon trade's influence), 190 (end of the galleon trade).

a galleon was not uncommon as they were a frequent target of Spain's adversaries.[19] James Warren has also shown that the powerful storms of the Pacific, including the typhoons that regularly pass between the Philippines and Taiwan, posed an equal—if not greater—threat to the galleons.[20] Therefore, to better account for the importance of galleons, their role in colonial finances, and their tortured relationship with natural hazards, this dissertation supplements manuscripts obtained from the *AGI* with the high-quality research performed by other scholars. Thus, the physical impact of natural hazard on the galleons, like other colonial structures, can be assessed.

## The Buildings of Colonial Luzon: The Physical Impact of Natural Hazards

The following subsection of this dissertation chronicles the history of prominent structures in the colony, including the Cathedral of Manila, the Castillo de Santiago, the Castillo de San Felipe, the Port of Cavite, the Royal Storehouses, and the Manila Galleons. Natural hazards played varied roles in the history of each building, at times dramatically interceding and at others exercising minimal influence. Furthermore, each building had differing value to Luzon's most influential merchants, administrators, and clerics, which affected how they were repaired. Common to all, though, were delays in reconstruction; issues communicating with distant Madrid; and persistent attempts by all involved to adapt Spanish buildings and expectations to a hostile environment.

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[19] The galleons were among the richest treasure ships in the world. The vessels were therefore a tempting prize for Spain's European rivals and pirates. In 1686, the galleon Santa Rosa experienced a perilous voyage from Acapulco, escaping both a French ambush off the coast of New Spain and a pirate attack near the Marianas. See *AGI, Filipinas* legajo 12, Rollo 1, Número 50.

[20] James Francis Warren, "Weather, History, and Empire," 201-202. For more on particularly lethal typhoons that affected the galleons and Luzon, see Pedro Ribera, Ricardo García-Herrera, and Luis Gimeno, "Historical Deadly Typhoons in the Philippines," *Weather,* Vol. 63, No. 7 (July, 2008): 2-3.

**Economic Context for Physical Impact**

The physical impact of natural hazards on structures, especially the time needed to repair the damage inflicted, was dependent on the economic condition of the Philippine colony. A brief discussion of the colony's financial condition, and especially the funds available to colonial administrators between 1645 and 1754, is therefore necessary. Annual reports from the *Contaduría* (treasury) in Manila indicate the period from 1645 to 1690 was a time of diminished income. A second period, from 1690 to 1720, saw the colony's income restored to record heights, comparable to the early seventeenth century, as the silver trade with China reignited. Finally, a third period from 1720 until 1754 saw the colony's income steadily decrease and ultimately return to a nadir comparable to the period from 1645 to 1690.

Figure 2.2 provides the annual income of the colony between 1639 and 1700:

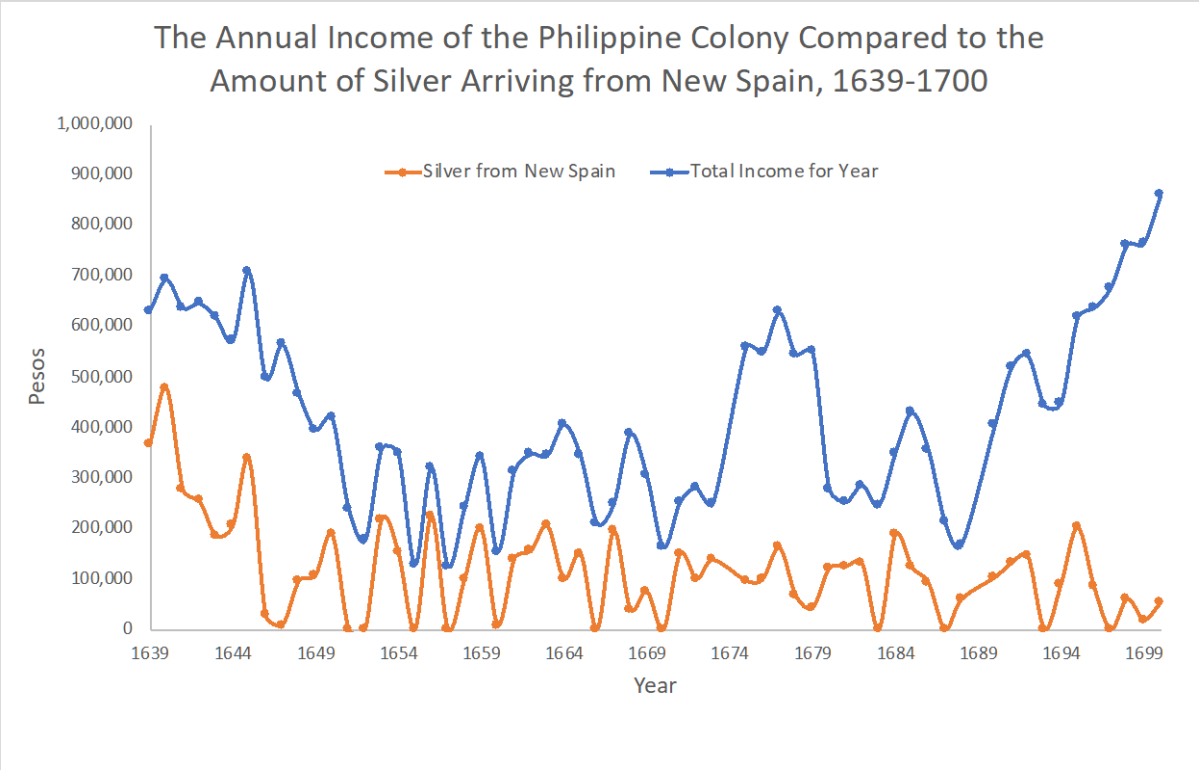


*Figure 2.2: The Annual Income of the Philippine Colony Compared to the Amount of Silver Arriving from New Spain, 1639-1700. This figure presents the colony's income and the size of the Mexican*

*Situado for the years 1639-1673, 1675-1688, and 1689-1700. Sourced from AGI, Contaduría* legajos 1219-1253.

The data is erratic year-to-year but demonstrates trends and patterns on a decadal scale. The years between 1639 and 1645 show consistently high income (approximately 600,000 pesos). After 1645, the colony experienced a sudden decline. Between 1645 and 1651, the colony's income sank from nearly 700,000 pesos to less than 200,000, a contraction of more than 66%. This decline came in the wake of the most destructive earthquake of the century (see Table 2.1), a Dutch invasion, the collapse of Ming China, and new restrictions on the silver trade between Peru, Acapulco, and Manila.[21]

For the following twenty years (1651-1671), annual income was inconsistent but low, oscillating between approximately 350,000 and 175,000 pesos. According to "Financing the Empire," an article by Luis Alonso that is one of the most recent and complete studies of the internal finances of the Philippines in this period, these strong oscillations were prompted by the size of the *situado,* the annual stipend from Nueva España paid in silver (see Figure 2.2). The *situado,* described as "Silver from New Spain" within Philippine *Contaduría* papers, was highly variable and entirely dependent upon the success of the annual galleon voyage. The years when the *situado* was depleted or non-existent are therefore represented in Figure 2.2 by local minima, the years on the graph when "Silver from New Spain" approaches zero.[22]

Aside from a brief uptick between 1672 and 1679, this period of diminished income persisted until 1688. Between 1689 and 1700, the colony saw its income consistently

[21] See O.H.K. Spate, *The Pacific Since Magellan, Volume 1: The Spanish Lake* (Canberra: Australian National University, 1979), 228 and Horacio de la Costa, *The Jesuits in the Philippines 1581-1768* (Cambridge: Harvard University, 1967), 399, 406-407, and 414.
[22] Luis Alonso, "Financing the Empire: The Nature of the Tax System in the Philippines, 1565-1804," *Philippine Studies,* Vol. 51, No. 1 (2003): 70-73.

increase until it returned to, and then surpassed, the amounts it enjoyed in the early 1640s. In 1700, the income of the colony exceeded 800,000 pesos. This return to high income coincided with the renewal of the silver trade with China, which had experienced rapid population growth after the establishment of the Qing dynasty in South China and therefore required silver to fuel its expansion.[23] The rise in colonial income is also attributable to reforms instituted by Governor Fausto Cruzat y Gongorá, which affected the collection of tribute as well as taxes on foreign goods entering Manila.[24]

For the eighteenth century, this dissertation relies on research performed by Luis Alonso. In "Financing the Empire," Alonso charts the income of the colony in five-year increments from 1580 to 1800. His own work confirms that the colony's income between 1700 and 1720 was consistently above 600,000 pesos, even surpassing 1,000,000 pesos in exceptional years. Between 1720 and 1730, however, the income of the colony entered a precipitous decline, which Alonso attributes in part to a decreased *situado* from Mexico. The colonial income continued to decline in the 1740s before becoming especially erratic in the 1750s, mirroring the pattern displayed in the mid-seventeenth century.[25]

This economic context is essential for understanding both the impact of various natural hazards and the time required to recover from those disruptions. The damage from earthquakes and typhoons in the mid-seventeenth century was exacerbated and reconstruction delayed by the impoverished state of the colonial administration. Yet, as the discussion below will demonstrate, economic adversity forced inventive adaptations to

[23] Dennis Flynn and Arturo Giraldez, "Cycles of Silver: Global Economic Unity Through the Mid-Eighteenth Century," *Journal of World History,* Vol. 13, No. 2 (Fall, 2002): 392-393, 406-407, and 411.
[24] Luis Alonso, "Financing the Empire," 75.
[25] Luis Alonso, "Financing the Empire," 70.

finance and complete essential repairs, which happened whether annual income was high or low, consistent or erratic.

**The Galleons**

The most essential structure in Luzon floated. A "Manila Galleon" or *Nao* should be considered equivalent—even superior—in significance to any building in *Intramuros*. They were not only costly, but were also symbolic of the colony, which could not survive without the annual commerce and links to the empire provided by the ships (including the *situado* from New Spain).[26] Whenever a natural or contrived hazard sank a galleon, it represented a near-unfathomable calamity for Manila. The galleons carried silver and luxury goods as previously mentioned, but also transported correspondence, the specie needed for the basic functioning of the government, Spanish-trained infantry and cannons, and all manner of private goods.[27] The loss of several galleons in a decade could therefore threaten the colony's existence.[28]

Protecting the galleons from the vicissitudes of humans and nature was therefore of paramount importance. The Spanish experience in the Caribbean had familiarized the empire with hurricanes, so while the Spaniards' earliest typhoons were undoubtedly a shock, the galleon trade quickly adapted. Regulations were put in place in the early seventeenth century dictating the ships depart Acapulco and Manila at set times, during

[26] Manila and its trade were organized around the arrival and the departure of the galleons, and the Spanish colony could not function without these ships. As a result, the loss of a galleon, either to a storm or an enemy, represented both an economic and symbolic loss for the colony. See Phelan, *The Hispanization of the Philippines,* 42.
[27] O.H.K. Spate, *The Pacific*, 157, 161, 220, and 222.
[28] Giraldez, *The Age of Trade,* 117.

lulls in the storm season.[29] Nonetheless, several vessels were lost to or severely damaged by typhoons between 1645 and 1754. A list of these is produced below in Table 2.2.

| Date of Hazard | Type of Hazard | Location of Hazard | Description of Destruction Caused |
|---|---|---|---|
| 1646 | Typhoon | Cagayan | Sank the galleon *San Luis,* which was bound for Manila from Acapulco |
| Oct-5-1649 | Typhoon | San Bernardino Strait | Sank the galleon Nuestra Señora de la Encarnación as it sailed for Acapulco |
| April 1650 | Storm | ? | Galleon Nuestra Señora de Guia nearly wrecked as it sailed from Acapulco and most goods were lost |
| 1651 | Storm | Manila | Galleon *San Diego* struck by a storm during voyage to Acapulco, returns to port |
| May-29-1654 | Typhoon | Central Luzon | Typhoon destroyed the *San Diego* as it sailed for Acapulco*,* according to the testimony of survivor Juan Montiel, S.J. |
| 19-Oct-1655 | Storm | Borongan | A galleon, *San Francisco Xavier,* lost at sea while sailing from Acapulco |
| 1666 | Storm | Manila | Two ships return to Manila, do not make the voyage to Acapulco |
| 1669 | Storm | Cavite and Lampon | *Nuestra Señora del Buen Socorro* and the *San Diego* both turned back by storms upon departure from Luzon |
| 1672 | Typhoon | Manila | Vessel *San Telmo* turns back from voyage, returns to Manila |
| 1681 | Typhoon | Manila | Galleon *Santa Rosa* forced to turn back to port after departing for Acapulco |
| 1682 | Typhoon | Manila | *Santa Rosa* again forced to turn back to Manila after encountering fierce and damaging storms |
| 1687 | Typhoon | Manila | *Santo Nino* returns to port in Bagatoa for typhoon season before returning to Manila with its cargo half-rotten |
| 1690 | ? (likely a Storm) | Marianas | *Nuestra Señora del Pilar* sinks near Marianas while bound for Manila from Acapulco, but crew and some cargo saved |
| 1692 | Typhoon | San Bernadino Strait | *Santo Cristo de Burgos* put back to Sorsogon (in Nueva Caceres) after experiencing storms as it sailed for Acapulco |
| 1693 | Unknown/Storm | ? | Galleon *Santo Cristo de Burgos* lost on route to Acapulco |

[29] These regulations were routinely ignored, usually to stock the ships with additional merchandise. Cushner, *Spain in the Philippines,* 128 and 135-139.

| | | | |
|---|---|---|---|
| July-3rd-1694 | Storm | Lubang/Lubanan | The galleon *San Joseph* [sic] is shipwrecked during its voyage to Acapulco |
| Oct-25-1700 | Storm/Typhoon | Northwest Luzon | The galleon *San Francisco Xavier* nearly sank, though the *situado* was saved |
| 1705 | Storm/Typhoon | ? | Loss of the galleon *San Francisco Xavier* as it sailed to Acapulco |
| 23-July-1726 | Typhoon | Ticao Island | Galleon *Santo Cristo de Burgos* sinks in typhoon as it sails for Acapulco |
| 9-November-1730 | Typhoon | Mindoro | Galleon *Sacra Familia* sank during voyage from Acapulco to Manila |
| 29-June-1735 | ? (Likely a Storm) | San Bernadino Strait | Galleon *San Cristobal* lost while bound for Manila from Acapulco |

*Table 2.2: Natural Hazards which affected or destroyed Spanish galleons, 1645-1754. These events are also described in Table 2.1 with appropriate references.*

In Table 2.2, twenty-one storms are confirmed to have affected the Manila galleons between 1645 and 1754. The majority, though not all, of the vessels that sank or were turned back by storms were travelling from Manila to Acapulco. Of those vessels, the majority sank near Luzon, either in the San Bernadino Strait that separates southern Luzon from the Visayas or on nearby islands. On six occasions between 1645 and 1754, a galleon sank while bound for Manila, with three lost in the ten years between 1645 and 1655.[30] Furthermore, only five storms were confirmed to have affected galleons in the eighteenth century; the other sixteen took place in the seventeenth century, with more than half occurring between 1645 and 1690.

That the route to Acapulco proved more hazardous is significant to the physical and economic impact of typhoons on the colony. Quantifying the latter, however, given the

[30] A seventh vessel, the San Francisco Xavier, nearly sank during its voyage from Acapulco in 1700. However, although the vessel was de-masted and most of the cargo on board was lost, the vast majority of its shipment from Acapulco was saved. Before it encountered the typhoon, the galleon had arrived in Nueva Segovia in northern Luzon, where most of its cargo (including the silver from Mexico) was unloaded and stored as a precaution. Thus, when the galleon limped into Manila Bay, the loss to the colony was relatively minor. *AGI, Filipinas* legajo 124, Número 21.

fragmentary nature of the documents available, is a subject for another dissertation. When a galleon departing Manila was lost, the profits of the city's merchant-class were lost with it, as was all communication bound for Madrid. Disastrous as such events were, the loss of a galleon departing Acapulco, from Manila's perspective, possessed greater ramifications. The loss of the *situado* from Mexico, as much as half the colony's yearly income, delayed building maintenance and repair, the payment of soldiers' wages, and the payment of stipends to the clergy. Furthermore, the loss of specie aboard a galleon from Acapulco deprived the colony of the basis of its currency, hindering all commerce. Relatively speaking, the loss of a galleon departing Manila was less traumatic, though still a stinging loss, whereas the six years when galleons were lost departing Acapulco were catastrophic for the colony.

When a galleon was lost on either route, the colony set to the task of building a replacement. The shipyards of Cavite and Albay (in the southern peninsula of Luzon) repaired galleons after the arduous ocean crossing or, if needed, constructed new vessels. In the years when a galleon was lost, the *polo*—the annual labor tribute owed by colonized peoples to the Crown—was used to marshal indigenous laborers.[31] Constructing a galleon represented a massive project, as each segment of the vessel requiring different types of wood, twine, and iron, all of which needed to be prepared from raw resources and gathered in a shipyard. Carpenters, smiths, and other specialized laborers were also vital to assembling the vessel. Thus, the loss of a galleon impacted labor, resources, and wealth throughout the colony.

[31] Phelan, *The Hispanization of the Philippines,* 99, 103. During emergencies, the *polo* could be extended or enacted early, as it was leading up to the *Batallas de la Naval*, when warships were quickly constructed to meet a Dutch fleet in 1646. *Ibid,* 99. Revolts against the *polo* were commonplace and exemptions were always sought, typically through garnering the favor of local friars. Dennis Morrow Roth, *The Friar Estates of the Philippines* (Albuquerque: University of New Mexico, 1977)*,* 71-72.

In summary, the economic and physical impact of meteorological hazards like storms and typhoons were, over the one-hundred-nine-year period examined, tremendous. On twenty-one occasions, vessels were lost or impeded by storms. In the sixteen instances where the vessels lost or delayed were departing Manila, the private wealth of the city was heavily impacted while all communication with Spain was delayed for a year. In the six instances when a galleon was lost as it returned from Acapulco, every facet of the colony was impacted. In the period between 1645 and 1655 especially, the economic decline of the colony can be substantially linked to the loss of three galleons from Acapulco. And, whenever a vessel was lost or damaged, indigenous laborers were mobilized to work in the shipyards. Thus, every individual in colonial Luzon, regardless of position or wealth, was potentially impacted when a galleon sank; the vessels were indispensable to the colony, and they remained highly vulnerable to the storms of the Pacific.

**The Construction of Poblete's Cathedral**

The second most costly structure in the colony was the Cathedral of Manila. Investment in the Cathedral was justified by the Spanish colonial model. Catholicism, the Spanish argued, justified colonialism.[32] Spain's conquest, occupation, and exaction of tribute were all permissible only if every effort was made to convert—and thereby save—the souls of the islands' indigenous peoples. The cathedral of Manila was the center of this evangelizing mission. It was the seat of Catholicism in the Philippines and was therefore the most symbolically important building in *Intramuros*. The clergy especially felt it should

[32] Phelan, *The Hispanization of the Philippines,* 4 and 7-10.

embody the wealth and glory of their faith and empire so it might convince *naturales* of God's majesty.

The condition of the cathedral between 1645 and 1754, then, must have been disheartening. The cathedral was in constant need of repair during this one-hundred-nine-year period, primarily owing to earthquakes, storms, and humidity. Each time repairs proved necessary, the Cathedral was rebuilt at great cost over many years. The money and time spent on reconstruction partially reflected the Cathedral's importance to the city. However, prolonged reconstruction also reflected the challenges the colony faced financing such a large project.

The travails of the Cathedral can be separated into two phases: the complete reconstruction of the cathedral following the earthquake of 1645 and the revitalization that began in 1733. The former highlights the vulnerability of the Philippine colony to extreme hazards and the Spanish bureaucracy's surprising adaptability. After an unprecedentedly powerful earthquake destroyed Manila and its cathedral, the colony's recovery was delayed by a concurrent economic downturn. While the Crown promised considerable concessions to help reconstruct the Cathedral, these payments were routinely delayed despite innovative attempts by the Crown to pay what it owed. As a result, private money financed the majority of the Cathedral's reconstruction, despite adaptive responses from the Crown and colonial administrators.

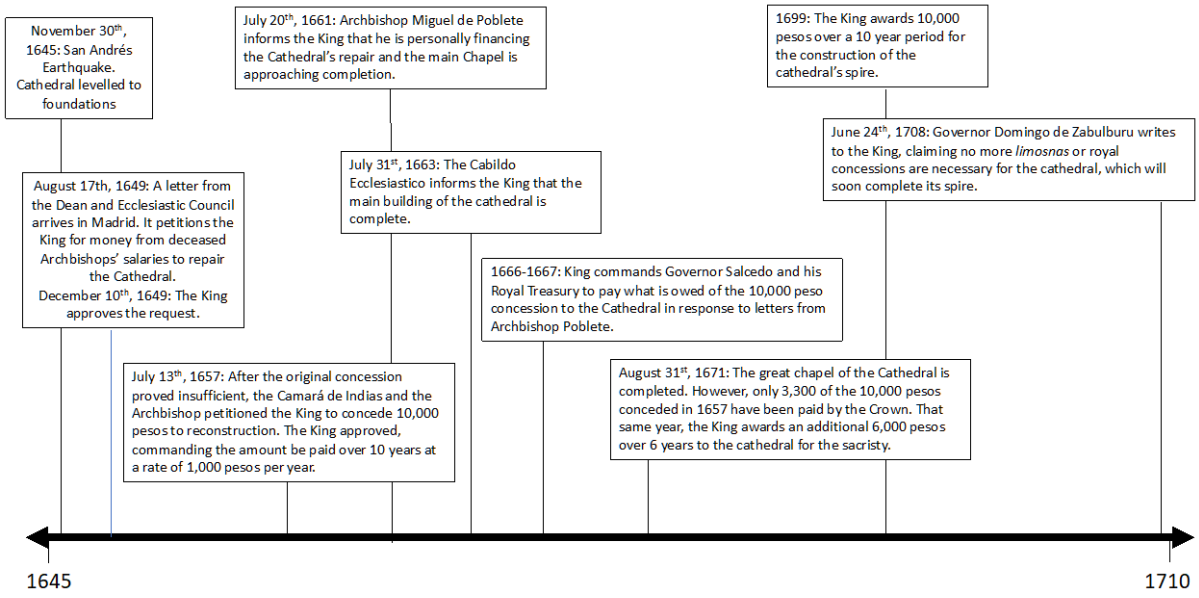


*Figure 2.3: Timeline of significant correspondence and royal concessions relating to the reconstruction of the Cathedral of Manila, 1645-1710.*

The San Andrés earthquake of 1645, so named because it struck during the concluding hours of *Intramuros's* celebration of Saint Andrew the Apostle, decimated Manila. The initial tremors and subsequent aftershocks levelled nearly every building within the city walls, including the cathedral. Several letters and pamphlets confirmed the cathedral's roof, walls, chapels, and spire all collapsed "to the foundations."[33] Soon after the earthquake, Spanish attention turned to repulsing an imminent Dutch invasion.[34] Only after victory was achieved against this immediate threat could attention, and finances, turn towards rebuilding Manila and the Cathedral.

[33] Relacion del horrible terremoto que succedio en las Islas Philippinas a 30 de Noviembre del año 1645 a las 8 de la noche." *AFIO*, Legajo 523, Documento 39, 3R and "Verdadera Relacion de la Grande destruicion, que por permission de nuestro Señor, haauido en la Ciudad de Manila. Declara los templos sumptuosos, y grandes edificios que se hundieron en la dicha Ciudad, y lugares circunvezinos, y gente que murío: con otros grandes portentos, que se declaran" (Madrid: Alonso de Paredes, 1649), 1R-1V.

[34] The *Batallas de la Naval de Manila* in 1646 included five encounters between Spanish forces and a Dutch war fleet. During the battles, nineteen Dutch war ships were ultimately defeated by a hastily assembled force of three Spanish galleons and four smaller ships. For an account of the *Batallas* in English, see "Affairs in the Philippines, 1644-47," in *The Philippine Islands, 1493-1898, Volume XXXV,* ed. Emma Helen Blair and Alexander Robertson (Cleveland: Arthur H. Clark, 1906), a document which is utilized further in Chapter 4 of this dissertation.

The earliest document discussing the Cathedral's condition amongst imperial records that this author encountered is a *consulta* from the *Cámara de Indias* dated 1649.[35] The *consulta* was composed in response to a letter from Manila not preserved in the archives. That letter, dated May 1st, 1648, had explained how the San Andrés earthquake destroyed the city and cathedral. Lacking a cathedral, the clergy now convened in a straw hut (*cajal de paja*) to celebrate the "*divinos oficios".*[36] The letter argued this humble hut was unacceptable because it could not inspire nor maintain faith among the newly converted *naturales.* The clergy, the city, and the colony needed a new cathedral.

The colony, however, was destitute following the earthquake, the *Batallas de la Naval,* and the sudden decrease in colonial income (Figure 2.2). The letter therefore asked the King, as a patron of the faith, to reallocate funds from the archbishop's stipend to the Cathedral. Because the archbishop had passed away prior to the earthquake, his seat was vacant. His annual stipend, though, continued amassing funds. The *Cámara* supported this plea, advising the King to also send stipends from another vacant archbishopric and 1,000 pesos from several vacant bishoprics in New Spain. All this money, the Cámara proposed, could be sent to Manila alongside the *situado*.[37] Later that year, the King ordered the treasury of New Spain to implement the *Cámara's* suggestions, and to send the funds on the next outbound galleon alongside the newly appointed archbishop of Manila, Miguel de Poblete.[38]

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[35] The Consejo de Indias and Cámara de Indias are, for the purposes of this dissertation, near synonymous. The *Cámara* or Chamber of the Indies was the highest authority within the *Consejo* or Council of the Indies. Over the course of the 17th and 18th century, the institution was abolished, reconstituted, abolished, and reconstituted again, each time with a different number of officials and responsibilities. As of 1649, the concerned incarnation of the *Cámara* was five years old and comprised the president and three ministers of the *Consejo de Indias*. See Glossary.

[36] The service and prayers to be performed at specific times of day by the clergy. While the documents use the term "oficios divinos," modern sources tend to invert the word order to read "divinos oficios."

[37] *AGI, Filipinas* legajo 2, Número 103. Letter without page numbers.

[38] *AGI, Filipinas* legajo 347, Libro 3, 282V.

This initial concession proved insufficient to even start reconstruction, as Archbishop Poblete explained to the King in an undated letter (likely from 1655 or 1656).[39] Poblete explained that only one-third of the conceded salaries were consigned for reconstruction. The other two-thirds were spent equally on circulating papal bulls, travel between the provinces, and on the administrative costs of celebrating the *divinos oficios*.[40] To sufficiently finance the cathedral's reconstruction, Archbishop Poblete requested an additional royal concession, to be sourced from tribute taken from *naturales* on vacant *encomiendas* (land not already allotted to a Spanish individual or institution).[41]

In 1657, the *Cámara* in Madrid responded to Poblete's petition, encouraging the King to concede as much as 10,000 pesos over ten years at a rate of 1,000 pesos per year from vacant *encomiendas.* Interestingly, the *Cámara* recommended this income be decreed "temporary" so as to prevent the governor from treating it as "perpetual" income, which he could redirect to other colonial projects at his prerogative.[42] The King, in his *cedulas* to Manila, followed the *Cámara's* recommendations.[43]

This intercontinental and prolonged correspondence demonstrates both the limits and adaptability of the Spanish imperial bureaucracy. The distance between Manila and

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[39] *AGI, Filipinas* legajo 74, Número 126. Archbishop Poblete sent a letter (along with the King's orders from 1649) to the King explaining his original concession was insufficient and asking for additional funding for the cathedral's reconstruction. The *AGI* dates this letter as "probable 1657-7-13." However, this date seems unlikely since corresponding letters from the Cámara and King seem to respond to Poblete's letter in 1657. Since a letter required, at minimum, a year-and-a-half to reach Madrid, Poblete likely authored his letter in 1655 or 1656.

[40] The King had, in a 1647 *cedula*, commanded that one-third of the salaries of the vacant archbishoprics be used to cover the administrative costs of the divine offices. See *AGI, Filipinas* legajo 347, Libro 3, 191R-192V.

[41] Poblete does not specify whether he desired 4,000 pesos total or per year. Poblete requested "quatro mill pesos para la reedificación de esta catedral hasta que ube [f]enecido…" which translates to 4,000 pesos for the rebuilding of this cathedral until it has been completed. Ube in this instance is hube while fenecido or completed is spelt senecido within the document (the f in Poblete's script at times appears squished and looks more like the letter s than f). The wording of the letter after translation does imply Poblete wanted an annual income of 4,000 pesos.

[42] *AGI, Filipinas* legajo 2, Número 170.

[43] *AGI, Filipinas* legajo 348, Libro 4, 203V-209V.

Madrid meant a plea for aid from Manila would not arrive in Madrid for one or two years, and any royal response required another two years to return to Manila. This drawn-out journey meant royal concessions came slowly and reconstruction, if it required royal approval or aid, could not move quickly.

The exchange of letters also demonstrates that, rather than surrender to the tyranny of distance, the Crown attempted to resolve the matter of reconstruction through a new payment method. Funds already apportioned to the church were drawn upon, and when these proved insufficient the Crown turned to the islands' greatest available resource, the *tributos* (tributes).[44] These repeated attempts to finance the cathedral's reconstruction suggest that the cathedral's condition greatly concerned the King. His insistence, then, that funds be beyond the governor's control is fascinating. That decision indicates that colonial officials would redirect royal funds to projects they deemed more urgent. Clearly, the King and the colonial administrators had differing opinions on the importance of the Cathedral.

When Archbishop Poblete wrote again in 1661, he informed the King that the nave (main body) of the cathedral was approaching completion. However, construction could not be completed without additional funds. Because the islands were so impoverished, vacant *encomiendas* could not provide the 1,000 pesos per year promised by the Crown. Lacking royal aid, Archbishop Poblete instead financed the reconstruction through a combination of the King's initial concession, alms and donations from the city's residents, and his own family's estate.[45] While Archbishop Poblete does not provide information on the cost of the

[44] The *naturales* on the *encomiendas* were theoretically able to provide the funding necessary for the Cathedral through their annual dues to the *encomienda's* possessor, the *repartimiento*. In practice, this strategy proved unreliable since Philippine *encomiendas* offered inconsistent income. Terminology from Giraldez, *The Age of Trade,* 79-80.

[45] A symposium on the history of Cathedral convened in 1959 asserted that Poblete acquired 40,455 and a half pesos from donations, which represented two-thirds of the eventual cost of rebuilding the cathedral (though no sources for these values are provided). Letters from Archbishop Poblete and—after his passing—his

nave or the size of charitable donations, later documents hint that the archbishop personally donated tens-of-thousands of pesos to start and finish the cathedral's main body, hence why, amongst modern historians, the new cathedral was often referred to as Poblete's Cathedral.[46]

Poblete's cathedral was built from stone and lime. The archbishop described its main body as forty-four *brazas* long, fifteen wide, and two tall. Two chapels were built along the sides of the building, while the primary edifice had an arched ceiling and was divided in three by two bands of seven pillars.[47] The foundations were placed six *brazas* beneath the Earth for added stability. Since the seventeenth century pre-dated standardized units, the length of a *braza* could vary dramatically depending on the year (though in the eighteenth century, it equated to 1.67 meters).[48] The ratios provided for the Nave, though, give a sense of the building. In particular, the depth of the foundations relative to the height of the nave was three-to-one. Poblete's cathedral was squat, stout, and supported by pillars, arches, and deep foundations. One imagines, despite its diminutive stature, that the new building was sturdy and well-adapted to earthquakes, an assertion proven by its survival of two destructive earthquakes in 1676 and 1688.

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nephew, however, state the archbishop made considerable donations from his family's estate to reconstruct the cathedral. See Antonio G. Manuud, Enrique D. Perez, Genaro V. Ong, and Angelita Martinez, "The Manila Cathedral, 1571-1958: A Symposium," *Philippine Studies,* Vol. 7, No. 1 (January, 1959): 106-107.

[46] *AGI, Filipinas* legajo 76, Número 95.

[47] *AGI, Filipinas* legajo 74, Número 129.

[48] The *braza* was an imperial measurement set by the King (that could change with each King). As a result, determining the exact dimensions of Poblete's cathedral in meters is difficult. However, its height was likely between 3 and 4 meters.

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*Figure 2.4: "Mapa y diseño de la planta de la Santa Yglesia Cathedral de Manila, según existía hasta el año de 1750". AGI, MP-Filipinas,* Número 34BIS, 1.
*"Map and Design of the Holy Cathedral of Manila, as it existed until the year of 1750." Remitted to Madrid in 1753 at the behest of the King, this image represents the floorplan of the Poblete Cathedral as it existed until the Archbishop of that period began extensive reconstruction of the façade (see below). A key is provided (without translation here) to explain the various parts of the*

*building. The letter "A" signifies the Nave, while "C" represents the chapels, "D1" the sacristy, and "O" the bell tower, among others.*

Only two years later in 1663, the *cabildo eclesiástico* (the ecclesiastic council, the highest appointed authority amongst the clergy besides the Archbishop) of Manila informed the King that the nave had been completed in 1662. For almost a year, the *cabildo* testified, the cathedral had been used for celebrating the *divinos oficios* and for official purposes.[49] For the first time in nearly eighteen years, the Archbishop and prestigious members of the faith had a functional cathedral.

Letters from 1666, 1671, 1673, 1674, and 1677 indicate that, as other additions continued to be made to Poblete's Cathedral, the Crown's 10,000 peso concession (from 1657) remained partially unfulfilled.[50] Adding to the Crown's debts, another concession of 6,000 pesos (to be paid over six years) was granted to complete the vestry, clerical offices, and sacristy in 1671.[51] That same year Jose Millán de Poblete, the nephew of Archbishop Poblete and the elected bishop of Nueva Segovia, wrote to the Queen Regent, informing her that the Greater Chapel of the Cathedral was finished.[52] Archbishop Poblete had, by this time, passed away, entrusting his cathedral's completion to his nephew.[53] By 1677, twenty years after offering its 10,000 peso concession, the Crown tried a new approach to paying

[49] *AGI, Filipinas* legajo 77, Número 75.
[50] *AGI, Filipinas* legajo 74, Número 132; *Filipinas* legajo 348, Libro 5, 73R-73V and 97R-98R. See also *AGI, Filipinas* legajo 331, Libro 7, 67V-68V, 82R-82V, and 89V-90V.
[51] *AGI, Filipinas* legajo 3, Número 27.
[52] Bishop Poblete's letter is accompanied by several pieces of supporting documentation that give a sense of the cost of rebuilding the cathedral's largest chapel and how money was gathered for the project. The Crown contributed 4,968 pesos to the project. The money the bishop gathered from alms and donations amounted to 1,909 pesos. The 6,877 gathered did not cover the full costs of the chapel, which came to 7,677 pesos, though, so the bishop provided the remaining money (listed as 799 pesos) from his family estate. See the introductory letter and the "Testimonio de la quenta [sic]" in *AGI, Filipinas* legajo 76, Número 95.
[53] The 1959 symposium corroborates this account, saying the main body was completed in 1671 at a cost of almost 63,119 pesos. Again, the article does not provide citations for this claim. See Antonio G. Manuud et al, "The Manila Cathedral, 1571-1958: A Symposium," 106-107.

its remaining debt, commanding the interim viceroy of Nueva España (Mexico) to pay the Archbishop and Cabildo of Mexico what was still owed directly from the viceroyalty's treasury.[54]

After 1677, the catherdral does not feature prominently in the archives for more than a decade. This silence partially reflects the state of the Cathedral in the concluding years of the seventeenth century. It was incomplete but functional while many other indispensable and prominent buildings, such as the Castillo de Santiago and the Port of Cavite (see below), were still in ruins. The Cathedral did manage to draw the King's attention in 1699, after he received a letter from the *cabildo eclesiástico* dated 1696, which argued 3,200 pesos were still owed from the concession of 1671. Furthermore, the letter added that, of the 2,800 pesos remitted from vacant *encomiendas*, more than 1,000 were spent repairing the cathedral's wooden ceiling, which suffered damage from the "earthquakes and hurricanes," rather than completing the structure.[55]

Three years later (1702), governor Domingo de Zabalburu confirmed to the King that he had just fulfilled the Crown's concession from 1671. The Crown remained indebted, though, because a new ten-year concession of 10,000 pesos was offered to reconstruct the Cathedral's spire in 1699.[56] However, in a letter from 1705, Governor Zabalburu asserted the archbishop had raised 55,313 pesos by his own means (likely through private donations). This amount, Zabalburu argued, was more than sufficient to complete the spire as well as finance the cathedral's other repairs and reconstruction. Therefore, he concluded, the cathedral no longer required royal dispensations.[57]

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[54] See *AGI, Filipinas* legajo 331, Libro 7, 200V-202R and 213R-215R.
[55] *AGI, Filipinas* legajo 78, Número 32. See also *AGI, Filipinas* legajo 349, Libro 7, 40R-43V and *AGI, Filipinas* legajo 332, Libro 10, 94R-95R.
[56] *AGI, Filipinas* legajo 125, Número 19.
[57] *AGI, Filipinas* legajo 193, Número 77.

The exact date the spire was completed is not readily available, though it was likely completed within the decade. Regardless, the total reconstruction of the cathedral had taken over sixty years. Erecting the main edifice alone had required seventeen-and-a-half years; the majority of those years were spent procuring adequate funding. Smaller projects in the subsequent forty-two years (between 1663 and 1705) included constructing chapels, the sacristy, and the spire, along with repairs to the wooden roof.

Interestingly, no letter from the seventeenth century gave full account of the total cost of these projects. A partial account was provided to the King in the 1730s, when the Cathedral was again petitioning for aid. Between 1681 and 1720, 68,094 pesos were consumed in constructing and maintaining the cathedral. 26,000 came from the royal concessions, while the remainder came from private donations and alms (not including Archbishop Poblete's contributions).[58]

In trying to rebuild the cathedral, both the Crown and Manila proved surprisingly adaptable. The Crown struggled to provide its promised concessions, but each new concession learned from its predecessors' failures and improved. When accrued religious salaries failed to pay for reconstruction, the Crown offered a considerable sum (10,000 pesos) to come from local *encomiendas* instead. When this too failed, the Crown asked for some of its debts to be paid directly by the viceroy in New Spain. Each act represented a conscious attempt to adapt to the colony's lack of revenue. These adaptations, while ultimately successful, were not particularly effective. Payments could arrive decades late, and the distance between Manila and Madrid prevented rapid or responsive adjustments by

[58] *AGI, Filipinas* legajo 334, Libro 14, 107V-112R.

the Crown or a true appreciation of the condition of Manila and its Cathedral. No amount of ingenuity or flexibility could overcome the physical realities of the age of sail.[59]

Manila's residents, like the Crown, demonstrated great concern for their cathedral. Donations and alms funded reconstruction at a time when all of Manila was struggling financially (see Figure 2.2). Their actions, the donations of Archbishop Poblete, and the constant correspondence between Manila and Madrid are evidence of the cathedral's importance to the city. In its absence, many made considerable sacrifices to restore it and re-establish the Catholic center of the colony. Still, seventeen years of reconstruction and the squat nave that emerged, along with another forty years of smaller projects, all indicate the city lacked the funds to quickly and fully restore the cathedral. Instead, a less sumptuous, more resilient building capable of withstanding the harsh environment of Central Luzon was necessary, and it emerged piece-by-piece over half-a-century.

The physical impact of natural hazards on the Cathedral then, especially seismic hazards like the San Andrés earthquake, must be described as massive. The new nave, with its deep foundations and a well-supported roof, show the city recalled the earthquake when designing the new cathedral, adapting the building to resist powerful tremors. However, the prolonged reconstruction of the cathedral seems the product of economic factors rather than the earthquake of 1645. Certainly, when the earthquake levelled Manila it impoverished the colony. Yet to attribute this to the earthquake alone is to ignore the after-effects of the *Batallas de la Naval,* the collapse of the silver trade with China, raids by Muslim slavers from Mindanao and Sulu, and indigenous revolts, not to mention all the other earthquakes, storms, and crises that occurred in colonial Luzon between 1645 and

[59] For more on how winds shaped Spanish Imperialism in the Pacific, see Greg Bankoff, "Winds of Colonisation: The Meteorological Contours of Spain's Imperium in the Pacific 1521-1898," *Environment and History,* Vol. 12 (2006): 70, 73-74.

1705. Therefore, the new cathedral must be considered the product of a half-century of setbacks and penury, the largest of which was the San Andrés Earthquake of 1645.

**The Castillo de Santiago**

Many buildings were more essential than the Cathedral to the continued existence of the colony, if not to its identity. Fortresses signified military might, projecting and defending Spanish influence in Luzon. The most prominent and important was the Castillo de Santiago, which stood (and stands) at the northwest corner of *Intramuros,* at the mouth of the Pasig River.

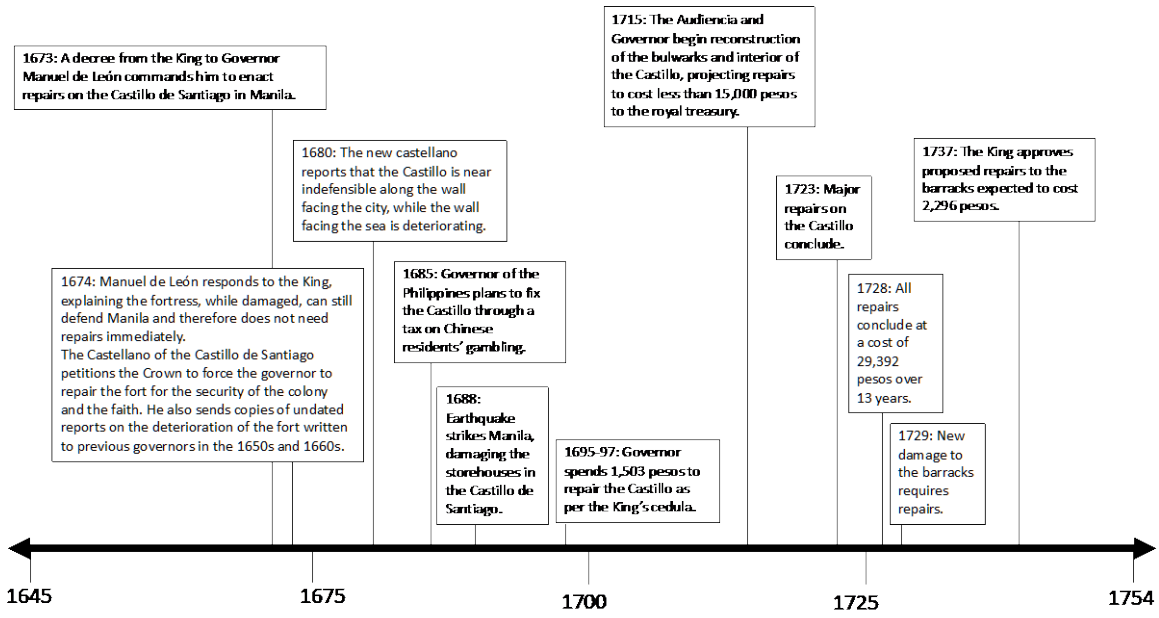


*Figure 2.5: Timeline of events pertinent to the Castillo de Santiago, 1645-1754.*

Despite the many earthquakes and storms of the seventeenth and eighteenth century, natural hazards played a relatively small role in the Castillo's history, never destroying the edifice. Though the Castillo was in a state of disrepair until the eighteenth century, the building never collapsed, nor did its repair require petitions for royal assistance. The Castillo therefore stands in almost-direct opposition to the Cathedral as a building that

prioritized functionality over symbolism and as an edifice was more resilient to the extremes of Luzon's environment. However, as with the Cathedral, its repair was plagued by constant delays due to insufficient funds.

The effects of the San Andrés earthquake on the Castillo were not discussed in any official correspondence in the *Archivo General de Indias.* Still, the earthquake likely had some effect, because in the 1650s, during the tenure of Governor-General Manrique de Lara, the Castellano of Santiago began advocating for repairs to the fortress's walls, which were collapsing.[60] By the 1670s, the castillo's condition had worsened, drawing the attention of the Royal Council in Madrid.[61] Governor Manuel de León insisted, though, that the castillo did not require any repairs due to its location: "[it] is situated at the mouth of the river of this city [and] possesses a bulwark that looks to the sea without having land where enemies could attack it from, other than the shore of the river that the bulwark dominates."[62] He concluded that, to win the fort, an enemy would first need to win the city. However, since all the rice and gunpowder were stored in the fort, it would also be the most defensible segment of the city, able to withstand a prolonged siege while depriving invaders of food.[63]

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[60] However, neither Manrique de Lara nor his successor Diego de Salcedo moved to repair the Castillo, which continued to deteriorate. *AGI, Filipinas* legajo 44, Número 7. There is also mention that, a few years prior to the earthquake, Governor Sebastián Hurtado de Corcuera (governor from 1635 to 1640) had overseen renovations to the Castillo de Santiago.

[61] *AGI, Filipinas* legajo 331, Libro 7, 75V-76R.

[62] *AGI, Filipinas* legajo 10, Rollo 1, Número 32.

[63] Manuel de León's apparent confidence in the placement of the fort directly contradicts testimony from the *castellano* (commander of the castillo) of the time. The Castellano Lorenzo de Orella y Ugalde (who Manuel de León would later write needed to be replaced due to illness and age), petitioned the King to command repairs be made in several letters. In 1671 and 1676 he wrote that he completed three *consultas* under the three previous governors, explaining the need for repairs, munitions, and men. He feared invasion from the English, French, or corsairs in Formosa (Taiwan). Ugalde had a distinguished career of service. He began as a member of the Spanish Navy before serving as commander of the Real Presidio (fortress) in Callao (near Lima), in the Philippines, and in other parts of the Spanish Empire. See *AGI, Filipinas* legajo 43, Número 49; *AGI, Filipinas* legajo 43, Número 36; *AGI, Filipinas* legajo 43, Número 49; and *AGI, Filipinas* legajo 11, Rollo 1, Número 7. For more on Corsairs in this period including Zheng Chengging or Coxinga, see Joseph MacKay, "Pirate Nations:

The earthquake of 1688 did additional damage to the deteriorating bulwarks, making repairs all the more urgent.[64] In 1695, Governor Fausto Cruzat spent 1,503 pesos on general repairs to the Castillo, but extensive repairs did not occur for another two decades.[65] Finally, in 1715, the Audiencia and several governors turned their full attention to the Castillo. Repairs transpired rapidly in the following years, with the Crown being notified of progress through annual reports. By 1723, most major repairs were completed.[66] This prompted a final cedula from the King asking for word of the fort in 1725.[67] The King's letter was answered in 1728 with a final *reconocimiento* declaring the repairs completed.[68] In total, the cost of repairs over the thirteen-year period from 1715 to 1728 was 29,393 pesos. Within three years, the barracks again required repairs, seemingly due to tiles being dislodged by the elements and the reverberations of artillery fire. Their condition was not addressed until 1736, when a survey assessed the cost of repairs to be approximately 2,300 pesos.[69] With the King's approval, work began in 1739. The final cost of the repairs could not be found in the archives.

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Maritime Pirates as Escape Societies in Late Imperial China," *Social Science History,* vol. 37, no. 4 (Winter, 2013): 559, 562-563.

[64] In particular, damage to the royal storehouses where trade goods and gunpowder were stored required immediate attention. *AGI, Filipinas* legajo 331, Libro 9, 214V-217R and *AGI, Filipinas* legajo 122, Número 17.

[65] *AGI, Filipinas* legajo 122, Número 17, Document 3.

[66] By 1716, repairs to residence of the Castellano, the walls, a door to the castillo, and other general work was completed at the cost of 5,520 pesos. In 1717, several projects were completed in the Chaplain's house, the Spanish infantry's barracks, the Pampangan infantry's barracks, and the prisons. Together, supplies and labor towards these projects cost 14,401 pesos. In 1721, more repairs were made to the bulwarks, the captain's quarters, and the weapons room amounting to 820 pesos. Additional work completed in 1723 saw most of these projects completed, with a few platforms still requiring attention and the cost of importing the remaining materials expected to be 8,109 pesos. See *AGI, Filipinas* legajo 94, Número 99; *AGI, Filipinas* legajo 171, Número 14; and *AGI, Filipinas* legajo 173, Número 10.

[67] *AGI, Filipinas* legajo 333, Libro 12, 330V-331R

[68] The final repairs from this period cost 543 pesos. *AGI, Filipinas* legajo 176, Número 3.

[69] *AGI, Filipinas* legajo 178, Número 35 and *AGI, Filipinas* legajo 147, Número 8. The latter document has a moment of confusion where the King commands repairs be made to the barracks of the Castillo de San Felipe in Manila, and the governor responds that repairs will be made to the Castillo de Santiago in Manila, never bringing attention to what appears to be a royal error. Also see *AGI, Filipinas* legajo 439, Número 16. Also see *AGI, Filipinas* legajo 180, Número 19.

In the period under study, the Castillo de Santiago's condition was clearly a recurrent concern. Maintaining the castillo was a challenge for the colony, but one the colonial administrators ultimately addressed without royal concessions. Serious repairs were delayed during the seventeenth century when the colony's income was low, despite a crumbling bulwark. However, as the colony became more prosperous—especially during the eighteenth century—colonial administrators attended to the castillo relatively quickly. The costs of major reconstruction, although considerable at approximately 30,000 pesos, were dispersed over thirteen years to make annual payments manageable. The subsequent, smaller repairs detailed above brought the total cost of maintaining the Castillo de Santiago between 1645 and 1754 to 32,000 pesos.

The physical impact of natural hazards in the Castillo's history and reconstruction, though, was neither negligible nor pronounced. The castillo withstood earthquakes and storms without enduring catastrophic damage from a single event (with the possible exception of the San Andrés earthquake). Instead, time proved a greater threat to the Castillo. The accumulation of damage from weather, erosion, and repeated natural hazards gradually wore down the bulwarks, storehouses, and barracks. The fortress was vulnerable to the environment's extremes but proved resilient compared to the Cathedral and most of *Intramuros.*

**Castillo de San Felipe**

The town of Cavite was (and remains) located on a claw-shaped peninsula south of Manila that juts into the bay. Cavite was the deep-water port of Manila and the launching site for the galleons. The Castillo de San Felipe was the port's primary defense. It was

smaller than its counterpart in Manila, but was essential to the defense of the bay. Nonetheless, it proved more vulnerable to both earthquakes and decay.

In the earliest letter from this period describing the Castillo (1650), Governor Diego Farjado confirmed the fortress could no longer defend the entrance to the bay and Manila.[70] Responding to a royal cedula demanding an explanation, Farjado's successor, Manrique de Lara, said the Castillo, once located on the shore of the Bay, was now removed from the sea by nine-hundred *pies* (lit. feet) due to sedimentation.[71] De Lara's 1659 letter also explained the castillo was in poor condition. As a temporary solution, small fortifications were erected to house Spanish cannons and defend the bay.[72]

The Castillo de San Felipe was not attended to in earnest until the 1680s, when reports indicate the entire fortress was crumbling due to erosion and decay. Letters dated 1685 reported that, despite the King's commands, no money from a tax on the Chinese had been set aside to reconstruct the castillo.[73] The Chinese paid the Crown for the right to gamble during the lunar new year (*juegos de metúa*). From 1676 until 1684, the Chinese paid 3,000 pesos per year to gamble, but the nearly 30,000 pesos collected by the colonial administration were spent on unspecified projects. In 1685, to fulfil the King's command and quickly raise money to repair Cavite and San Felipe, Governor Curucelaegui permitted the Chinese to purchase additional days to gamble, raising the annual income generated to 7,500 pesos.[74]

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[70] *AGI, Filipinas* legajo 330, Libro 5, 42R-43R.
[71] A *pie,* like a *braza,* is a Spanish Imperial unit of measurement, comparable to the English Imperial foot. It may be assumed a *pie* as used here was approximately 28 centimeters (or 11 inches, slightly less than a modern English foot).
[72] *AGI, Filipinas* legajo 9, Rollo 2, Número 24.
[73] The King's response (1687) expressed displeasure that money was not saved in previous years. In order to prevent funds being redirected, he ordered a *fiscal* (accountant) be appointed to guard a special account for repairs and that 33,630 pesos enter that account. *AGI, Filipinas* legajo 331, Libro 8, 205V-207R.
[74] *AGI, Filipinas* legajo 12, Rollo 1, Número 39.

In 1688, though, the governor informed the King about an unanticipated complication. While the new tax scheme gathered 7,500 pesos in 1686, revenues decreased in subsequent years. In 1687 and 1688, only 6,000 and 3,545 pesos were generated respectively. The governor attributed the decrease to a lack of specie on the islands and therefore decreased gambling (though a failed revolt by Manila's Chinese population in 1686 also bore partial responsibility).[75] As this was the last time the gambling tax was mentioned in relation to the Castillo de San Felipe, it seems decreasing returns doomed this attempt at fundraising.

That same year (1688), a powerful earthquake struck the bay of Manila, causing several weakened parts of the Castillo de San Felipe to disintegrate. The principal door of the fortress, its walls, the guarded area where the Naos stood, and other parts of the Castillo collapsed.[76] The death of Governor Curucelaegui soon after hindered repairs. His successor, the Interim Governor Abella Fuertes, oversaw minor repairs costing 1,110 pesos.[77] Work then concluded during the tenure of Governor Fausto Cruzat y Gongora. By 1695, he had spent 17,833 pesos repairing the Castillo at no expense to the royal treasury; he achieved this through a series of inventive cost-cutting measures and makes no mention of the gambling tax. By 1698, repairs at the Castillo de San Felipe were nearing completion, at which point the Castillo's condition receives little mention in documents composed before 1754.[78]

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[75] *AGI, Filipinas* legajo 13, Rollo 1, Número 11.
[76] *AGI, Filipinas* legajo 122, Número 17.
[77] *AGI, Filipinas* legajo 14, Rollo 2, Número 16.
[78] *AGI, Filipinas* legajo 122, Número 17, Third letter. As late as 1746, the Port and Castillo were deemed capable of repulsing an invasion. See *AGI, Filipinas* legajo 449, Número 4. However, a survey performed in 1764 indicated the walls of the fortress had again collapsed due to erosion from waves. See *AGI, Filipinas* legajo 918. The documents in this legajo are not ordered, nor are their pages numbered. However, the information cited here is available in the first document of the legajo.

The Castillo de San Felipe's reconstruction demonstrates interaction between natural hazards and slow-moving natural processes. The earthquake of 1688 was so destructive because the castillo had suffered decades of weathering and erosion. The physical impact of the natural hazard was, in this case, augmented by pre-existing decay. After the 1688 earthquake caused the walls to collapse, though, reconstruction of the Castillo de San Felipe became a priority for local authorities. Implied by this story, as well as the story of a failing bulwark in the Castillo de Santiago, was that Luzon's colonial authorities were slow to respond to decay. An earthquake that imparted sudden damage, though, could provoke a rapid response from colonial authorities, especially in the concluding years of the seventeenth century when the colony's income began growing (Figure 2.2). In the case of the Castillo de San Felipe, reconstruction transpired relatively quickly (within a decade) and funding—so difficult to procure before 1688—was obtained with minimal expense to the royal treasury. For the Castillo in Cavite, the earthquake forced a response from colonial authorities that slow-moving decay could not.

**Puerto de Cavite**

The other important structure impacted by natural processes in Cavite was the port. Both Curucelaegui and Cruzat mentioned and tried to address the deteriorating port in correspondence with Madrid as constant erosion increasingly made the project urgent.[79] Ultimately, Cruzat's successor, Governor Domingo de Zabalburu, argued in 1702 that the structural integrity of the port was undermined and any repair short of massive reconstruction would be palliative or even ineffective.[80]

[79] *AGI, Filipinas* legajo 12, Rollo 1, Número 39; *AGI, Filipinas* legajo 122, Número 17, third letter; *AGI, Filipinas* legajo 331 Libro 9, 214V-217R; and *AGI, Filipinas* legajo 332, Libro 10, 157V-158V.
[80] *AGI, Filipinas* legajo 125, Número 12.

A *reconocimiento* performed under Zabalburu's guidance estimated the cost of repairing the port to be 175,000 pesos, an amount the royal government could not pay in time to preserve the port.[81] Zabalburu, for this reason, turned to the merchant community for aid. He placed an import tax on goods coming from Nueva España in 1704, quickly raising 16,488 pesos and the ire of several prominent residents, including the archbishop.[82] With the cooperation of the Viceroy of Nueva España and the King, the tax on commerce continued despite their objections.[83] In 1708, Domingo de Zabalburu boasted to the King that work on the Port was complete without any cost to the royal treasury. Furthermore, the cost of repairs was well below the previous estimate: approximately 60,000 pesos were spent on the port rather than 175,000.[84]

Zabalburu's import tax set a new precedent for colonial administrators to tax private wealth to repair structures vital to merchant activity.[85] The port, Zabalburu had argued, was essential to commerce in the city, and therefore the merchants of Nueva España and Manila should finance it.[86] And, based on Zabalburu's brief 1708 letter, the port of Cavite was functional with four years of construction (1704-1708). The reconstruction of the port therefore provides an uncharacteristically resounding success in the history of administrators responding to damage caused by the Philippine environment.

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[81] *AGI, Filipinas* legajo 129, Número 31.
[82] *AGI, Filipinas* legajo 129, Número 31. The tax was suspended in anticipation of the King's approval. A letter dated 1704 from the King to Zabalburu approved his tax. However, that letter would not have arrived in Manila until 1706 at the earliest. *AGI, Filipinas* legajo 332, Libro 11, 72V-73R.
[83] *AGI, Filipinas* legajo 129, Número 96; *AGI, Filipinas* legajo 119, Número 27; and *AGI, Filipinas* legajo 332, Libro 11, 72V-73R.
[84] The exact cost of repairs was not reported in any *traslados* encountered by this dissertation, but was reportedly 60,000 pesos. *AGI, Filipinas* legajo 129, Número 96.
[85] In 1711, Zabalburu's successor, the interim governor the Count of Lizárraga reported that the sea wall protecting the port had eroded and an additional 6,500 pesos was spent repairing it. The count expressed uncertainty whether the Crown or the merchants would cover the expenses. Another governor, Francisco de la Cuesta, would write that the sea wall required urgent repairs in 1721, though he did not provide the expected cost of this vital project. *AGI, Filipinas* legajo 129, Número 138. *AGI, Filipinas* legajo 134, Número 8.
[86] *AGI, Filipinas* legajo 129, Número 31.

The direct physical impact of natural hazards in this story, however, seems minimal, even non-existent based on the documents available. Instead, natural processes (erosion) destroyed the port. How colonial administrators addressed this problem—a targeted tax on private income—signified a new strategy for coping with Luzon's hazardous environment. While merchants protested the new tax, they were overruled by the Crown, who reasoned it was not oppressive or unjustified because the port was indispensable to the merchants. It was a piece of imperial infrastructure the colony could not maintain by itself, and while the merchants were loath to surrender a portion of their wealth to repair the port, they found the tax preferable to the alternative. Of course, this source of funds had a fatal flaw: it, like all the merchant class's wealth, was tied to the vibrancy of the silver trade, which was anything but consistent. Still, Zabalburu's tax on the merchant class set a valuable precedent for responding to future hazards, as evidenced in the reconstruction of the Royal Storehouses.

**The Royal Storehouses: How the Colonial Government Profited from a Fire**

The Royal Storehouses were an essential building for the city and merchants alike. Trade goods for and from the Manila Galleons and foodstuffs such as rice and wheat were stored inside. The storehouses were a part of the Castillo de Santiago until the King ordered they be moved to a new building in *Intramuros* in the 1690s following damage caused to the Castillo's storerooms during the earthquake of 1688.[87] Ultimately, Governor Cruzat would place the storehouses in the center of Manila, across from the *Contaduría* (accounting house), and they would be completed in 1725.[88]

[87] *AGI, Filipinas* legajo 331, Libro 9, 214V-217R and *AGI, Filipinas* legajo 122, Número 17.
[88] *AGI, Filipinas* legajo 122, Número 17. The decision to move the storehouses came at considerable cost. Before construction could begin, the required land was purchased from the Monastery of Santa Clara, and

The storehouses would be consumed eight years later in a fire on June 18th, 1733. Investigations concluded the fire was accidental and originated in the building's bakery. The conflagration spread through the storehouses, eventually encountering the saltpeter and gunpowder. The resulting explosion then consumed the majority of the storehouse's contents.[89] The governor of the time, Valdés Tamón, set about repairing the damage immediately, but he also instituted several reforms, most notably commanding saltpeter and gunpowder be stored in a separate room from other goods.[90]

The total cost of the repairs, completed in 1740, was approximately 12,300 pesos.[91] However, this came at no cost to the Royal Treasury. Instead, the treasury profited from the fire, gaining approximately 17,700 pesos because, following the disaster, the merchants of Manila donated 30,000 pesos to the colonial administration. This money was spent on supplying the galleons the year of the fire (5,400 pesos) and on restocking the depleted storehouses (12,300 pesos).[92] The impact of natural and artificial hazards in this story is considerable because an earthquake caused the storehouses to move from the damaged Castillo de Santiago. After the new storehouses were completed, the fire of 1733, an artificial hazard, gutted the building and consumed its contents, jeopardizing the colony.

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tenants who had built on that land were reimbursed (with the exception of one deceased resident whose estate was repossessed to pay his debts to the colonial government). This cost the Crown some 1,627 pesos. Construction began soon after the requisite land purchases were made in 1700, and continued until 1721, with some additional work occurring in 1725. The total cost of the new storehouses was estimated to be 36,500 pesos, paid for over twenty-five years. *AGI, Filipinas* legajo 135, Número 4; *AGI, Filipinas* legajo 137, Número 3; *AGI, Filipinas* legajo 140, Número 28.

[89] *AGI, Filipinas* legajo 145, Número 8.

[90] *AGI, Filipinas* legajo 384, Número 29; *AGI, Filipinas* legajo 384, Número 35; and *AGI, Filipinas* legajo 196, Número 22.

[91] *AGI, Filipinas* legajo 146, Número 25; *AGI, Filipinas* legajo 147, Número 13; *AGI, Filipinas* legajo 149, Número 16.

[92] *AGI, Filipinas* legajo 196, Número 22; *AGI, Filipinas* legajo 440, Número 10; *AGI, Filipinas* legajo 445, Número 25; *AGI, Filipinas* legajo 147, Número 13; and *AGI, Filipinas* legajo 150, Número 21.

More intriguing than the hazards, though, were the actions of the merchants. Seemingly unsolicited, they donated 30,000 pesos, both to restock the galleon departing for Acapulco with trade goods and to repair the damaged edifice of the storehouses. The fire was the only disaster in this period that profited colonial administrators, since the donation exceeded the cost of repairs and associated purchases. The merchants' decision to intervene echoes their involvement in the restoration of the port at Cavite; when a piece of infrastructure was essential to their continued wealth, the merchants of Manila were willing to make a donation—or an investment—in their city. The storehouses thus became one of the few non-religious buildings capable of marshalling the great private wealth of the city.

**18th Century Revitalization of Poblete's Cathedral**

In 1733, the *Cámara* in Madrid was again considering requests for royal aid to fund repairs to the Cathedral of Manila, which had accumulated structural damage (particularly in the roof) from repeated storms and earthquakes. Another *consulta* from 1739 details the condition of the cathedral: after approximately thirty years without repairs, the royal *maestro de obras* (Master of Works) certified 12,000 pesos were necessary to save the cathedral from complete ruin. The *Cámara,* citing precedent from the previous century, recommended the cathedral receive one-third of the archbishop-in-vacancy's salary for repairs, as well as another concession of 10,000 pesos to be paid in 1,000 peso installments for ten years.[93] However, unlike in the past, this payment of 10,000 pesos was to come directly from Nueva España as part of the annual *situado*, not from local *encomiendas*.[94] The

[93] *AGI, Filipinas* legajo 95, Número 90 and Número 91.
[94] *AGI, Filipinas* legajo 95, Número 91. Furthermore, as part of the new concession of 10,000 pesos, the *cabildo eclesiástico* was required to offer an account of how the previously conceded 26,000 pesos were spent repairing the cathedral or else risk having the concession revoked. When the Cámara received these accounts,

King approved this new plan, but payments would again fail to arrive on schedule because the Viceroy of New Spain only sent 2,000 of the 10,000 pesos owed.[95]

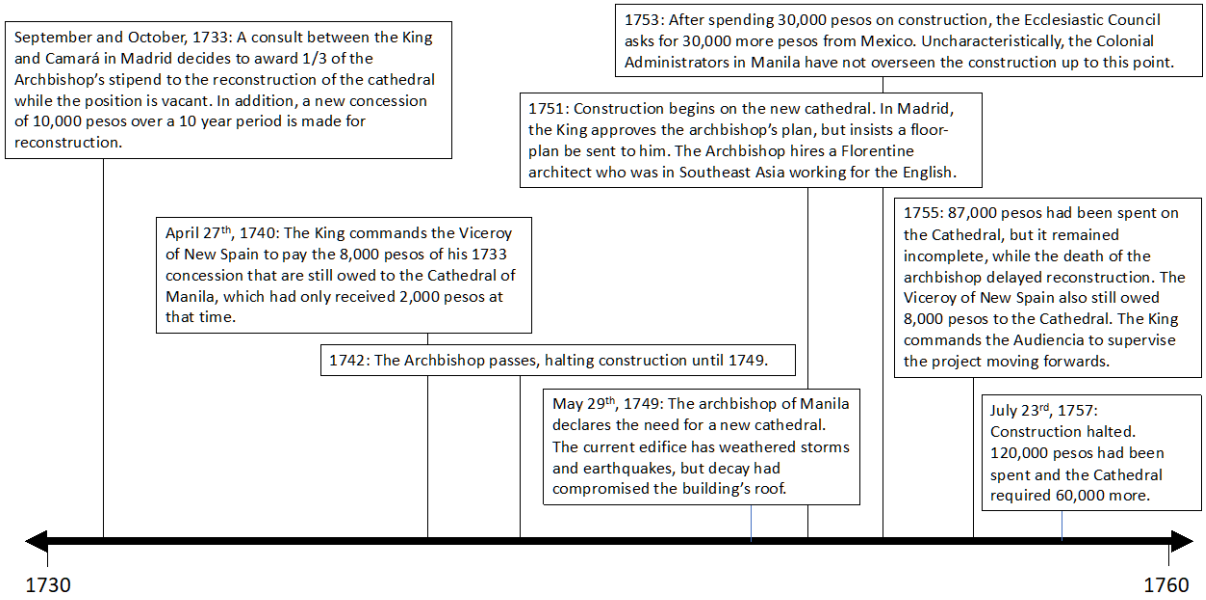


*Figure 2.6: Timeline of Events for the Revitalization of the Cathedral of Manila, 1730-1760.*

Another series of correspondence began in 1749, when the archbishop Pedro Martínez de Arizala composed an emphatic letter to the King about the cathedral. The remaining 8,000 pesos owed by the Crown had never arrived and were now desperately needed. An uncertified architect who was part of the Jesuit order had determined the costs of repairing the Cathedral now exceeded the costs of building a new cathedral. The archbishop testified that the pillars, walls, and timber roof were all disintegrating because of humidity, frequent deluges, hurricanes, and earthquakes. In light of the Cathedral's condition, Arizala asked for the Crown's support to revitalize the building, requesting a

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they confirmed the cathedral should receive 1,000 pesos per year for ten years. *AGI, Filipinas* legajo 334, Libro 14, 107V-112R.

[95] Accompanying this letter was a cedula to Mexico, commanding the viceroy to continue to pay the annual 1,000-peso instalments, which he had failed to do over the previous years. *AGI, Filipinas* legajo 342, Libro 11, 31R-36R.

30,000-peso concession, which he suggested be funded by selling four titles in Nueva España.[96]

Archbishop Arizala's letters were not considered by the court of Madrid until 1751. By then, Arizala had ordered the walls of the old cathedral torn down and construction on the new building had begun. When the Audiencia objected to the archbishop's decision to rebuild the cathedral without the King's approval, the archbishop responded that the cathedral was not just a space for the clergy.[97] It was a temple for all to see, and therefore a ruined building was unacceptable to the faith and the colony. The symbolism of the cathedral, he felt, justified his efforts and spending.[98] So, despite the Audiencia's objections, Arizala began reconstruction of the Cathedral without oversight.

In 1753, Arizala received the King's approval to construct the new cathedral. He was ordered to cooperate with the Audiencia and to inform the King of his plans. That same year, he remitted two floor plans relating to the Cathedral.[99] The first showed the cathedral as it had stood until 1750 (Figure 2.4). The second showed the plan for the cathedral then under construction (Figure 2.7). However, no further efforts were made to include the Audiencia in the reconstruction effort. The cost of construction, as of 1753, appears to have been 30,000 pesos, and the Archbishop expected work to conclude in two more years at the cost of another 30,000 pesos. To finish the Cathedral, the *cabildo eclesiástico* petitioned the King for the 30,000 pesos necessary to complete construction. They requested this

[96] According to the archbishop, the islands lacked a professional architect and therefore a Jesuit with experience in architecture had the greatest expertise of anyone on the island. *AGI, Filipinas* legajo 292, Número 5.
[97] *Ibid,* 49V-51R.
[98] *Ibid,* 48R-49R.
[99] *AGI, Filipinas* legajo 335, Libro 16, 149R-152R and 158R-160V.

concession come from Nueva España since the failure of multiple galleons in the previous years had left the Philippine colony impoverished.[100]

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[100] *Ibid,* 58R-59R.

*Figure 2.7: "Mapa y diseño de la planta de la Santa Yglesia Cathedral de Manila, según se va construyendo al presente, aviendo comenzado el derribo de la antigua a los principios de enero de 1751, y sigue aún su construcción este de 1753 años". AGI, MP-Filipinas, Número 35BIS, 1.*
*"Map and design of the floor of the Holy Cathedral of Manila, as it is being constructed at present, having commenced the deconstruction of the old Cathedral at the start of January of 1751 and continued its construction to this year of 1753." Unlike Figure 2.4, this image possesses a scale. Notable additions to the structure included a dome in the center of the Nave, as well as the addition of a new chapel ("C2") and a more ornate entrance to the halls and living areas leading to the bell tower ("H"). Other additions are noted in the key (no translation provided here) that include new pillars to hold up the new dome and other such additions.*

The royal *fiscal* (fiscal manager or accountant) in Madrid, when he received the letters from 1753, was furious. Because the Archbishop had not provided a detailed account of the new cathedral's cost, the *fiscal* asked the King to reprimand the Audiencia for not managing the project. Given the poverty of the islands and other concerns, the King and his representatives were likewise furious that potentially unnecessary renovations to the Cathedral were being performed without the Crown's input.[101]

The Audiencia appears to have received the Crown's response in 1756 or 1757. In response to the Crown's chastisement, they promised to supervise construction and complete the Cathedral. By this point, the project had spiraled out of control. The archbishop's death in 1755 and the Audiencia's concerns for the building's stability had delayed construction. Furthermore, the loss of several galleons had deprived the islands of specie, preventing reconstruction from restarting. The cathedral remained in a half-finished state and especially susceptible to earthquakes and storms. For its part, the Audiencia insisted their negligence reflected deference. The *cedula* from 1751 had emphasized the importance of the Cathedral's repairs to the crown, and Archbishop Arizala had hired a famous and competent architect from the region (a Florentine who had performed services

[101] *Ibid,* 65R-65V and 371V-372V.

for the English in Southeast Asia).[102] To respect the Crown and the Archbishop, they had not exercised oversight.

The result was a fiasco. The unfinished project had consumed 120,000 pesos. The vast majority of this money came from alms and donations from the city's citizens. Official estimates stated that completing the main building would require 25,000 more pesos, plus 5,145 pesos to pay debts the *cabildo eclesiástico* took on during construction. The Audiencia concluded a letter sharing this bitter news with the King by insisting that, if additional royal concessions were not made, all the money spent would have been wasted.[103] The *cabildo eclesiástico* was more upfront, asking in an accompanying letter for 60,000 pesos.[104]

The King's reaction to the *cabildo's* staggering request is not included in the document. That same year (1757), the *Consejo de Indias* in Madrid did command the viceroy of New Spain to aid reconstruction using the annual salaries from vacant positions. The viceroy promised to send those salaries, along with the remainder of the King's concession from nearly two decades earlier.[105] The cathedral was ultimately finished and decorated in the subsequent years, at great cost to the city. However, soon after the cathedral's completion the British conquered Manila (1762-1764). During their sack of the city, the

[102] *AGI, Filipinas* legajo 185, Número 20, 1R-2R.
[103] *Ibid,* 5.
[104] *Ibid,* 101-103.
[105] The 1757 consulta states that, as of 1755, the city of Manila had spent 56,000 pesos on the cathedral, which brought the total amount spent on the cathedral to between 86,000 and 87,000 pesos. The author of the *consulta* assumed that, since 30,000 pesos were still available to the project and it was expected to require 22,000 to complete the main building, the project would only require some aid from Mexico (primarily to decorate the interior of the cathedral). *AGI, Filipinas* legajo 98, Número 15.

British removed the Cathedral's costly new ornamentation and silver.[106] The building itself would survive the sack, though, only collapsing a century later in the earthquake of 1863.

This revitalization of the cathedral echoes its reconstruction in the seventeenth century because the symbolic value of the building justified petitions for royal concessions. The first concession awarded by the Crown was determined based on precedent and was to come from Mexico to avoid delays that plagued previous efforts, but this novel approach failed. Instead, as in the past, the majority of funding for reconstruction came from residents' alms and donations.

The revitalization, however, was made unique by the archbishop's actions and the cost of the project. The archbishop did not wait for the Crown to approve his plans, but still requested royal concessions. In addition, the concessions he requested were massive. To justify his request, the archbishop argued the cathedral was the temple of the Catholic faith for the islands and therefore needed to be sumptuous, imposing, and splendid. Despite feeling the Crown should support his actions, the archbishop seemed loath to cooperate with the Audiencia, the King's chosen representatives. He seemed to feel that, as a representative of the faith, he was entitled to the Crown's support and trust.

Another key difference between the construction and the revitalization of Poblete's Cathedral was the role of natural hazards. The physical impact of specific natural hazards in this series of events was not dramatic. Storms, earthquakes, and time had damaged the ceiling of the cathedral, but the archbishop's ambitions rather than a specific disaster prompted reconstruction. However, in a sense, Arizala's decision to rebuild the cathedral was prompted by the San Andrés earthquake of 1645. Arizala rejected Poblete's cathedral,

[106] The previously cited symposium on the history of the Manila Cathedral states that the British took 31,000 pesos in silver from the building, though it does not corroborate this assertion. Antonio G. Manuud et al, "The Manila Cathedral, 1571-1958: A Symposium," 108.

especially its nave, because the building was too humble. The most prominent addition to the cathedral during the revitalization was a dome, which was built over the altar (see Figure 6). During his ill-fated revitalization, Archbishop Arizala wanted to recreate the cathedral, to make it a magnificent building that would inspire faith and reverence in the colony. Nearly a century after the disaster, he was rejecting and replacing the reinforced, squat cathedral the colony managed to build after the San Andrés earthquake.[107]

## The Immediate Economic Impact of Natural Hazards

Since *traslados* and correspondence offer so many details on colonial finance and infrastructure, they can offer insight on the immediate economic impact of natural hazards as well. Any assessment will be fragmentary, even more so than discussions of the physical impact of natural hazards because of the source material.[108] However, information gleamed from buildings, *Contaduría* records, and scattered letters detailing debt, provide a sufficient understanding of the colony's finances to see how repeated disasters hampered the colony's reconstruction and development.

[107] This episode in the cathedral's history evidences a rupture that was absent in the seventeenth century. The Crown was unwilling to spend the amounts the archbishop requested on a building that, while symbolic of the colony, was not vital to its military or economic well-being. Yet, based on the letters from the *cabildo eclesiástico,* the administrators of the cathedral were unrepentant and unashamed to ask for large concessions without submitting to oversight from administrators. The episode therefore shows a rift between the clergy's expectations, the Crown's priorities, and the reality of the colony.

[108] Data and information on labor, demographics, income, and expenditures in Luzon is scattered across several archives, or was destroyed during the British occupation of Manila. Further, surviving documents do not provide all the information modern financial records would. For instance, the *Contaduría* records for the colony did not consistently record the colony's debts until the 1690s, when Governor Fausto Cruzat prioritized paying outstanding dues. *AGI, Contaduría* legajo 1247.

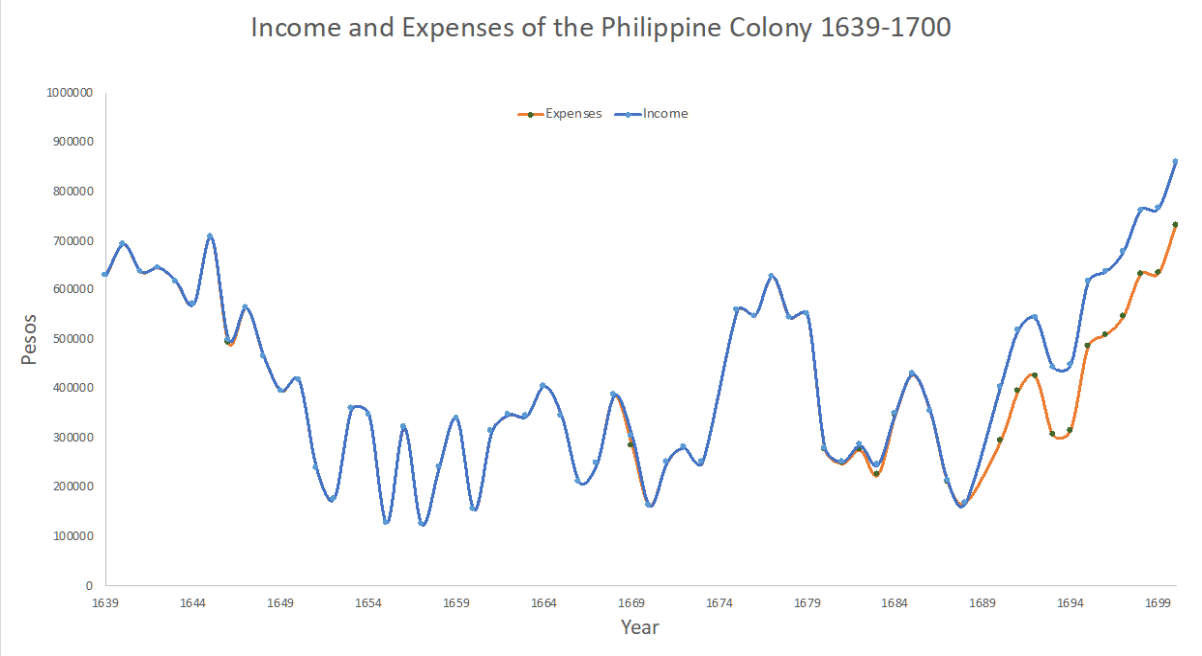


*Figure 2.8: The Income and Expenses of the Royal Treasury of the Philippines for 1639-1700. The income from all sources and the total expenses for the Philippine colonial government for the years 1639-1673, 1675-1688, and 1689-1700. Sourced from AGI, Contaduría* legajos 1219-1253.

As previously discussed, records from the *Contaduría* show that the income of the colony was inconsistent during the latter half of the seventeenth century. Variation on an annual scale in the seventeenth century was dependent on the size of the *situado* (stipend) sent from New Spain, while variation over decades was a product of the silver trade.[109] In addition, for the period of diminished income stretching from approximately 1640 until 1690, the amount the colonial government spent was nearly always within 1,000 pesos of its annual earnings. The colonial government, based on the records available from the *Contaduría,* was unable to set aside money each year for dealing with crises or disruption from natural hazards.

Compounding the colonial administration's failure to save was a growing debt. The *Contaduría* documents did not discuss the colonial debt between 1640 and 1690, which

[109] Dennis Flynn and Arturo Giraldez, "Cycles of Silver," 392 and Luis Alonso, "Financing the Empire," 70-72.

likely grew during years when earthquakes or typhoons damaged Luzon or its vessels. Scattered letters, however, unerringly portray the Philippines as perilously indebted. Letters from 1655-1660 state that the colony's accumulated debt approached and then exceeded 1,000,000 pesos (more than 300% of the colony's average income in that period), 150,000 pesos of which was owed to indigenous laborers.[110] This unpaid debt ultimately helped trigger the indigenous revolts of 1660, the largest and—to the Spanish—most threatening revolts of that century.[111]

Rampant debt and the failure to set aside money imply, as have accounts of buildings, a colony suffering from severe financial strain during the latter half of the seventeenth century. The funds the colonial administration required to repair buildings or to respond to prominent natural hazards—or more mundane processes like decay, erosion, and sedimentation—were not available in the latter half of the seventeenth century. Nor were the costs of repairing such buildings inconsequential. Table 2.3 shows the costs of building repairs undertaken between 1645 and 1754. Given the colony was deeply indebted and experiencing strain, maintaining the Castillos, storehouses, and churches were beyond its abilities. A categorized account of the colony's most frequent expenses between 1639 and 1700 confirms that—compared to expenses like war, maintenance of the fleet, and various stipends—reconstruction only accounted for a small fraction of expenses; for most years, less than five percent of the colony's funds were spent on construction (see Figure 2.9).

[110] See *AGI, Filipinas* legajo 22, Rollo 7, Número 28 and *AGI, Filipinas* legajo 22, Rollo 9, Número 50.
[111] The debt of the colony is not mentioned again in sources utilized by this dissertation until the 1690s, during the tenure of Fausto Cruzat. Accounts of the colony's debt was included in the *Contaduría* records at that time, likely to demonstrate that the new colonial government was successfully paying off its debt. See *AGI, Contaduría* legajo 1247-1253.

| Building | Start of Construction (Year) | End of Construction (Year) | Total Cost of Construction (Pesos) | Notes |
|---|---|---|---|---|
| Cathedral of Manila (Poblete Cathedral) | 1657 | ? (1705-1710) | 65,000-80,000 | Estimates discussed in appropriate subsection. Crown paid 26,000 pesos. |
| Castillo de Santiago | 1715 | 1728 | 29,393 | |
| Castillo de San Felipe | ? (1688-1692) | 1695 | 17,833 | Unclear from documents if this amount included ~1,000 pesos spent by Abella-Fuertes (Interim Governor) before 1692. |
| Port of Cavite | 1704 | 1708 | 60,000 | Taxed from merchants according to Governor Zabalburu's letters (no confirmation from *traslado*). |
| Royal Storehouses (Initial Construction) | 1700 | 1725 | 36,500 | |
| Royal Storehouses (Restoration) | 1733 | 1740 | 12,300 | Financed by a 30,000-peso donation from the merchants of Manila. |
| Cathedral of Manila (Restoration) | 1751 | ? (1760-1762) | 120,000 spent as of 1757, another 60,000 pesos requested for completion. | Crown paid 10,000 pesos through New Spain |

*Table 2.3: Summation of costs of reconstruction of various buildings in Manila following their destruction by natural hazards or decay over time.*

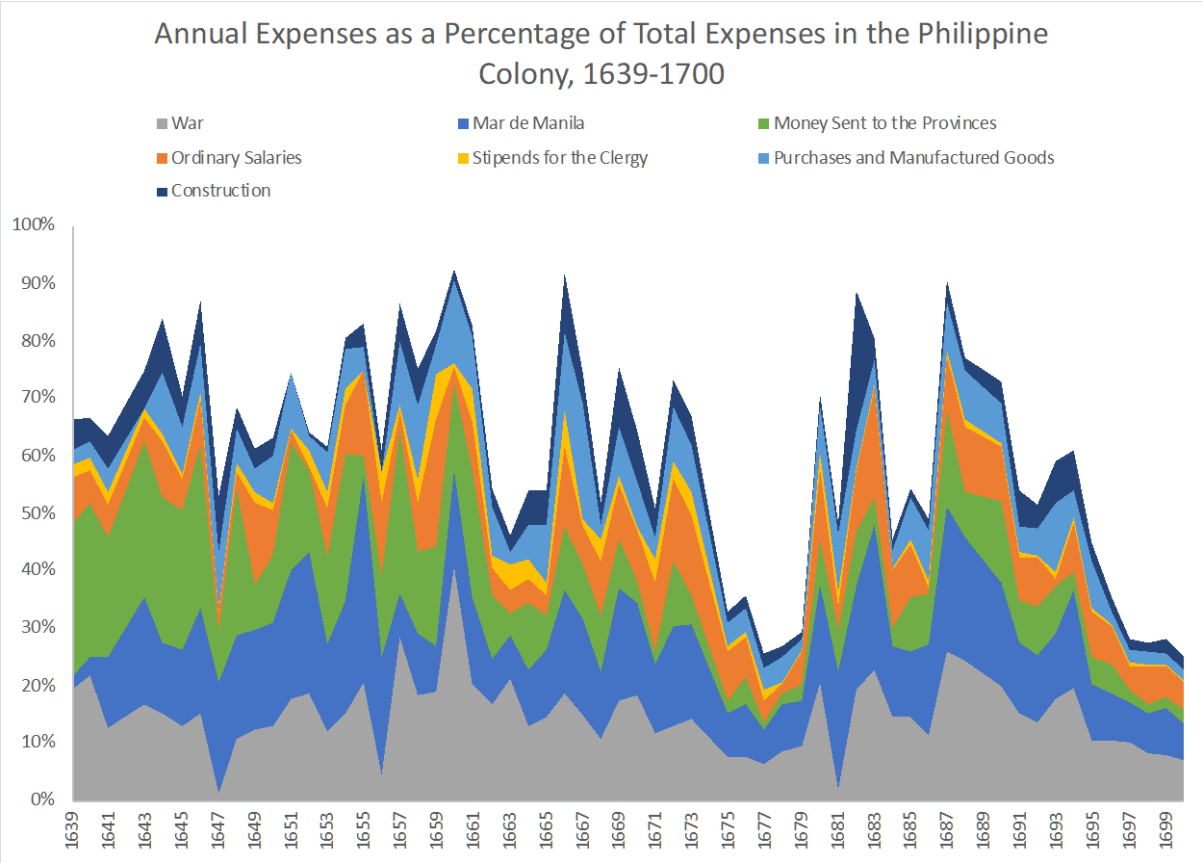


*Figure 2.9: The Philippine Colony's Annual Expenses as a Percentage of Total Annual Expenses, 1639-1700. As categories in Contaduría records varied in name year-to-year, the categories offered above are simplified or, in the case of Construction, represent a composite of several categories including "Royal Construction" and "Royal Wages." The category "Mar de Manila" refers to maintaining the fleet of Manila, while the category "Purchases or Manufactured Goods" refers to items purchased for trade. Sourced from AGI, Contaduría* legajos 1219-1253.

Of course, the *Contaduría* records only account for the income and expenses of the Philippine colonial government; treasury records for the city of Manila and the provinces, as well as private sources of wealth, are not accounted for in Figures 7 and 8. Because the British destroyed local records during their occupation of Manila (1762-1764), most information on the early city's finances was lost. What does survive concerning Manila is reported in the monograph *El Cabildo Secular* (City Council of Manila). According to *El Cabildo Secular,* one surviving document in the *Archivo General de Indias* in Seville details the city's expenditures between 1592-1691. It lists, among other expenses, "the cleaning of

the streets from the stone, lime, and tiles of the ruins from the earthquake that occurred, and the pulling down of walls threatening collapse…".[112] Because the report references a single earthquake, it is likely referring to the San Andrés earthquake of 1645. Repairs performed in response to that earthquake cost approximately 130,024 pesos. This expense represented 20.30% of the Cabildo's total expenditures (approximately 640,494 pesos total) for a one-hundred-year period.[113]

Any quantification of the financial impact of natural hazards in the provinces or on private money, however, is not possible through the *Contaduría* records or other sources accessed by this dissertation. The recorded expenses of the colonial administration demonstrate that as income decreased, the amount of money sent to the provinces decreased to less than 5% of annual expenses (see Figure 2.9). Sporadic letters from bishops in Nueva Segovia and Nueva Cáceres further imply financial scarcity in the provinces, but permit nothing beyond qualitative statements. As to private money, the loss or failure of galleons would have severely impacted merchants. In addition to all the galleons lost to storms between 1645 and 1700 (see Tables 2.1 and 2.2), several failed owing to administrative disputes, piracy, or other misfortunes. Based on the information available, then, the amount of private wealth passing through Manila was highly variable and much reduced during the latter half of the seventeenth century.

Impactful natural hazards of course continued during the first half of the eighteenth century, though the number of severe and damaging earthquakes recorded was much reduced. Unfortunately, this dissertation does not have consistent data for the years

[112] Luis Merino, O.S.A., *El Cabildo Secular: Aspectos Fundacionales y Administrativos, Volumen 1* (Manila: The Intramuros Administration, 1983), 243. Information within is a summary of Legajo 62 of the Filipinas collection in the AGI.
[113] Over that same period, the Cabildo's total income was 659,321 pesos. See *Ibid,* 243.

following 1700.[114] For the years this dissertation was able to examine, construction accounted for three-to-six percent of annual expenditures by the colonial administration, as it had in the previous half-century.[115] The Cabildo Secular in this same period (1700-1754) reconstructed the great bridge across the Pasig River (destroyed in 1645 and never rebuilt) and the mayoral offices while cleaning the shore of the Pasig river. The cost of the bridge's repair, the only project directly linked to a disaster, is not recorded.[116] Otherwise, the Cabildo Secular of Manila had little to do with natural hazards.

Speaking more generally of the colonial economy, Luis Alonso argues (and Figures 2.2 and 2.8 concur) that the colony's fiscal health improved during the governorship of Fausto Cruzat. Alonso attributes much of the visible improvement to Cruzat's reforms to tax and debt collection (as well as reforms to how information was recorded by the colonial treasury). Under Cruzat, the *situado* from Mexico ceased to be the colony's primary source of income. Instead, the *situado* supplemented income gathered from taxes on trade goods brought from Asia as well as tribute taxes.[117] However, after 1720 as the silver exchange declined, colonial income slowly decreased. By the 1740s, the colony's income was erratic year-to-year and severely reduced, paralleling conditions in the mid-seventeenth century. As the income from foreign duties and taxes decreased, the *situado* from Mexico again became the colony's primary (unreliable) source of income.[118] It is likely that, as the colony's income decreased, resilience to the physical and economic disruption caused by natural hazards would have decreased.

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[114] While *Contaduría* records are available for this period at the Archivo General de Indias, they are more difficult to access.
[115] *AGI, Contaduría* legajo 1256, 1259B, 1263B.
[116] Luis Merino, *El Cabildo Secular,* 199.
[117] Luis Alonso, "Financing the Empire," 75.
[118] *Ibid,* 70 and 75-77.

From the information presented for the period from 1645 to 1754, quantifying the financial impact of natural hazards on Luzon is not possible, even for the period between 1645 and 1700. However, from the data presented, several qualitative statements can be made. The first is that the colony did not have the spare capital necessary to deal with sporadic disruptions like earthquakes or typhoons. Furthermore, the physical impact of each natural hazard further impoverished an already poor colony. The San Andrés earthquake in particular was especially impactful, both for the colonial administration and for the City of Manila, which spent a fifth of the funds it acquired in a century repairing the damage caused. Likewise, typhoons that sank galleons on route to Manila from Acapulco were calamitous and deeply impoverishing for the colony. The loss of a galleon in 1646, in particular, almost certainly amplified the effects of the San Andrés earthquake, leaving the colony destitute on the cusp of the Dutch invasion (*Batallas de la Naval*). The loss of two more galleons from Acapulco within the decade surely compounded the colony's poverty.

Second, given the lack of available funds, the colony's slow reconstruction of various structures should be understood as an adaptation. The construction of royal projects, as demonstrated by Figure 2.9, was a vital but minor expense compared to war, maintaining the fleet, or paying the stipends and salaries of various colonial officials and clergymen. The cost of repairing or constructing buildings like the Castillos or Royal Storehouses (or of subsidizing the construction of a Cathedral) far exceeded what the colony could afford. Distributing the cost of reconstruction over several years or a decade permitted colonial administrators to pay for repairs without neglecting other essential expenses.

Third, physically and financially impactful natural hazards contributed to, rather than defined, ongoing economic trends and developments in the Philippine colony in this period. Earthquakes and especially typhoons could affect income or expenses in a given year, but

the colony's reduced income and financial strain were also the result of ongoing geopolitical and economic developments. Events like the San Andrés earthquake or a single typhoon did not cause trade with China to decrease. Rather natural hazards amplified and exacerbated the poverty of the colony.

Lastly, as said earlier in this chapter, the most significant way a natural hazard could impact colonial finances was for a typhoon to sink a galleon, especially one bound from Acapulco carrying the *situado*. However, the loss of any galleon deeply impacted the private wealth of Manila, which—their role in repairs to the Port of Cavite and the Royal Storehouses demonstrate—was substantial. The loss of a galleon could ruin individual merchants, and the loss of several in quick succession rendered the colonial administration and merchants alike destitute. Simultaneously, replacing a galleon was a costly endeavor, requiring the marshaling of resources and laborers. Therefore, the economic impact of typhoons that sank or damaged a galleon was ruinous.

To conclude the physical and financial impact of Luzon's powerful and frequent natural hazards between 1645 and 1754 varied with each event, but cumulatively these events were extremely disruptive. However, the disruptions caused by natural hazards offered frequent opportunities for the colonial administration to adapt. Responses to physical damage grew more efficient despite the colonial administration operating with limited funds and resources. Equally of interest, damage had the potential to spark conflict between administrators, the clergy, and the Crown. How each of these institutions adapted to Luzon's natural hazards is explored in detail in the next chapter.

# Chapter 3: Natural Hazards' Impact on Governing Institutions

Considering Luzon's many hazards as episodic is beneficial, but only to a point. This approach renders the physical and financial damage inflicted with each event apparent. However, the full economic and cultural impact of disasters manifests slowly, often in the wake of several disruptions or repeated natural hazards. Frequent rather than singular disruption—or the constant threat of it—causes communal adaptation. Seismic and meteorological hazards, as regularly occurring features of the environment of Luzon, exert such pressure.[1] Therefore, assessing the total impact of natural hazards in Luzon requires these individual events be considered as a process that consistently exerts pressure on communities, and the institutions that govern them, to adapt.[2]

This chapter explores how hazards, as a process, affected the colonial institutions responsible for governing Luzon. Over the one-hundred-nine-year period examined by this dissertation, three pillars of the colonial government routinely responded to natural hazards: the colonial administration, the regular clergy, and the Inquisition. The colonial administrators based in Manila, Mexico City, and Madrid focused on repairing and managing damage from all manner of disruptions, including natural hazards. Simultaneously, the priesthood, especially the Regulars, produced and celebrated *fiestas* commemorating God's

[1] Although he does not use the term process (this term is borrowed from Franz Mauelshagen, as cited below), Bankoff does argue the Filipino past can be studied through the "lens" of hazard and asking how communities manage "living with threat on a daily basis." Bankoff thus argues the threat of frequent hazards allows them to be treated as a constant pressure on communities. Greg Bankoff, "Hazardousness of Place: A New Comparative Approach to the Filipino Past." *Philippine Studies Historical and Ethnographic Viewpoints,* 64, No. 3-4 (2016): 351.

[2] Franz Mauelshagen, "Learning from Nature-Induced Disasters: Theoretical Considerations and Case Studies from Western Europe," in *Natural Disasters, Cultural Responses: Case Studies toward a Global Environmental History,* ed. Christof Mauch and Christian Pfister (Plymouth, U.K.: Lexington Books, 2009), 41,

mercy during natural hazards. Lastly, the Inquisition emphasized preventing natural hazards by punishing deviants believed responsible for collective misfortunes like natural disasters. These reactions, formulated independently, were characteristic of their respective institutions but functioned in concert with one another. Between 1645 and 1754, no transformative moments radically altered how these institutions responded to natural hazards. Instead, a series of small adaptations and accommodations occurred because of the pressure exerted by frequent hazards. As a gradual process, natural hazards thus promoted the development of an idiosyncratic form of Spanish colonialism in Luzon, "Filipinizing" colonial institutions.

## Background: Conceiving the Cause of Calamity

Before discussing institutions, an important issue must be addressed. To speak of natural hazards between 1645 and 1754 is anachronistic. The present-day distinction between natural and artificial disasters did not exist in the mid- and late-seventeenth century. Contemporary manuscripts instead hint at the existence of a separate dichotomy between the natural and supernatural origins of calamities, which originated in the belief that human sin and wickedness could provoke divine punishment in the form of plagues and maladies. This rationalization construed major disruptions as symptomatic of a failure to uphold Catholicism. Disasters and calamities reflected a communal lapse in morality, and therefore the failure of Spanish institutions—the manifestations of the Catholic Empire—to enforce good living. Thus, responses to natural hazards and larger disruptions unfolded without regard to whether a disaster's origins were natural or artificial (i.e. human).

Spectacular disasters—though not necessarily all disasters—reflected *Ira Dei,* the wrath of God.[3]

Illustrative of seventeenth-century responses to disaster in Luzon was a letter from Governor Curucelaegui to the King dated the 29th of May 1688. The letter is a summary of affairs in the colony, the type of update that accompanied the annual dispatch from Manila.[4] The letter describes a colony on the verge of collapse.[5] The failure of the galleons and their trade for two years had rendered the colony destitute and severed communications with the Crown. In his summary of recent developments, Governor Curucelaegui also informed the King that the Archbishop, owing to a feud with the previous governor, remained in exile. Meanwhile, four pirate frigates continued to harass the coasts and the Chinese had revolted, burning the *Parian*.[6] Already faced with several crises, the governor continued, "The events, Sir, on the Earth have corresponded with those of the sea with the distinct plagues that have been experienced in this city and these islands, such as repeated sicknesses, strong tremors [earthquakes], and a great abundance of locusts…".[7] The locusts, which persisted through the year, made rice expensive and scarce while promoting epidemics, which had felled the senior member of the Audiencia (1686) and a *licenciado* (1688).[8]

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[3] For more on *Ira Dei* in a seventeenth century Spanish-colonial setting, see Bernard Lavallé, "Miedos Terrenales, angustias escatológicas y pánicos en tiempos de terremotos a comienzas del siglo XVII en el Perú," in *Una historia de los usos del miedo,* ed. Pilar Gonzalbo Aizpuru, Anne Staples, and Valentina Torres Septién (Mexico City: El Colegio de México y Universidad Iberoamericano, 2009), 108-109, 112. Lavallé cites Jean Delameau, a historian of ideas, when describing *Ira Dei*. Delameau's works, especially his studies of guilt and fear, are discussed in the subsequent chapter of this dissertation.

[4] *AGI, Filipinas* legajo 13, Rollo 1, Número 7.

[5] The provided summary of the letter's contents reads, "[The Governor] relates to the King the different negative occurrences that have befallen those islands, and of their need and dearth, which continues." *Ibid,* 1R.

[6] The governor mentions that this undermined his plan to fund vital repairs to the Port of Cavite by taxing the Chinese for the right to gamble during their New Years Festival (discussed in chapter 2). *Ibid,* 1V-2R.

[7] *Ibid,* 2V.

[8] The loss of the senior member of the Audiencia, the appointed successor to the Governor in case of his death, generated special worry in the colony. Just over a decade prior, the arrest of Governor Salcedo by the

The governor's proposed solution to these problems is, to the modern observer, inconceivable. First and foremost, he argued the city must reconcile with the Archbishop.[9] The governor's rationale for this solution is offered in the letter's introduction: "…It [the colony's perilous condition] is very understandable because the multiplicity of cases and circumstances that are aggregated [against us] are well known and such that we…understand well enough the just rage of God for our sins".[10] Thus, to the governor, the multiple crises confronting the Spanish colony were all the product of God's "just rage" at the exile of the Archbishop. Nor did the governor's letter distinguish between natural crises (earthquakes and locusts) and artificial ones (such as pirates). They were all considered deific, the products of God's Wrath, and therefore the solution to all these crises was to appease God.

This example is not intended to explore the difference between a deific and a natural event, or when such thinking became outdated.[11] Rather, the governor's letter is intended to demonstrate that natural hazards were not differentiated from other disruptions during the late-seventeenth century. Earthquakes, lost battles, and calamities (*calamidades*) were believed to have the same origin: divine displeasure at human actions. This rationalization of disaster legitimized the now incomprehensible role of spiritual institutions (i.e. the Inquisition or Mendicant Orders) in responding to temporal disruption. If natural hazards stemmed from God and His disdain for immorality, the clergy as the moral arm of the

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Inquisition created a succession crisis between two *oidors* claiming to be the senior member of the Audiencia. Citing this artificial crisis, and contemporary contempt towards his own tenure, the Governor informs the King that he has chosen a successor to prevent another crisis. *Ibid* 3R.

[9] The Archbishop in this period was Felipe Pardo, O.S.M. *Ibid,* 3V.

[10] *Ibid,* 1R.

[11] For more on the history of rationalizations of natural disasters in Spain during the Enlightenment, see Agustín Udías, "Earthquakes as God's Punishment in 17th- and 18th-century Spain," in *Geology and Religion: A History of Harmony and Hostility,* ed. Martina Köhbl-Ebert (London: The Geological Society of London, 2009), 41 (*Ira Dei* and distinguishing between popular and scholarly literature on calamity), 44 and 46.

Spanish Empire would be vital to any response. Furthermore, concepts foreign to modern disaster studies, such as the prevention of natural hazards through public displays of piety, would become valid adaptations to severe or chronic disruptions.

The effects of this mentality on the colonial administrators, officials whose power was strictly temporal, would be less apparent. Except in extraordinary situations like the exile of the Archbishop described by Governor Curucelaegui, the colonial administrators were not responsible for discerning the moral cause or the proper recourse to sinfulness. Instead, their task was to maintain the King's colony and provide the Catholic clergy with the means and stability necessary to maintain a Catholic Kingdom.

## The Crown and the Colonial Administration

### Building a Precedent for Unprecedented Misery

Colonial administrators with authority over the Philippine colony included the Governor-General, the Audiencia, the *maestros de campo,* and the *oficiales reales* residing in the archipelago as well as the Viceroy of Nueva España in Mexico City and the Consejo de Indias in Madrid.[12] Atop this entire bureaucracy was the King of Spain. The King—or rather, the Crown—was the source of all authority in Spain's colonies because the Crown appointed all prominent colonial administrators. These administrators were thus representatives of the Crown, legitimized and empowered through their connection to its authority.

The *traslados* and correspondence examined in Chapter 2 offers multiple examples of how colonial administrators responded to natural hazards. In such correspondence, if the

[12] The *maestros de campo* (lit. masters of the field) were commanders of armed forces in the colony. The *oficiales reales* (royal officials) were responsible for monitoring the colony's finances. The Consejo de Indias (Council of the Indies) was a council that served in Madrid and directly advised the Crown on all affairs relating to the Spanish colonies. See Glossary.

damage from a disruptive event exceeded the means of local officials to cope, the Governor-General, the Audiencia, and the royal officials petitioned the King and his appointed *Consejo de Indias* (Council of the Indies) for aid.[13] The King, as the center of all military and economic authority, was envisioned as a magnanimous monarch, willing to aid his aggrieved and suffering subjects as their sovereign and father.[14] This relationship between ruled and ruler fostered responses to natural hazards based on convincing the King to intercede, when necessary, as a benevolent, paternal, and Catholic monarch.[15] An awarded concession was—fittingly given the King's imagined status—called a *merced*.[16]

Concessions for the Philippine colony were most often sought through short letters, whose claims were substantiated when possible by *traslados* containing *reconocimientos* (surveys). These short letters were concise and plaintive. They quickly established what was damaged or threatened by a natural hazard before petitioning for aid. When arguing for a new concession, these letters commonly employed one of two tactics. The first was to demonstrate the extreme, even unprecedented suffering endured by the colony in the wake of a disaster. The other was to cite precedent, arguing concessions for previous repairs justified new concessions to address contemporary disruptions. Predictably, administrators cited precedent more frequently in eighteenth century documents, reflecting the colony's increased experience with Luzon's environment.

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[13] A body of appointed officials in Madrid, first convened by Carlos I, to govern Spanish territories in the Americas and the Philippines. See Glossary.

[14] J.H. Elliot wrote extensively on the role of the King and his image in uniting the Spanish colonies (or, to use his preferred term, kingdoms). See J.H. Elliott, *Empires of the Atlantic World*: *Britain and Spain in America, 1492-1830* (New Haven: Yale, 2006), 122, 125-129. See also *Spain, Europe, and the Wider World: 1500-1800* (New Haven: Yale, 2009) and the introductory chapter in *Spain, Europe, and the Atlantic World: Essays in Honour of John H. Elliott,* ed. Richard L. Kagan and Geoffrey Parker (Cambridge: Cambridge, 1995).

[15] Stuart B. Schwartz, *Sea of Storms: A History of Hurricanes in the Greater Caribbean from Columbus to Katrina* (Princeton: Princeton University, 2015), 60-63.

[16] *Merced* translates directly to mercy, a word that implies a power imbalance between the one granting or conceding mercy and the one receiving mercy. The receiver has less or no power, and questions of whether mercy is appropriate or deserved inevitably arise.

An example of a petition for aid citing unprecedented suffering is a letter composed by the *oficiales reales,* dated 12 July 1659. The letter states the colony was destitute and lacked specie, the result of limited silver arriving form Nueva España (the *situado*), tending to the damages and losses caused by earthquakes, and sending out fleets to repel unnamed enemies.[17] A consequence of this lack of specie was the royal treasury had no money to pay its accumulating debts to the *naturales* ("los miseros naturales"), which that year exceeded one-hundred-fifty-thousand pesos, an unprecedented situation.[18] Despite the failure of several galleons that decade due to storms (see Chapter 2), the letter explains that Filipino labor and tribute had continued to supply resources for expensive outposts in Zamboanga and Ternate.[19] Citing this great debt, the royal officials begged the King, as "father and natural lord" of the *naturales* to command the Viceroy of Nueva España to send a stipend of six hundred thousand pesos and not to delay the galleons as he had in the past.[20]

In their letter, the *oficiales reales* made three arguments to move the King to action. First, the letter communicates the impoverishment of the islands through the extraordinarily high debt owed to indigenous laborers. Second, the letter emphasizes the King's relationship to his subjects, as both father and "natural" or Christian Lord. As a Christian and as a Catholic King, he was twice obligated to shepherd and protect the

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[17] Three strong earthquakes had transpired between 1645 and 1659: the San Andrés earthquake of 1645 and two others in 1654 and 1658. See Chapter 2.

[18] *AGI, Filipinas* legajo *31*, Número 43*,* 2R; See also *AGI, Filipinas* legajo 22, Rollo 7, Número 28 and *AGI, legajo* 22, Rollo 9, Número 50.

[19] Zamboanga was an outlying *presidio* (fortress) on the western peninsula of Mindanao, the large southern island of the Philippines. Ternate (Terrenate in Spanish documents) refers to the largest of the five spice islands (the Moluccas), west of Sulawesi (Celebes). For more on Ternate and its role within the Moluccas, see Leonard Andaya, *The World of Maluku: Eastern Indonesia in the Early Modern Period* (Honolulu: University of Hawaii, 1993), 55.

[20] *AGI, Filipinas* legajo *31*, Número 43, 2R and 2V. This debt crisis would conflagrate into the general revolt of 1660 (Chapter 2) soon after, which proved among the greatest threats to Spanish sovereignty that century. See Renato Constantino, *The Philippines: A Past Revisited* (Quezon City: Tala Publishing, 1975), 90-93, 97. Also, see, *AGI*, *Filipinas legajo* 32, Número 2, 1R. Written in 1661, this letter details how Governor Manrique quelled the Pampangan revolt by promising to pay 14,000 pesos of the debt immediately.

Philippine *indios*, who in contrast are implied to be his children, unable to defend their own interests. Third, the letter provides the King with a potential solution: a stern reminder (almost a reprimand) to the Viceroy of New Spain commanding him to send the *situado* to the Philippines. The proposed solutions rely on a characterization of the King as both lord and father, an arbiter between sibling colonies with complete authority.[21]

A similar letter discussing unprecedented disruption was authored by the Audiencia in 1678. The letter lists problems besetting the islands: the death of several officials including Governor Manuel de León in 1677, the damage inflicted by an earthquake that same year, the failure of commerce in the galleons, and—reflecting the Audiencia's concerns—the lack of Europeans in the island.[22] The letter pairs damage to prominent buildings from the earthquake with the death of prominent figures to emphasize the state of the colony. The Audiencia concludes by begging the King to aid the colony by sending more Spaniards and ensuring commerce continues. Otherwise, the letter threatens, the colony "will arrive at the ultimate point of forfeiture."[23]

The letter, in its final plea to the King, is revealing not only of how Spanish elites perceived disruptions like natural disasters ("And if by our sins and incaution these provinces will come to be possessed by any of the other European nations that have so many fortresses and forces in this archipelago…"[24]) but also what the Philippines symbolized

[21] Although it is tangential to the arguments presented here, it is also worth considering how this letter discusses natural hazards. The letter cites many reasons for a lack of specie, but they include earthquakes and the loss of a galleon called the San Francisco Xavier in 1656 in the port of Borenga due to a typhoon. However, within a letter meant to motivate the King to redress a perilous situation, the physical phenomena of the earthquakes or storms are irrelevant. Instead, the damage they caused, damage that could have been caused by any number of disasters, is consequential. The hazards' ability to disrupt is its only quality. See *AGI, Filipinas* legajo *31*, Número 43.
[22] *AGI, Filipinas* legajo 23, Rollo 17, Número 53, 1R-1V. Complaints about the quality of people brought to the Philippines were common. One of the longer and more detailed invectives against the peoples populating Manila and Luzon can be found in *AGI, Filipinas* legajo 163, Número 22.
[23] *AGI*, *Filipinas* legajo 23, Rollo 17*,* Número 53, 2V.
[24] *Ibid,* 2V.

to the Crown. The Audiencia portrays the archipelago as a lone outpost surrounded by "barbarous nations", filled with pagans and Protestants, that defends the coasts of Peru and New Spain; without the Philippines, the letter contends those coasts would undoubtedly be at risk of invasion from powerful Dutch or English armadas.[25] For the Empire's and Catholicism's continued existence, the King must intercede. As King and as the Catholic Monarch, he is compelled to protect all his American and Philippine subjects and his faith from this unprecedented, existential threat.[26]

Lastly, exemplifying the King's role in disaster-response in the early eighteenth century are an irregular collection of letters (1721) from Governor Francisco de la Cuesta. De la Cuesta assembled testimony from twenty-two older citizens of Manila and its hinterlands, "with the motive of sharing with Your Majesty the miseries and calamities that are found by these islands and their residents…that can move Your Majesty (in your royal piety) to find in your Sovereign Providence that most proportionate to the remedy of these…continuing needs".[27] Following the governor's brief introduction, each testimony—delivered primarily by men of standing over forty years of age—recounts how a lack of specie created a famine in Manila. One complains that jewels worth five hundred pesos could not be sold for fifty, while another says that even if rice were available, no one possessed cash to purchase it.[28] Especially disheartening is the testimony of *Sargento Mayor* Don Dionicio de Echaverria, whose wife had passed away and whose children were dying of

[25] *Ibid,* 2V.
[26] As in the previous letter from the *oficiales reales*, natural hazards in this letter are defined by the damage and financial strain they caused. This is logical, since the King could not be expected to prevent or stop disasters. But the damage they and other disruptions caused were issues the Crown could address.
[27] *AGI, Filipinas* legajo 135, Número 5. This letter was composed at the behest of the *Fiscal* of Manila.
[28] *Ibid,* 4R, 5R.

starvation and sickness as well. Without specie in the islands, he could not afford to bury his family, nor could he sell their possessions to fund their funerals.[29]

Underlying each testimony was the assertion that this situation was unprecedented; older men could not recall such adversity.[30] The cause, according to several testimonies, was the lack of treasure and specie from Mexico.[31] The loss of galleons or a lack of treasure over several years had created an artificial crisis. Neither the citizens nor governor offered a solution to this scarcity, but their clear aim was to convince the King to offer aid, likely in the form of additional silver from Mexico. As in the previous examples, the clearly unprecedented (or, at the very least, extreme) suffering in Luzon was meant to move the King to pity because he was a pious Catholic monarch. As such, aid for his poor and miserable subjects was supposed to stem from his most Catholic and charitable person.[32]

As the colony gained experience with earthquakes, storms, and other hazards during the seventeenth century, these unprecedented situations became less common. Past experience, however, provided another rhetorical pathway to petition royal aid: precedent. An example comes from a series of letters involving the Hospital of San Juan de Dios, which administered care to Manila's populace. Following extensive damage to the edifice during the earthquake of 1677 (an example of unprecedented misery), it was awarded an *encomienda* of five hundred tributes per year for twenty years to facilitate repairs. When this initial concession, and multiple extensions, proved insufficient, the hospital petitioned to extend the concession.[33] The King, in consideration of his previous concession, chose to

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[29] *Ibid,* 7R.
[30] Andres de Castro, who was fifty and had resided in the Philippines for thirty years, argued he had never seen the land in such poverty. His statement was the strongest in the collection. *Ibid,* 3V.
[31] *Ibid,* 1V-3V.
[32] Stuart Schwartz observed a similar phenomenon in the Caribbean, where the *Cabildo Secular's* (local council's) response was supplemented by the Crown. See Schwartz, *Sea of Storms,* 62-63.
[33] *AGI, Filipinas* legajo 179, Número 21, 1R.

prolong the stipend for an additional decade.[34] The argument made for the additional concession was that the hospital remained vital to the city and could not function without continued aid from the Crown.[35] The argument, thus presented, was that the King as a Catholic Monarch had previously supported the hospital, and should continue to do so as its importance to the city had not diminished; past concessions justified continued concessions.

Precedent was also cited during the reconstruction of the Cathedral of Manila in the middle of the eighteenth century. When repairs began in the early 1740s, the archbishop successfully petitioned the King for a concession of ten thousand pesos, to be awarded over ten years at a rate of one thousand pesos per year from New Spain.[36] In a 1740 letter advising of his concession, the King provided a history of the Crown's previous aid to the cathedral. Following the 1645 earthquake (another instance of unprecedented misery), the crown had paid twenty-six-thousand pesos through similar concessions at the same rate of one thousand per annum.[37] Precedent in this situation both informed and justified the King's decision to offer aid and the amount to be given.

Thus, in both the seventeenth and eighteenth centuries, the King (and the Consejo de Indias) was informed of the damage caused by natural hazards, the hardship that resulted, and the threat of further damage if repairs were not enacted. In the mid- and late-seventeenth century, when Manila lay shattered by the 1645 San Andrés Earthquake and without robust trade, administrators tried to communicate the colony's plight by

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[34] *Ibid,* 1R. The stipend was first extended in 1705 for twenty years and then prolonged for another 6 years. It had expired in 1731. The King chose to award a ten-year extension in 1735. For more information, see *AGI, Filipinas* legajo 342, Libro 10, 97R-99R.

[35] Simultaneously, supporting the hospital was an opportunity for the King to display his charitable nature to his subjects.

[36] The archbishop's role in the colonial hierarchy was unique. The special role he and the clergy played is discussed in detail later in this chapter. However, in this instance, the Archbishop acts primarily as the administrator of a building with great symbolic importance for the Crown (the cathedral of Manila). See *AGI, Filipinas* legajo 295, Número 5.

[37] *AGI, Filipinas* legajo 334, Libro 14, 107V-112R.

emphasizing suffering and unpreparedness. The colony, it was argued, could not cope with such unexpectedly extreme and damaging—such unprecedented—hazards or disruptions.

Over time, instances of unmatched suffering grew rarer (though never extinct, as the collection of letters from Francisco de Cuesta indicates). As Manila and Spanish administrators continued to experience destructive earthquakes and storms, experienced administrators could cite previous examples of aid. Increasing reliance on precedence in the eighteenth demonstrates how, over time, Spanish colonial administrators became aware of the disruptive power of Luzon's environment. What a reliance on legal precedent indicates, then, is the memory of Spanish institutions, which came to comprehend and accept the potential of the environment to suddenly and traumatically disrupt.

**Communicating Misery with Authority**

The letters discussed so far worked to convince the King of the urgency of his aid. The *traslados* and other, longer documents that accompanied short letters demonstrated how the King's funds would be spent. The King, if he was to subsidize or pay the costs of repairs in full, required an authoritative report on the damaged building(s). Simultaneously, the contents of *traslados,* the *reconocimientos*, formalized petitions for money, and accounts on how royal concessions were spent, had to demonstrate the veracity of their requests. The distance between Manila and Madrid posed a challenge to any claims of authenticity. Therefore, to demonstrate the veracity and competence of their reports, colonial officials in Luzon emphasized their own authority while trying to convey their need to the King by visualizing the damage done to structures.

*Traslados* and *reconocimientos* took several steps to imbue their contents with authority. First and foremost, they adhered to established formats. Each section of a

*traslado* was dated and each action taken by an individual on a project was recorded and verified by an observer (often the appointed *escribano,* scribe). At the conclusion, the administrative council with jurisdiction—the Audiencia, the *oficiales reales,* or others—would swear to the truth of the *traslado*'s contents. Thus, the format of these documents required several observers to swear to their veracity, a strategy meant to prevent lying or conspiracy.

The weight or consequence of one's word was affected by the position one held within the colonial hierarchy. The King and his Consejo de Indias rested on the top. Beneath was the Governor-General, who the King's letters would describe as "my governor-general and representative."[38] The possessive title was both a reminder of where the governor's loyalty was owed—to the King—and conveyed his authority as the King's appointee. Beneath the governor was the Audiencia, with particular importance awarded to the senior member.[39] And subservient to the Audiencia were the *oficiales reales*, who were responsible for delegating specific tasks, appointing the heads of projects, and apportioning funds.[40]

During repairs, this hierarchy served to enact the King's will and protect the Empire's and Crown's interests. All local officials served the Governor-General and Audiencia, who were appointed by the King as physical representations of his power. Still, these representatives were not the King, and all were humans subject to greed, vices, and mistakes. Oaths and authority, while valuable tools for guaranteeing the veracity of a report, were not sufficient assurances. To best serve as extensions of the royal prerogative,

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[38] For verification of this trend in the secondary literature, see Elliott, *Empires of the Atlantic World,* 125-129.
[39] El oidor mayor.
[40] Lower on the hierarchy was the *Maestro de las obras reales*, who was the principal supervisor of royal projects and construction. Other essential positions in the colony included the *Maestro de Campo* and the *Castellano* (castellan).

these officials and the experts beneath them had to render visible, with authority, the condition of fortresses and colonies the King would never personally witness. From this need was born the emphasis on the experiential and on sight.

Visualization, as a rhetorical strategy, helped the King and his *consejo* conceive, and even experience, the repair process. A 1715 *reconocimiento* of the Castillo de Santiago, which had suffered decades of neglect (see Chapter 2) is an exceptional example of visualization. The *reconocimiento* starts at the *cañon de San Julian* (Saint Julian's cannon) on the *Baluarte de San Miguel* (San Miguel's Bulwark), offering that cannon's position relative to the bay of Manila and the rest of the fort.[41] From that cannon, the account circles the walls, proceeding gun by gun. Ultimately, the walls, towers, and cannons are all described with their positions given in sequence relative to that first gun, the sea, and the city where appropriate. Other significant portions of the fortress—the storehouses, castellano's house, and the soldiers' barracks among others—are also described according to their dimensions (primarily the width and length of their foundations).[42] The distance between each cannon, the divisions of the wall, and the irregularities of the Castillo are all reported as if the reader was walking along the wall during the *reconocimiento*. In other words, the document attempts to help its reader recreate the fortress, to see what an observer on site would see.

This recreation of the Castillo de Santiago is more detailed than most *reconocimientos*. However, its attempts to convey how the fortress appeared is representative. An earlier assessment of the Castillo de Santiago from Governor Manuel de Leon (1670s) located the walls and associated damages to the Castillo de Santiago relative to geographic landmarks and the city, as did the castellano of the time.[43] The document

[41] *AGI, Filipinas* legajo 171, Número 14.
[42] *Ibid*.
[43] *AGI*, *Filipinas* legajo 10, Rollo 1, Número 32.

tried to share the experience of the fort—how it looked, what surrounded it, and what was encountered within—through descriptions.

A potential flaw in this strategy of visualization was the observer's lack of knowledge. The witness was testifying to what they saw and understood, not necessarily what was true. During reconstruction of damaged buildings, ignorance could prevent an official from properly comprehending the damage and what repairs were needed. The observer's limitations, though, could be addressed through experts. During the repairs of the Castillo de San Felipe in Cavite following the 1688 earthquake, the King commanded both Governors Curucelaegui and Fausto Cruzat to rely on the expertise of the *castellanos* during repairs since neither had experience with warfare.[44] Both did so and testified to having personally accompanied these experts during their surveys of the damaged fortress. Both governors were therefore able to swear their statements were true and were in accord with the knowledge of experts, which made their reports (and oaths) more reliable.[45]

Documents from the eighteenth century still attempted to visualize damage to buildings, but employed novel strategies. Diagrams and tables especially appear to have enjoyed growing acceptance in the mid-eighteenth century. Governor Valdés y Tamón in the 1730s favored tables as a way to report the number of artillery, men, and supplies available or necessary for fortresses.[46] These, along with diagrams, were more succinct ways of sharing certain information on royal projects. Juan de Arechederra, the Interim Governor and bishop, remitted one such diagram in 1748 to the King when describing renovations to

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[44] *AGI, Filipinas* legajo 122, Número 17 and *AGI*, *Filipinas* legajo 14, Rollo 2, Número 16.
[45] See the second, untitled document in *AGI*, *Filipinas* legajo 14, Rollo 2, Número 16.
[46] *AGI*, *Filipinas* legajo 919, Documents within this legajo are unorganized at present. Also, see the report on fortifications by Fernando Valdés Tamón (1739) titled *Relación en que de orden de su Magestad Catholica (Dios le guarde) se declaraba las Plazas, Castillos, Fuerzas, y Presidios de las Provincias sugestas a su Real Dominio en las yslas Philipinas, con Delineación de sus Planos* in *BNE,* Mss. 19217.

the Audiencia chambers (See Figure 3.1, which includes a diagram of the new *Palacio Real* drawn to scale). Similarly, Archbishop Arizala shared an architect's floorplan for the new cathedral of Manila following a royal request in the 1750s (see Chapter 2).[47]

It is important not to overstate the changes taking place in the first half of the eighteenth century. Diagrams were used to convey information about Cavite as early as 1659.[48] Nor do the tables and figures submitted by Valdes y Tamón represent a wider pattern. Most reports authored or supervised by Arechederra, one of his successors, did not include tables.[49] Nonetheless, the frequency of tables and diagrams relating to Luzon rose in the eighteenth century. Arguably then, administrators were beginning to accept graphics as an alternative way to organize information, a different way of conveying what was seen that emphasized data or spatial relations over descriptive visualization.[50] However, as late as 1754, such organizational techniques were incipient rather than widespread.

[47] *AGI, MP-Filipinas,* Número 135.
[48] *AGI, MP-Filipinas,* Número 9.
[49] *AGI, Filipinas* legajo 449, Número 9; *AGI, Filipinas* legajo 449, Número 4; *AGI, Filipinas* legajo 448, Número 2; *AGI, Filipinas* legajo 454, Número 14; and *AGI, Filipinas* legajo 384, Número 58.
[50] Alfred Crosby, *The Measure of Reality: Quantification and Western Society, 1250-1600* (Cambridge: Cambridge University, 1997), 17, 19-21, 53-56, 58.

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*Figure 3.1: Scaled floorplan for the new Audiencia chambers and palacio real (royal palace) in Manila, remitted to the King in 1748 during the tenure of Juan de Arechederra.*[51]

It should also be noted that natural hazards did not prompt specific changes in discussions of damage. Rather, the ever-present need to effectively transmit information between the metropole and the colonial periphery motivated novel techniques for visualizing damage to buildings. Natural hazards, as one of many sources of damage, reliably provided instances to test the Imperial bureaucracy's ability to transmit information, making

[51] Reproduced from *AGI, Filipinas* legajo 455, Número 2. Page numbers were not provided within the document.

an indeterminable contribution, along with decay, war, and entropy, to refining the Crown's ability to understand its most distant possessions.[52]

Thus, visualization served as the organizing principle of colonial reports between 1645 and 1754, and these reports were imbued with authority by their adherence to a strict format and oaths from the King's appointed representatives. Through such reports, the King could "know" his fortresses, storehouses, walls, and the defining aspects of his far-flung empire without ever personally witnessing them. His selected representatives and their chosen experts would permit him to know his possessions and act to address their needs, either through his commands or the commands of his proxies. In conjunction with the previously discussed emphasis on the monarch's Catholic benevolence, visualization allowed the King to respond to the multiple challenges and threats facing his most distant colony. Specifically, it allowed him to act in an informed manner, directing his pious and charitable concessions and commands to where they would produce the greatest benefit.

**Regulars and Seculars: The Clergy as Colonial Administrators**

The Spanish Crown and all its administrators—particularly in the Philippines—existed to maintain an environment where Catholicism was freely worshipped and proselytized.[53]

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[52] Of course, it must be said that while these various methods of visualizing damage may have been effective, no adaptation employed by the Imperial bureaucracy in this period could shorten the distance between Manila and Madrid. Information, no matter how it was presented, was exchanged slowly between the two cities; the two-year commute between Manila and Madrid determined the flow rate of information. The inefficiency of the galleons was the rate-determining step, and any improvement in information sharing within reports—while it may have aided local administration—could not bypass that limitation. See Greg Bankoff, "Winds of Colonisation: The Meteorological Contours of Spain's Imperium in the Pacific 1521-1898," *Environment and History,* Vol. 12 (2006): 66, 70-71, and 73.

[53] After the conquest of the Americas, the Spanish Empire justified its existence and aggressions it committed against conquered peoples as necessary to protect the free practice of Catholicism. The colonization of the Philippines was defended as necessary to the propagation of the Catholic faith. The war of conquest was therefore a "Just War." This concept of Just War, put forward by Francisco de Vitoria, rationalized conquest as an unsavoury but necessary act. See John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses* (Madison: University of Wisconsin, 1967), 4 and 7-10.

The governor and the colony he presided over belonged to the King, but the Archbishop and other figures within the Church held a spiritual authority beyond the King's temporal sovereignty. The archbishop in particular was a singular figure in the Philippines. He was not the King's archbishop, but rather the "most venerable" or "holy" archbishop of Manila.[54]

The separation between the temporal and the spiritual was complicated, though, by the Crown's unique control over clerical appointments in the Spanish colonies (*el patronato real*).[55] To some extent, the priesthood in the Spanish colonies was subject to the temporal authority (and papally recognized spiritual authority) of the Crown. However, the ability of the bishops to censure the King's representatives is indicative of how their spiritual (and therefore moral) authority could challenge and exert influence over administrators.[56] The relationship between the Crown and the Church's representatives was therefore an uneasy partnership.[57] The clergy were appointed figures within the Spanish hierarchy, but simultaneously maintained loyalty to a higher power.[58]

The clergy, however, was not homogenous. Key divisions existed, which played out in Luzon's politics, in its governance, and during responses to natural hazards. Few were as

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[54] Likewise, the bishops were not the King's bishops, though they did not possess the same reverent appellations as the archbishop. In contrast, a governor-general in the Philippines was referred to as "My Governor-General." For an example of the appellations attached to the archbishop, see *AGI*, *Filipinas* legajo 335, Libro 16, 158R-160V.

[55] *El patronato real* (the royal patronage) refers to a policy negotiated between Madrid and Rome that permitted the Spanish Crown to appoint church officials within Spanish colonies. In exchange for this power, the Spanish Crown was expected to fund the clergy. See Nicholas P. Cushner, S.J., *Spain in the Philippines* (Quezon City: Ateneo de Manila, 1971), 74.

[56] One bishop went so far as to insinuate Governor Fausto Cruzat was an agent of Satan for attempting to reduce financial support to the clergy in the Philippines. *AGI*, *Filipinas* legajo 86, Número 86.

[57] The terms and laws governing the Crown-Clergy partnership were recorded in the *Recopilación de las Indias*.

[58] Truly indicative of the intertwined nature of the secular clergy and the Crown was the chain of succession for the governor-general's position in the eighteenth century. As previously discussed in the example of Juan de Arechederra, in the event of the governor-general's premature death, his appointed successor was the archbishop of Manila. Failing that, the bishops of Cebu, Nueva Segovia, and Nueva Caceres were to succeed in that order. As a result, the members of the clergy with the greatest moral and spiritual authority were one-step removed from temporal and military power as well. This is how Juan de Arechederra ascended to the governorship. Número 39, *Filipinas legajo* 384, *AGI*; Número 57, *Filipinas legajo* 384, *AGI*; and Número 58, *Filipinas legajo* 384, *AGI*.

important as the distinction between the secular and regular clergy (*seculares* and *regulares*). The regular clergy were obligated to follow the vows and lifestyle of their chosen religious order and remain loyal to it, while the secular clergy were administrators expected to operate independently from the mendicant orders and maintain order between them. Members of the regular clergy were scattered throughout Luzon as missionaries, while local administrators were concentrated in provincial capitals located near Manila. The bishops and archbishop, along with the *cabildo eclesiástico* (Ecclesiastic Council), the *comisarios* of the Inquisition, and others appointed to administrative posts for the colony formed the secular clergy of Luzon. As administrators, the majority of the secular clergy was based in Manila, with a few members such as bishops positioned in regional capitals like Nueva Segovia and Nueva Cáceres.

In the Philippines, the secular clergy never established full dominance over the regular clergy.[59] Five mendicant orders maintained a strong and constant presence in the archipelago between 1645 and 1754: the Augustinians, Dominicans, Franciscans, Jesuits, and Augustinian Recollects. Each order had a provincial capital near Luzon, and each of their *provincias* was composed of several territories scattered throughout the islands. The Recollects and Jesuits were primarily responsible for Mindanao and the Visayas respectively and had minimal jurisdiction in Luzon. The Franciscan province of San Gregorio comprised much of Southern Luzon, including the winding southern peninsula (the Nueva Cáceres bishopric). The Augustinian Province of Santisimo Nombre de Jesús included most of central Luzon, such as areas around Laguna de Bay and Pampanga, as well as the northern province of Ilocos. The Dominican Province, La Provincia del Santo Rosario, included much of the

[59] During the early stages of colonization, the regular clergy were expected to spread Catholicism amongst native peoples before ceding authority to the secular clergy, who were expected to maintain balance between the mendicant orders and protect the colony's (and Crown's) interests.

Parian as well as the northern provinces of the bishopric of Nueva Segovia, including Cagayan.

Disputes between the secular and regular clergy were a defining feature of the political landscape, as was disagreement between both groups and the Crown's representatives. The most common arguments regarded the financial and ceremonial obligations of the groups to one another.[60] Members of the clergy, both regular and secular were reliant on concessions and annual stipends (such as *limosnas,* alms) from the King to reconstruct edifices after disasters and to provide wax, oil, and wine for mass. The secular clergy or *seculares* often did not possess any source of income beyond donations and royal concessions. The regular clergy or *regulares*, however, were frequently able to rely on local labor and land, as well as coordination within their religious order to supplement royal aid.[61]

Following the spate of destructive earthquakes and storms in the mid-seventeenth century (ca. 1645 to ca. 1680), a steady stream of letters from the five mendicant orders sought *limosnas* and prolongations of existing concessions.[62] Each testified to the abject poverty of the islands—emphasizing the paucity of resources in the provinces beyond Manila—while seeking aid in the form of tribute from vacant *encomiendas* or stipends. Each letter stressed additional funding was essential to the evangelization of the islands. Like the colonial administrators, the clergy were employing a rhetorical strategy that reminded the

[60]For an example of secular-regular disputes, see Marta M. Manchado López, *Conflictos Iglesia-Estado en el Extremo Oriente Ibérico Filipinas (1767-1787)* (Murcia: Universidad de Murcia, 1994), 17-26. The first chapter outlines the jurisdictions awarded to each of the five mendicant orders operating in the Philippines, and then explains the seventeenth-century origins of conflicts between the regulars and seculars over visitation and supervision.

[61] See Dennis Morrow Roth, *The Friar Estates of the Philippines* (Albuquerque, New Mexico: University of New Mexico, 1977), 40-41, 43-45.

[62] Letters arrived from each order. See the following letters from the *provinciales* of the Mendicant Orders to the King: *AGI, Filipinas* legajo 293, Número 90; *AGI, Filipinas* legajo 293, Número 97; *AGI, Filipinas* legajo 297, Número 23; *AGI, Filipinas* legajo 297, Número 30; *AGI, Filipinas* legajo 297, Número 36; *AGI, Filipinas* legajo 297, Número 66; and *AGI, Filipinas* legajo 297, Número 76.

Crown of its obligations as a Catholic monarchy, and how parsimony risked the holy mission. However, rather than emphasizing unprecedented misery like the administrators, clergymen linked spiritual and physical poverty: their physical condition hindered their (and therefore the King's) holy purpose. Thus, the clergy could cite its inherent morality as justification for concessions

The mendicant orders appear to have encountered considerable success coping with the poverty of the Philippine colony as a result of this strategy. A letter penned by the *oficiales reales* in 1691 details the annual contribution to the clergy from the royal treasury. That year the King provided 17,443 pesos to purchase wax, oil, and wine for provincial churches. Clergymen from the mendicant orders that same year received approximately 17,249 pesos in pay through a combination of donations from the royal treasury and collected tribute. For the regular clergymen, the majority of the 17,249 pesos appears to have come from local tribute, which provided clergymen set amounts of rice and liquid cash each year.[63] Thus, *regulares* in the provinces were not especially reliant on the Crown's stipends to pay their salaries, but relied on the Crown to subsidize provincial houses of worship.

In addition, the mendicant orders began to purchase *encomiendas* in Luzon in the seventeenth century, as chronicled by Dennis Roth. Land not only gave the mendicant orders greater financial stability, but also an autonomy and influence that surpassed both the *seculares'* and the colonial administrators' control. Part of what motivated the mendicant orders to purchase land was Luzon's natural hazards.[64] The typhoons that sank

[63] In 1691, the Franciscan, Dominican, and Augustinian orders each received approximately 16,500 pesos each to transport *regulares* to the Philippines from Spain. The Dominicans and Franciscans also received annual *limosnas* of 1,200 pesos and 1,800 pesos respectively to sustain members of their orders. *AGI*, *Filipinas* legajo 32, Número 100.

[64] Dennis Morrow Roth, *The Friar Estates of the Philippines,* 2, 10-11.

galleons through the latter half of the 17th century provided fresh motivation with each instance to purchase land. And the earthquake of 1645, followed by the successive earthquakes of 1654, 1658, 1676, and 1688, diverted the colony's reduced income to repairing Manila and its buildings (see Chapter 2). As a result, the *regulares* in Luzon had little choice but to seek alternative sources of funding through their orders and the possession of landed estates.

In contrast to the *regulares*, the *seculares* received limited aid for their daily operations. The Cathedral of Manila, for instance, received just 200 pesos out of the 17,449 pesos conceded for the maintenance of churches in 1691. The cathedrals in Manila and the provinces were instead expected to maintain themselves through parishioner's charity and did not possess land or *encomiendas,* which meant little support during downturns in the silver trade.[65] However, while few funds were awarded for daily operations, damage to any of the cathedrals could prompt a royal concession, especially in the wake of a ruinous disaster. The Cathedral of Manila, for instance, received 26,000 pesos in royal aid following the San Andrés Earthquake (see Chapter 2).[66] Thus, over the course of the seventeenth century, the *seculares'* wealth became tied to the private wealth of Manila and the Crown's charity—both unreliable sources of funds—which further limited their authority over the *regulares*.

The consequences of the *seculares'* and *regulares'* different methods of coping with the destruction of natural hazards manifested over time. The *seculares,* although fewer in number, became increasingly reliant on the funding from the King, especially when the private wealth of Manila and the provincial capitals was scarce, as it was in the latter half of

[65] In the seventeenth century, wealthy parishioners would spend considerable amounts of money to fund holy works (*obras pías*). Maintaining and improving the cathedral through donations was, in a wealthy city, feasible.
[66] *AGI*, *Filipinas legajo* 32, Número 100.

the seventeenth century and again in the mid-eighteenth century. Theoretically, this offered the *seculares* access to an extremely powerful and wealthy institution. However, the distance between Manila and Madrid significantly affected the ability of the Crown to provide for the *seculares*. The *regulares* were also reliant on the Crown to subsidize their work in the provinces, but, in contrast to the *seculares,* also had access to land and labour, gained through either royal concessions or by mendicant orders purchasing *encomiendas.*[67] Therefore, when recurring natural hazards placed financial pressure on the Spanish colony, including the sinking of treasure-laden galleons that supplied a considerable portion of the colony's annual budget, the *regulares'* methods for coping through the extraction of local resources proved more effective. Potentially, natural hazards inadvertently strengthened the position of the *regulares* vis a vis the *seculares* in the Philippines, a strength which would define the political and religious character of the colony until the Philippine Revolution (1896-1898).[68]

## Processions of Disaster: The Regular Clergy and the Remarkable Story of The Tears of St. Francis

The Spanish conception of a moral universe necessitated involving the *regulares* and *seculares* in responding to calamities, including natural hazards. They were responsible for spreading and maintaining Christianity among the *naturales*, including Christian interpretations of disaster. The regular clergy especially, as the missionaries of the colony,

[67] For a history of church property holdings, see Dennis Morrow Roth, *The Friar Estates of the Philippines,* 44-45 and Nicholas P. Cushner, *Landed Estates in the Colonial Philippines* (New Haven: Yale University, 1976), 27, 33, 43.

[68] Roth, *The Friar Estates,* 2-3. Owing to the fragmentary nature of the documents available, however, determining how much natural hazards contributed to the divergent financial conditions of the *seculares* and *regulares* is not possible in this dissertation.

needed to rationalize natural hazards within a Catholic schema for their parishioners. Ultimately, they supplied an explanation for disaster through the Spanish-Catholic custom of *fiesta*, a celebration that came to play an essential role in responding to Luzon's hazardous environment. [69]

A *fiesta* was the celebration of a holy day on the Catholic calendar, commemorated through a mass and procession. *Fiestas* could be annual events, celebrating a certain saint, apostle, or Jesus Christ, or they could be one-time celebrations of important moments for royalty such as the birth of an heir, a marriage, or a death.[70] The importance of *fiestas* in Luzon, which were often reliant on public funding, is reflected in the amount of money dedicated to such celebrations. The *cabildo secular* (City Council) of Manila spent 143,611 pesos in support of religious festivals from 1592 to 1691. This amounted to 22.4% of the city's expenditures in that one-hundred-year period.[71] Among these *fiestas* was one intimately linked with natural hazards: the *fiesta de las lagrimas de San Francisco* (the Festival of the Tears of St. Francis).

The festival commemorates a miraculous occurrence observed from November 30th to December 4th, 1645. On the night of November 30th, the city of Manila and the surrounding towns were reduced to rubble during the great San Andrés earthquake. In Dilao, a town on the edge of greater-Manila and the capital of the Franciscan province of San Gregorio, this prompted strange actions from a statue of St. Francis (*un Imagen de Bulto*

[69] Phelan, *The Hispanization of the Philippines*, 19, 24, 44-45, and 124. See also Carolyn Brewer, *Holy Confrontation: Religion, Gender, and Sexuality in the Philippines, 1521-1685,* (Mandaluyong: Raintree Publishing, 2001), 31-33, 68, 95, and 121.
[70] For instance, news of the Queen's pregnancy was cause for celebration in 1711, as was the royal heir's marriage in 1724. See *AGI, Filipinas* legajo 187, Número 15, and *AGI, Filipinas* legajo 187, Número 33.
[71] For comparison, the amount spent on buildings over the same period was 130,023 pesos. Luis Merino O.S.A., *El Cabildo Secular: Aspectos Fundacionales y Administrativos, volumen 1* (Manila: Intramuros Administration, 1983), p. 194-195 and 243-245.

*de San Francisco*).[72] This statue, supposedly the first statue of St. Francis to arrive in the Philippines (1577), had come to reside in the house of an *Indio principal* named Alonso Cuyapit as the centrepiece of his personal shrine.[73] During the San Andrés earthquake, the statue moved from its altar to the window facing towards Manila and began to cry, with Cuyapit later testifying that tears were running from its eyes down to its throat. Over the next four days (until December 4th), as aftershocks continued to shake Dilao and Manila, the statue continued to cry, which convinced Cuyapit to inform the residing father and guardian of the convent of Dilao, Friar Juan Tarancen O.F.M. of the miracle of the tears.[74]

Ultimately, the event was declared a miracle, not to be disputed on pain of excommunication. The declaration, penned in 1647, charged the guardians of the Convent to place the statue on an altar and venerate it. With this act came a new festival, where:

> A solemn procession was made to carry the holy image [of St. Francis]
> from the church of the convent of Dilao to the convent of our Father
> St Francis of Manila, where a great number of persons would convene:
> members of the *Religiones* [Mendicant Orders] and all of those of the city of Manila, clerics, *seculares*,
> as would the *naturales* [Filipinos], from the border in which there were many penitents and other
> sinners; and the two cabildos, ecclesiastic and secular pledged to the Glorious Saint as their patron and advocate. In virtue of this miracle
> the convent celebrated it for many continuous years with a mass and sermon.[75]

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[72] Two documents, from 1689 and 1738, describe the fiesta in high detail: *AGI, Filipinas* legajo 83, Número 19 and *AGI*, *Filipinas* legajo 298, Número 15. Note that, in the present day, Dilao is now known as Paco, and has been incorporated into metropolitan Manila.

[73] *Indio principal* is a Spanish term for the indigenous head of a village (a *datu* in pre-contact cultures). Phelan, *The Hispanization of the Philippines,* 15. More information on the *principalia* and how this group of privileged *indios* functioned within the Spanish colonial hierarchy, see Norman G. Owen's article titled "The Principalia in Philippine History: Kabikolan, 1790-1898" (1974). For more on the statue of St. Francis, see Doreen G. Fernandez. "Pompas y Solemnidades: Church Celebrations in Spanish Manila and the Native Theater," in *Philippine Studies*, vol. 36, no. 4 (1988): 419

[74] The friar diligently checked the image, verifying with his own eyes that it seemed to be crying. He then gathered several other religious officials on that morning, December 4th, to clean the statue. After, the statue was moved from Cuyapit's small house to the convent of St. Francis. As it was moved and tears continued to trail its face, it brought much solace to the community, "so afflicted" as it was by the tumult of the previous four days. *AGI, Filipinas* legajo 83, Número 19*,* 3R-3V. Cuyapit would later testify that he delayed discussing the miracle with the friar due to his own disbelief, his fear of ridicule, and his wife, who was sick and near death in bed at the time of the earthquake. *Ibid,* 4R-6R.

[75] *Ibid*, 10V-11R.

The festival, once instituted, became an example of cooperation between the *regulares, seculares,* and city administrators (*cabildo secular*) despite their pronounced disagreements. The *cabildo secular* even chose through an internal local vote, rather than royal decree, to fund this religious *fiesta*. The ability of the *fiesta* to transcend the internal divisions of Manila's religious administrators, city council, and *regulares* speaks to widespread acceptance of the festival, the end-product of a local natural disaster. Furthermore, the *fiesta* was also widely accepted amongst the island's residents, the *naturales* or *indios*, a fact the Franciscans used to justify celebrating the *fiesta* each year.[76]

The new *fiesta*, a mass and sermon accompanied by a procession every December 4th, nonetheless became a flashpoint for conflict between the Franciscan Order, the *seculares*, and the colonial government. In 1685, acting on orders to limit the number of festivals celebrated in Manila—and thereby expenses—Archbishop Felipe Pardo forbade the celebration of the *fiesta de las lagrimas de San Francisco* on pain of excommunication. Pardo's ban on the festival was ultimately judged inappropriate by the King, who issued a cedula in 1689 commanding the festival continue without further impediment.[77]

Within half a century, though, the festival again came under threat, this time from the Crown and administrators. In 1738, the Crown and Consejo de Indias attempted to save money by limiting the number of local festivals supported by the Crown's representatives throughout the Spanish Empire. This decree came with a pre-approved "Tabla de las Fiestas" (see Figure 3.2) dictating which festivals were to be observed by Manila, and which of those would receive royal funding. Notably, the *fiesta de las lagrimas* was excluded,

[76] See the opening letter of *Ibid*.
[77] See the opening letter of *Ibid.*

prompting a printed *memorial* (a record to the King) from the *Procurador General* of the Franciscans in the Philippines, Joseph Torrubia.[78] The *memorial* defended the virtue of the festival, citing the cedula of 1689 and the *fiesta*'s popularity amongst indigenous peoples to argue it was an asset for Catholicism. Torrubia asserted the *fiesta* was an especially potent tool for missionaries, an attractive aspect of Catholicism for potential converts and a form of comfort to the faithful or the newly converted. Its ability to further the Spanish evangelical mission, argued Torrubia, made the *fiesta de las lagrimas* worthy of royal approbation and financial support.[79]

[78] See the opening, untitled letter in *AGI*, *Filipinas* legajo 298, Número 15.
[79] *Ibid*. In the same collection, see the second document: a Cedula from the King dated 1689.

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Figure 3.2: *"Table of the Fiestas, the Ordered and the Cut, to be Guarded by the Royal Audiencia and Chancellery of the City of Manila, and the other Tribunals of the Colony, arranged for the year of 1738 by Order and Mandate of the King and Supreme Council of the Indies."* Aside from the city's patrons, San Andrés (Saint Andrew) and Santa Potencia, only festivals prominent throughout the Spanish kingdoms were to be celebrated (such as Easter, Three Kings' Day, and the days of the Apostles, among others). The festival of the tears, a local festival, was not listed.[80]

[80] *Ibid*.

The *fiesta de las lagrimas* was not the only procession held in response to natural hazards. During 1749 and 1753, Mt. Taal to the south of Manila produced significant volcanic activity. In order to pacify the mountain, the local members of the clergy held a procession atop the mountain, where they planted a cross at the summit. The procession seemed to work for a time, at least until the mountain underwent its most powerful recorded eruption a year later.[81]

From the "Tabla de Fiestas" and the processions to the summit of Mt. Taal, it is apparent the appeal of the *fiesta* did not fade during the 18th century. Unfortunately, though, minimal information on fiestas and processions related to local hazards or miracles is available for the towns outside of Manila. However, what evidence is available implies several festivals occurred beyond Manila, even if records of them have not always survived.[82] The Catholic *fiesta* was adopted and adapted by Filipinos to their own customs. Festivals in the Philippines were, according to many observers, celebrated with particular exuberance and in a style characteristic of the islands. And they were celebrated for every conceivable reason: saints' days, royal affairs, triumphs, the arrivals of the galleons, and the end of destructive natural disasters. The *fiesta de las lagrimas de San Francisco* was therefore not an exceptional event.[83]

The *fiesta*, it should be noted, was not intended to address Luzon's natural hazards. Rather, it was a suitable, pre-existing response to disruption that could be applied to the

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[81] "Descripción ajustada y exacta relación del bolcan de Taal, y su furiosa erupción el año de settesientos cinquenta y cuatro." *AGN, FILIPINAS, legajo* 884, Expolio 1, 6F. Note that unlike other documents cited in this chapter, this "Descripción ajustada" pages are numbered in a folio format, but rather than using "R" (recto) and "V" (verso) to label pages instead uses "F "and "V."

[82] For a description of one such festival, see Horacio de la Costa, "A Marian Festival in Manila, 1619." *Philippine Studies*, vol. 2, no. 4 (Dec. 1954): 319-322. For more on the Filipino embrace of Spanish fiestas, see Phelan, *The Hispanization of the Philippines,* 74-78.

[83] To confirm the existence of such *fiestas* in the past and in the contemporary Philippine Islands, ethnographic fieldwork would be necessary.

extreme events generated by the environment. And, speaking generally, *fiestas* when applied to natural hazards furthered Spanish-Catholic objectives.[84] The *fiesta*, through natural hazards, brought the island's disparate groups together—administrators, clergymen, *naturales,* and other Catholic residents of Luzon such as the *soldados* (soldiers)—in pious observance of God. The characteristic zeal and exuberance displayed in these *fiestas* was costly, however. Therefore, natural hazards had, in addition to their impact on institutions, an unexpected financial and cultural impact.[85]

## Calamity: Visitation and the Inquisition

Festivals, as they related to natural hazards, were primarily the concern of the *regulares* and the mendicant orders. The *seculares,* instead strengthened Catholicism's presence in Luzon through the pursuit of heresy via the Inquisition. Among the crimes the Inquisition investigated were witchcraft, hex-casting, and non-Christian rites that could affect the material world, including by altering weather or inflicting hazards upon others. As with the *fiesta,* the result was that an institution seemingly unrelated to natural hazards was forced to respond to the Philippine environment. However, whereas Luzon's environment produced a miracle for the *regulares*, the Inquisition viewed Luzon's environment with suspicion, seeing its plants, peoples, and hazards as threats to their newly imported faith.

The Philippine branch of the Inquisition functioned from 1583 to the institution's abolition in the islands in 1820 as a committee subservient to the tribunal in Nueva España. This tribunal, headquartered in Mexico City, was in turn beneath the authority of the

[84] Reinhard Wendt, "Philippine Fiesta and Colonial Culture." *Philippine Studies,* Vol. 46, No.1 (1998): 3-5.
[85] What the *fiestas* represented to their many participants, representatives of different cultures, will be covered in Chapter 5.

Inquisition offices in Spain.[86] For the vast majority of its history, the Philippine Inquisition was led by a head *comisario* (commissioner). The commissioner began and built a case, but did not prosecute; instead, the accused was sent back to Mexico, where the trial and punishment took place.[87] The head commissioner was based in Manila with additional commissioners serving under him. There were also provincial *comisarios* for Spanish populations in distant provinces like Ilocos, Cagayan, and the Marianas.[88]

The Philippine Inquisition searched, as did all branches, for instances of Protestantism, Judaism, Islam, heresy, apostasy, and blasphemy. However, it was only able to pursue cases against Spaniards, Mexicans, and *mestizos*, since the *Indios* (indigenous peoples), were equated to minors still being educated in the faith.[89] The institution pursued fantastic enemies, like witches (*brujas*) and hex casters (*hechiceros*), along with more mundane sinners like bigamists, blasphemers, and disseminators of contraband literature. The vast majority of denunciations and prosecutions occurred in the seventeenth century, with the most common complaints being soldiers blaspheming during games of chance or people performing hexes for luck or health.[90] The most comical concerned attempts to find (or manufacture) a lizard with two tails for good luck while gambling (see Chapter 6). Many of these cases were never pursued beyond initial denunciations or confessions of guilt.[91]

The Inquisition's limited powers and the number of prosecuted heresies supports arguments that the Philippine branch was "weak" relative to the Inquisition in Mexico.[92]

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[86] F. Delor Angeles, "The Philippine Inquisition: A Survey," *Philippine Studies*, Vol. 28, No. 3 (1980): 260
[87] *Ibid*, 260.
[88] *Ibid,* 261.
[89] *Ibid,* 271.
[90] Another common crime in this period was solicitation by priests of members of their congregation. Delor Angeles states that from 1584 to 1809 seventy-seven cases of solicitation by priests were recorded. *Ibid,* 265.
[91] *Ibid*, 256.
[92] This conclusion is reflected in the lack of monographs studying the Philippine Inquisition. Delor Angeles writes that the only existing monograph dedicated to the Philippine Inquisition as of 1980 was published in 1899 by José Toribio Medina (*El tribunal del Santo Oficio de la Inquisición en las Islas Filipinas)*. *Ibid*, 282. More

However, the Inquisition could still be a potent actor in Philippine affairs, its influence most evident when it jailed a sitting governor, Diego de Salcedo, on exaggerated charges in 1668.[93] This prompted a succession crisis for the governor's position, which only ended in 1670 under Manuel de Leon. He, in his efforts to punish his predecessor's jailor, would refer to the *comisario* of the Inquisition as the most powerful man in Luzon who, "in all things wants to extend his commission."[94] Though Leon would soon after jail the *comisario* responsible for imprisoning Salcedo, the entire episode hints at the power of the Philippine Inquisition in the mid-seventeenth century.

The Inquisition's authority makes its responses to natural hazards all the more important. The search for witches and hex casters focused the Inquisition's attention on weather and natural hazards. An open letter authored by the archbishop and preserved by the chief *comisario* described the benefits of "visitation and inquisition" of the prelates and parishes. Visitation was the right of *seculares* such as bishops to witness and police the clergy under their jurisdiction (and thus extend their power over the *regulares*).[95] This was done to "castigate the viciousness and sins" of prelates and of "our subjects." The letter then lists the sins visitation is supposed to prevent or discover. At the top of the list is "heretics and apostates [converted Jews who have reverted to Judaism]."[96] Then other heresies are listed including Protestantism and doubting the saints or God, followed by

recently, the Inquisition documents stored at the AGN have become a valuable source for Latin Americanists studying the Mexico-Philippine link in the seventeenth and early eighteenth century. For instance, see Tatiana Seijas, *Asian Slaves in Colonial Mexico: From Chinos to Indians* (Cambridge: Cambridge, 2014).

[93] F. Delor Angeles, "The Philippine Inquisition," 273-274 and Javier Barreintos Grandon, "Salcedo, Diego de," in *Diccionario Biográfico Español XLV* (Madrid: Real Academia de Historia, 2013), 257-259.

[94] *AGI, Filipinas* legajo 10, Rollo 1, Número 8.

[95] Visitation was the process of a secular official performing an annual inspection of ecclesiastic clergy.

[96] *AGN,* Inquisición Tomo 220, 351R.

whether subjects are taking confession when they should. Then, inserted amidst these points are two surprising types of sin to be investigated:

> Also if there are any diviners, hex casters,
> or witches, conjurers of clouds or tempests or some
> maleficence with hexes and other things.
> Also if there are some *ensalmadores* [soothsayers] that cure the injured or
> sick by incantations or superstitious words [word cut from page]...[97]

The document then lists another two pages of minor offenses before concluding. The last words were cut from surviving copy of this letter, but the intent of the author is clear. Those who claim the ability to manipulate the physical world—to work miracles or marvels—are to be punished. Although it was never the Inquisition's exclusive intent to prevent natural hazards, finding witches capable of inflicting them was part of its mission. Visitation, which had the dual benefit of promoting the influence of the Inquisition and *seculares* over the *regulares*, was a valuable tool in the hunt for such fantastic adversaries.

Another justification offered in this letter for "visitation and inquisition" is the prevention of "great harm to the spirit" of the Catholic Faith and impediments to conversions.[98] Visitation was envisioned as protecting the proselytization of the Philippines. The Inquisition was an institution dedicated to purity, to rooting out sin and fostering Catholic piety, the ostensible purpose of the Spanish colonisation of Luzon. Witches or those claiming power over natural processes personified heresy, threatening the "spirit" of Luzon, and their purported existence further validated visitation and the extension of the Inquisition's authority.

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[97] *Ibid,* 351-351V.
[98] *Ibid,* 351R.

Focus on the prevention of harm, both spiritual and physical, to the Catholic mission would manifest repeatedly during the tenure of chief *comisario* Francisco de Paula. Coming to head the Inquisition just after the earthquake of 1645, he presided over a noticeable rise in cases remitted to Mexico City and unsuccessful attempts to expand the Philippine branch's jurisdiction.[99] De Paula's desired to increase the Inquisition's power over Filipinos based on the "grand number of witches…that are and have been amongst the Indios and Indias."[100]

Francisco de Paula, writing to advise Mexico of the Philippine situation in 1651, forwarded a letter from Fr. Theodoro de la Madre de Dios that spoke of the "great scandal" the witches caused. Friar Theodoro testified, "The number [of witches] is so great that there is not a town without them and among those are some where they come to be a third of the town."[101] He writes that in all cases he has witnessed, "they have explicit pacts with the devil who appears to them in visible form, and the first thing he asks of them is adoration and acknowledgement that he is their only God and lord and for their total obedience." Among other things, the devil prevents these Filipinas *brujas* from taking the host or confessing to their mortal sins, promising abundant material wealth after death.[102] Theodoro also asserts witches are known to possess the ability to "to kill, to afflict, and to spread sickness."[103] They may also kill animals, trees, and seeds. Theodoro, upon concluding his letter, characterizes the account as a prompt to action for the Inquisition. He asks them "to deliver [here] a remedy because there is not anyplace in these islands where the sins

[99] One such argument came from Ternate, which argued Manila should be the center of a new Tribunal independent from Mexico to facilitate trials in Asia. *AGI, Filipinas* legajo 330, Libro 5, 134V, 136R-136V.
[100] *AGN*, Inquisición Tomo 442, 455R.
[101] *Ibid,* Page numbers absent from this portion of the *tomo*.
[102] *Ibid.*
[103] *Ibid.*

and scandals aren't encountered and the church does not have more authority".[104] Ultimately, he argues, no resolution will come, "if this holy tribunal in whom God our Lord has tied the zeal of the purity of His faith and the honour of His divine name does not lead."[105]

The narrative struggles to depict Filipinas, most likely *babaylans* (female priestesses or shamans of high importance to the Philippine pantheon), in the image of Spanish witches. Fr. Theodoro's statements did not describe the actual practices of *babaylans*.[106] Accurate or not, the letter demonstrates how clergymen believed that the Devil empowered these women to control and afflict bodies, the environment, and the physical world. Although friar Theodoro does not claim these witches can cause earthquakes, he does assert they can cause blight and can affect peoples' property and health. Likewise, from the 1622 open letter discussed above, it is apparent that priests and inquisitors believed these women capable of conjuring storms. The vague language of the few documents available does not fully describe the power of indigenous witches, or if their abilities were distinct from those Spaniards felt existed in America or Europe. However, the explicit link between localized natural hazards and witches is notable. That the letter then asks for an expansion of the Inquisition's powers links that institution to the prevention of local natural hazards, vis a vis the pursuit of their primary cause.

More subtle and implicit, but still powerful, is how the letter links the Inquisition to the prevention of acts that cause "great harm" to God and the Catholic mission. That the Inquisition should be concerned with the spiritual purity of the colony is unsurprising.

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[104] *Ibid.*
[105] *Ibid.*
[106] For evidence of the Spanish Inquisition's role in repressing Filipinas' sexuality, see Brewer, *Holy Confrontation,* 281-285 and 294. For more on how Europeans imagined witchcraft, see Stuart Clark, *Thinking with Demons: The Idea of Witchcraft in Early Modern Europe* (Oxford: Oxford University, 1997), 13.

However, the document construes these women as an impediment to the evangelizing mission of the Spanish colony. To fail, to lose to these witches, would be to fail in the Lord's work. Combatting these 'witches' is, as the letter intimates, a question of character, of whether the Inquisition will seek power to pursue these *brujas*. And, as the *fiesta de las lagrimas* indicates, the clergy believed that failure of character could draw the Lord's ire. Therefore, this and other attempts to expand the Inquisition's power—such as a concurrent attempt to ban the processions of the Chinese lunar festival or requests for establishing an independent tribunal—may all be viewed as attempts to prevent or curtail disruption by attacking its cause: sin.[107] The Inquisition was trying to prevent supernatural disruptions (from Satan, his followers, or the just wrath of the Lord) including natural hazards.

Documentary evidence of the Inquisition's activities after the arrest of Governor Salcedo is fragmentary. While the Inquisition continued to pursue cases against blasphemers and bigamists, letters discussing witches or natural hazards after the 1650s were not encountered during archival research. Likewise, denunciations against hex-casters or sorcerers were already declining in number by the middle of the seventeenth century.[108] This decrease in activity arguably reflected, in part, the success of the Inquisition and mendicant orders in discrediting *babaylans* as well as the adoption of Catholic lifestyles and norms amongst indigenous peoples, as argued by Carolyn Brewer.[109] However, the decrease in the Inquisition's activity also undoubtedly reflected its diminished influence in the eighteenth century.

In summary, even as the Inquisition struggled in the Philippines, its actions were motivated by sin, heresy, and the resulting natural hazards, which it argued could be

[107] *AGN,* Inquisición Tomo 422, 252R and *AGI*, *Filipinas* legajo 330, Libro 5.
[108] Delor Angeles, "The Philippine Inquisition," 269-270.
[109] Brewer, *Holy Confrontation,* 200, 210, 224, 281, 283-284, 295-297, and 311.

prevented by hunting witches—the agents of Satan—and by rooting out the heresy that displeased the Lord. Hazards therefore provided rhetorical justification for the institution. However, its suggestion to pursue witches by expanding its jurisprudence in the mid-seventeenth century, the apogee of its influence, came to nothing. Because its influence waned in the concluding years of the seventeenth century and throughout the eighteenth, its role in responding to eighteenth century hazards may be safely described as minimal.

## Institutions in 1754: The Eruption of Mt. Taal and Conclusions

Between 1645 and 1754, disruption from hazards was so regular that it acted as a prolonged process, exercising influence on colonial institutions over time. The Crown's strategy for assessing and responding to damage was, in many ways, ill-adapted to responding to threats in distant Manila, let alone the rest of Luzon. That strategy did adapt over time, however, to accommodate the Philippine environment. Likewise, institutions and practices of the *regulares* and *seculares*, while not designed to respond to natural hazards, inevitably did. The *fiestas* and the Inquisition's acts, respectively, countered natural hazards as Catholic-Spanish ideals dictated. And, as the Inquisition waned for reasons independent of natural hazards, institutional responses modified accordingly.

The results of these gradual shifts in institutional responsibilities can be seen in responses to the 1754 eruption of Mt. Taal, a volcano approximately sixty kilometres south of Manila. In the eighteenth century, Taal province was considered "although not large…one of the best of the Island of Luzon for it [is] very rich and fertile."[110] As of 1753, the province

[110] *AGN, FILIPINAS,* legajo 884, Expolio 1, 3F .

had almost a dozen pueblos positioned around Lake Taal (Lawa ng Taal). In the centre of the lake was the island volcano of Mt. Taal (see Figure 3.3).[111]

In 1754, the strongest recorded eruption of Mt. Taal transpired, burying several of the surrounding pueblos in ash and darkening the skies over Manila.[112] Strong eruptions would continue to emanate from Taal into the nineteenth century, but none rivalled the destructive capacity of the 1754 eruption.[113] One anonymous, printed account written in 1755 speaks of the destruction wrought by the previous year's eruption. The author mentions that, in 1753, two separate processions and solemn masses were made in response to the volcano's constant rumbling. The second effort seemed to work, quieting the volcano.[114]

The rest of the account details the damage wrought by the 1754 eruptions. When the author finishes describing the final destructive eruption, the account concludes:

> And despite the
> piety of the pueblos that have received the aid and providence
> made by Governor Don Pedro Manuel de Arandia
> and the garments he has contributed
> (as much as has been possible) for the alleviation of their misery;
> even with sickness they work, and through the next
> invasion of the Moros, that burned Balaian and Batangas
> will guarantee the loss of the most threatened and rich Province
> that the Island of Luzon holds in its continent.[115]

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[111] Taal is a geophysical oddity. It is a volcano within a lake on an island (Luzon). Inside its Caldera, however, is a crater-lake. And within that lake are several smaller islands. Throughout the eighteenth century, the area gave indications of volcanic activity. In 1705, earthquakes were felt, and boiling water was released. Likewise, 1716 witnessed more "terrible tremors" and a release of gases that killed "many fish" that floated on the lagoon's surface. 1731 saw the formation of a new island along with three days of earthquakes. In 1749, the strongest and longest earthquakes yet experienced near the mountain occurred. See *Ibid*, 4F-5V.

[112] *Ibid*, 4F-6V, 7V-10F.

[113] The eruption was rated a four on the Volcanic Explosivity Index (VEI). Raphaël Paris, Adam D. Switzer et al, "Volcanic tsunami: a review of source mechanisms, past events and hazards in Southeast Asia (Indonesia, Philippines, Papua New Guinea)," *Natural Hazards* 70 (2014): 461-463.

[114] After the success of the second procession and mass, a large cross was planted on the mountain. *AGN, FILIPINAS,* legajo 884, Expolio 1, 6F-V.

[115] *Ibid,* 12V

The account gives some sense of how the colonial administration responded to the disaster, and to what effect. First, the Crown's representative, Governor-General Pedro Manuel de Arandia, responded with aid to alleviate near-unprecedented misery and suffering for a once-prosperous province. Second, the document acknowledges that the Governor's aid, while helpful, was insufficient through a parenthetical clause, implying more help was needed. Finally, a procession involving the *regulares* and Christian rites was performed on Taal's summit to calm the eruption. In one document, the expected responses and rehabilitations of two institutions—the colonial administration and the *regulares*—are demonstrated. And, based on the document, the response of the *regulares* was nearly unchanged from 1754: a communal procession meant to quell God's wrath was the chosen response to an impending hazard.

A series of administrative letters from the Governor-General concerning Taal and Balayan provinces further detail the colonial administration's response to the disaster. In a letter dated 1758, Arandia explains that the administrators encouraged and aided the migration of survivors away from Taal towards more "fertile" land.[116] Of the province's recorded 25,881 habitants, only 12,814 remained by 1756 with only 2,814 being *tributos*—indigenous peoples eligible to offer tribute.[117] By 1758, though, approximately 23,521 *naturales* again inhabited the province.[118]

Attached certifications from the *oficiales reales* provide additional details, saying Taal and Balayan were depopulated by the "eruption of the Moros [Muslim slave raiders

[116] See the opening letter presented in *AGI, Filipinas* legajo 162, Número 3, 1V.
[117] *Ibid,* 1V-2R.
[118] *Ibid,* 2R. See also the third document in the same collection of documents.

from the Sulu Sultanate] and the damage from the volcano and epidemics…".[119] The Governor-General, to aid the displaced, sent 7,641 *gantas* of rice to the province to be distributed as rations. Additionally, for the "maintenance" of the displaced, 7,260 pesos were spent by the colonial administration. While all was reported to the King, relief efforts were coordinated and funded by the colonial government, and they appear to have been quite effective in repopulating the province. No information is given within the letters on whether relief funds were supplemented through a royal concession.

The speed and efficacy of the response stands in stark contrast to accounts of previous natural disasters. The lack of symbolically significant buildings (for Spaniards) in Taal partially explains the speed of the Spanish response; there were fewer structures the colonial administration felt obligated to rebuild in the province. Still, the four-year response, which quantified both the damage caused by the volcano and the recovery from the disaster illustrates how the colonial administration's responses to calamity had changed since 1645. Through painfully-acquired experience, it had become better adapted to the hazardous environment, and was more capable of responding quickly with its own resources.

Taal's multiple eruptions also offer ample evidence that formats for reporting damage and spectacle were changing. The document below, "Mapa del aspecto del volcán Taal en la erupción de 1749", offers a sketch of Taal's 1749 eruption (then the strongest eruption Spaniards had witnessed from Mt. Taal), which generated a new summit. The eruption, which transpired on the 10th of August, came with "horrible earthquakes," and affected the water, killing many fish.[120] Most visually stunning, though, was the emergence

[119] See the second document presented in *Ibid.*
[120] *AFIO, Legajo* 50, Documento 21.

of a new *Polo*, a word shared between Spanish and Taal's vernacular (mount or zenith in Spanish, volcano in Taal's dialect).[121] The drawing details the growth of this *Polo* in two parts, from seven in the morning until noon, and then from midnight until five in the afternoon. Crucially, all this information is shared under the heading, "As seen in the Mount of Taal."

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[121] *Ibid* and *AGN, FILIPINAS,* legajo 884, Expolio 1, 3F-3V.

*Figure 3.3: As Is Seen on the Peak of Mt. Taal. AFIO, Legajo 50, Documento 21.*

The most distinct feature of the document is its form. It is an illustration, a literal visualization. This is an attempt to convey changes and developments in the Philippines through images rather than words. The two images capture change over time and the dynamism of this natural hazard. Of course, by modern standards, the image is not a faithful representation: the curving of the Earth, the times provided, and the location of landmarks are vague or imprecise, showing the mountain as the author knows it to be rather than exactly as it appeared. However, after accounting for differing contemporary standards, the images are faithful reproductions that draw attention to the growth of a new peak, increased smoke, and the conclusion of fires started by the peak's growth. The visualization through an image thus captures a reality that written descriptions could not, one that officials in Manila and even Madrid could comprehend quickly in order to assess Taal's activity.

As for the *seculares*, a representative response for this institution comes from a rare, printed document: the Pastoral Letter of the Archbishop for 1754. The letter is rare because it was written rather than delivered orally, as it was most years, owing to the failing health of the archbishop.[122] The address is reprimanding and bitter, opening by belittling the clergy, and the *regulares* especially, for their greed.[123] The *regulares* and the entire Philippine church, according to this archbishop, were corrupt, abusing their power and enjoying material wealth.[124]

This great sinfulness, the archbishop argued, invited great calamity:

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[122] Indeed, the archbishop would pass away before 1755 (Chapter 2). See *AFIO, Legajo* 50, Documento 22, 1R.
[123] "For the past years I have presented you with my other Pastoral letters with good intention and with clean doctrine, which I understand you received not without applause and some edification; but, in general, without permanent effect, in the manner of a cloud passing by that dissipates and disappears with a wisp of wind; thus the prevailing principle [has been]…generally the corruption of customs, and the total abandonment of the Law of God, that grows in insolence." *Ibid,* 1V-2R.
[124] *Ibid,* 3R.

> You see,
> and perhaps you feel the prodigious punishments, with
> which God threatens you, and intend to make amends.
> but you do not consider the cause of them, which
> are the sins…[125]

He expounded on exactly what form these prodigious punishments have taken and will take:

> And do they seem small to you, or
> depreciable the tribulations, anguishes, and
> deeds that encircle and afflict [us]. Repair
> the hunger, locusts, and plague, that struck
> these past years; the spontaneous bellows
> of that volcano, or mouth from hell, that you
> have in sight; that although these (say
> the sub-healers and ignorant) have natural
> causes; who has said to you, that they are not
> also Ministers, executioners
> of the Justice of God for the punishment
> of men? Read the Holy Scriptures,
> read the holy fathers, and even the
> profane histories: and you will see your ignorance
> contested, and contradicted.[126]

Along with the volcano, the archbishop added the "other calamities" of failed trade and Muslim raiders—akin to those who controlled Spain for seven centuries, he reminds his readers.[127] Ultimately, he argues, Manila and Luzon "will be isolated and destroyed by water, or fire, by earthquakes and tremors of the Earth…and it will be entered and possessed by other peoples who are not Spaniards."[128]

The Archbishop's letter offers a trove of insights into perceptions of calamity, and especially the mindset of the *seculares* in Luzon. The explicit link between natural hazards

[125] *Ibid,* 3V-4R.
[126] *Ibid,* 5R.
[127] *Ibid,* 6R, 8V.
[128] *Ibid,* 25V.

like the eruption of Mt. Taal and human-driven disasters like invasion from Muslim slave raiders expresses how both are conceived as plagues, as reprimands from God. The crimes that brought about these plagues, according to the secular Archbishop, are the sins of the *regulares*. Their callous disregard for holy law, their vanity, and their greed have brought several crises to the islands. Especially significant are the invading Muslims from Jolo, who echo the Reconquista. The eruption of Mt. Taal is characterized as one of these disruptions, as are famines, locusts, and epidemics. The future, the Archbishop argues, will also inevitably bring greater natural hazards—fire or water, earthquakes and tremors—that will consume the Spaniards as they consumed Rome, Babylon, and Sodom.

These condemnations echo the Inquisition's concern for the spiritual health of the colony. Just as the Inquisition feared, the prevalence of sin—according to the archbishop's account—has reached a metaphysical tipping point. If the corruption of the *regulares* is not redressed, the colony will be destroyed. The archbishop, as a representative of the *seculares* and administrative clergy, is therefore continuing the Inquisition's arguments. Simultaneously, his pastoral letter also demonstrates the tension between the *regulares* and *seculares.* As he and the *seculares* lacked the control over the *regulares* given by visitation and other forms of oversight, the eruption of Mt. Taal provided the archbishop a rare opportunity to shame an insubordinate clergy.

Thus, Taal's 1754 eruption reflects the changes and adaptations in governing institutions' responses to natural disasters that developed over the prior one-hundred-nine years. The evolving influence of the Crown, the *seculares,* and the *regulares* affected how hazards were responded to, and therefore what reactions persisted. *Fiestas,* the response of the mendicant orders, continued to be employed enthusiastically from 1645 to 1754, while the Inquisition's ability to respond to hazards declined with the institution. The Inquisition's

arguments about preventing calamity, however, persisted through the *seculares,* as evidenced by the 1754 pastoral letter. All the while, hazards continued to strike the colony, exposing its physical vulnerabilities and forcing the colonial administration to adapt to the disruptive environment. Claims of unprecedented misery were replaced over the course of the eighteenth century by precedent; the novelty of Philippine hazards faded, and their damage became an expected feature of the colony rather than an exception. Concurrently, new ways of visualizing information developed, changing how the damage from hazards was related over great distances.

It is possible to overstate the role of natural hazards in the development of institutions, but these events reveal the interplay, the evolving politics and responsibilities, of each major governing institution in Luzon. And, while the impact of natural hazards cannot be quantified from the fragmentary documentary evidence available, one thing is beyond doubt: the history of Luzon without natural hazards in this period is unimaginable. They were ubiquitous, a significant feature in the history of each governing institution in Luzon.

# Chapter 4: Pamphlets, Letters, and Stories on Calamity

Educated and literate Early Modern Spaniards (i.e. clergymen and administrators), as shown in the previous chapter, viewed natural hazards as inseparable from God and His judgment. However, the intellectual basis for how these colonial elites envisioned disaster lies outside the scope of this dissertation.[1] Instead, this study concerns itself with the stories generated by Luzon's natural hazards, how an aspect of Luzon's environment was remembered, and how such stories changed over time. Put differently, the following chapters are interested in the cultural impact of natural hazards.

[1] Nevertheless, some background on European understandings of natural hazards and the natural world during the Early Modern period is essential. Conceptions of natural hazards were determined via periodic reinterpretations of the near-diametrically opposed ideas of Aristotle and St. Augustine. Aristotle classified all natural hazards, as well as comets and shooting stars, as meteorological phenomena, driven by imbalances in the four elements and their associated humors (hot, dry, humid, and cold). His central postulate was that all physical processes operated through discernible rules. Weather, hazards, and all variations on these phenomena were comprehensible, the products of fundamental elements interacting with one another. St. Augustine, writing during the decline of the Roman Empire, advanced a supernatural interpretation of natural hazards in *The City of God.* Augustine declared natural phenomena, and the natural world itself, products of divine intent. While the rules of the physical world could seem immutable to humans, all rules could be broken by God to produce any manner of wondrous or terrible phenomena. The physical world operated as God desired; the only unchanging principles were His. Reconciling these competing conceptions of the world—as a planet governed by immutable physics or as a physical plane subjugate entirely to divine or spiritual needs—was the basis of scholastic thinking.
Given the accelerating intellectual fluorescence of Western Europe during and after the discovery of the Americas, scholasticism in the mid-seventeenth century was radically different than it was during the Italian Renaissance. In the Spanish Empire, contemporary dialogues on sin, the apocalypse, witchcraft, and diabolism all influenced interpretations of old ideas, forming an intellectual crucible with a uniquely macabre and pessimistic interpretation of calamity, natural hazards included. The intellectual milieu of the era, an "Early Modern lens," interpreted the world through wonders and portents. God was perceived as a strict judge who sent calamities—including natural hazards—to punish humans for their collective sins all while the world raced towards the Apocalyptic final confrontation between Good and Evil, God and Satan.
Monographs on Western Early Modern thought and philosophy often deal with natural hazards tangentially. Works that locate natural hazards within Early Modern thought include Jean Delameau, *Sin and Fear: The Emergence of a Western Guilt Culture 13th-18th Centuries,* trans. Eric Nicholson (New York City: St. Martin's Press, 1990), 136-140; Stuart Clark, *Thinking with Demons: The Idea of Witchcraft in Early Modern Europe* (Oxford: Oxford University, 1997), 71, 152, 153, 163-164; and Lorrain Daston and Katherine Park, *Wonders and the Order of Nature, 1150-1750* (New York: Zone Books, 2001), 181-187, and 361.

The task is made more difficult by the island's geopolitics. Each of Luzon's peoples were defined by distinct ecological adaptations and lifestyles, which generated separate cultures that each witnessed, experienced, and responded to natural hazards differently. To accommodate and better understand Luzon's cultural diversity, the remaining chapters explore cultural impact as follows. This chapter addresses written relations of natural hazards that affected Luzon, which were exclusively composed by Spaniards, normally members of the clergy. The next chapter focuses on the *fiesta de las lagrimas de San Francisco,* arguing the annual celebration gradually became a *creole* custom reflecting both indigenous and Spanish-Catholic beliefs. The final chapter concludes the study of the cultural impact of natural hazards by discussing "deviant narratives," using the documents available to reconstruct how colonial migrants sourced from distant parts of the Spanish Empire responded to Luzon's hazards between 1645 and 1754.

## Publications and Pamphlets: Written Responses to Natural Hazards

Short, published pamphlets (along with letters meant for broad distribution throughout an institution) and *fiestas* were among the most conspicuous cultural products of natural hazards. However, unlike the participatory *fiestas,* pamphlets were a response exclusive to literate Spaniards. Pamphlets were composed in Spanish, a language few of Luzon's inhabitants spoke outside of Manila, and the literate population of Manila was likely limited to members of the clergy and the colonial administration who corresponded regularly with each other, Mexico, and Madrid.[2] Thus, pamphlets and letters represented

[2] In the hinterlands and provinces, priests learned and preached in the languages of their congregation. John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses, 1565-1700* (Madison: University of Wisconsin, 1967), 31-33.

conversations and exchanges of ideas between a small, literate—and thereby exclusive—colonial elite.[3]

In addition, pamphlets, like most writings in the empire, were scrutinized by the Inquisition. Therefore, what pamphlets contain is a Crown- and church-sanctioned response to natural hazards that actively excluded unendorsed understandings of disasters. By comparing pamphlets and public letters circulated between 1645 and 1754, it is therefore possible to chart shifting cultural attitudes amongst these elite (and provide an explanation for observed changes in institutional responses to natural hazards). Thus, the chapter determines the cultural impact of natural hazards in Luzon for the colonial elite between 1645 and 1754.

This chapter compares narratives of natural hazards that occurred at the beginning and end of this study, in 1645 and 1754. One-hundred-nine years separated the two disasters—the San Andrés Earthquake that destroyed Manila and the violent eruption of Mt. Taal that consumed a province—which inherently constrains comparison. Unfortunately, this limitation is a product of the source material. Most natural hazards in Early Modern Luzon were only discussed briefly in administrative letters, which were discussed extensively in Chapters 2 and 3. Only the destructive calamities of 1645 and 1754 inspired multiple written, public narratives of hazards in Luzon, thus allowing for comparison between contemporaneous sources and analysis of how narratives of disasters changed over time.

Examining the narratives of San Andres and Mt. Taal demonstrates that depictions of, and explanations for, calamities changed profoundly between the two events. In 1645,

[3] A pamphlet is a short, unbound book or leaflet intended for distribution. Pamphlets were a favored form of publication immediately after the invention of the printing press in Early Modern Europe as they allowed for the rapid circulation and consumption of notices, information, arguments, and propaganda.

writers construed the San Andrés earthquake as both divine punishment for sinfulness and an imperative for betterment. Narratives of the earthquake thereby expressed the dual Catholic leitmotifs of sin and redemption, imploring their audiences to lead more pious lives. Simultaneously, these accounts portrayed Spanish administrators and clergymen as bravely responding to the earthquake, working to portray the Spanish Empire positively. This narrative of collective punishment and improvement was absent one-hundred-nine years later. In 1754, Mt. Taal's eruption was instead cast as a spectacular, economically destructive event with immense repercussions for the region's inhabitants, and administrators' and clergymen's responses were not celebrated to the same extent.

## The San Andrés Earthquake: Pride, Sin, and the Tears of St. Francis

The surviving stories do not relate the terror of the San Andrés earthquake. They instead share a moment of disbelief. The world was firm and the night calm until the instant "the ground became liquid."[4] The consequences of that moment, though, were recalled in horrific detail: the crumbled buildings, the dead and dying trapped in the rubble, and the all-consuming fear of further tremors. What is immortalized in the sources is the impossibly small separation—a handful of moments—between a complete and incomplete world.

In the aftermath of the earthquake, news of the event spread throughout the Spanish Empire. Detailed letters circulated amongst the Mendicant Orders were accompanied by accounts published in Madrid as well as Manila. None of these accounts was hastily composed. Each author had occasion to reflect on the event, to contemplate the

[4] "Relacion del horrible terremoto que succedio en las Islas Philippinas a 30 de Noviembre del año 1645 a las 8 de la noche." *AFIO*, Legajo 523, Documento 39, 5. From this point onwards, this document will be cited as "Relación del horrible terremoto." The document accessed at *AFIO* was a photocopy of the original letter, without numbered pages. Each page was one sided. Therefore page 5 signifies the fifth page of paper encountered in the reproduction available at *AFIO*.

stories of survivors, and to contextualize the earthquake within the intellectual motifs of the Spanish Empire. Accounts of the San Andrés Earthquake, most of which were composed by clergymen, construed the earthquake as moral censure for the city's collective sins. For the survivors, though, the punishment was also an appeal to rededicate their lives to God. His actions were both punitive and loving.[5]

In addition to providing a metaphysical rationale for calamity, the accounts also chronicled the responses of prominent colonial figures, specifically the clergymen and the governor-general, to the disaster. Their actions under extreme duress were portrayed as ideal, demonstrating the courage and integrity of the colonial elite. As representatives of the Spanish, Catholic Empire, the governor-general and the clergymen not only preserved the colonial outpost of Manila, but also took great risks to save the souls of the suffering and redirect the survivors' grief towards outpourings of faith. The pamphlets through praise of the colonial elite thereby celebrated the efficacy and morality of the Spanish Empire, especially its dedication to a Catholic identity. Ultimately, the San Andrés earthquake depicted in Spanish narratives justified the continuation of a Catholic, Spanish Empire.

[5] The mid-seventeenth century documents' emphasis on morality and symbolism forces consideration of an important facet of Early Modern narratives. Medieval and, to a lesser extent, Early Modern narratives worked to advance moral, spiritual, and symbolic truths. The emphasis on physical truths that is a hallmark of modernity was absent. However, Early Modern authors did not lie or concoct fantasies; the physical truth of an event, including various details, mattered greatly to them. Rather, they worked to convey physical and spiritual truths simultaneously, which at times permitted 'exaggerations' performed in service of truth. Daston and Park, in their discussion of wonders, grapple with the rules and forms of Early Modern stories of wonders, including the authenticity of accounts. Although they did not study Spain specifically, their work is a valuable tool for interpreting and navigating Spanish accounts of natural hazards. See Daston and Park, *Wonders and the Order of Nature,* 38, 48-49, 50-51, 60 ("Furthermore, medieval readers and writers shared an approach to truth more complicated and multivariant than the post-seventeenth century obsession with the literal fact…For them, truth could exist on various levels, both literal and figurative. Moral or spiritual meaning was at least as important as descriptive accuracy and wonders…"), 62 ("Yet despite these cultural presumptions in favor of belief, medieval readers and writers clearly knew that reports of wonders could be falsified or mistaken."), and 65 ("The literal truth of prodigies was vitally important, as were the precise date and place of their occurrence, which determined what they meant and for whom.").

**Sources**

A handful of testimonies on the tremendous earthquake of 1645 have survived to the present day. Unlike the administrative letters and relations discussed to this point, these testimonies were long, detailed accounts focused exclusively on a natural hazard. The first is an anonymous, handwritten relation, "Relación del horrible terremoto que succedio en las Islas Philippinas a 30 de Noviembre del año 1645 a las 8 de la noche."[6] The account resembles a letter. A telling line on the concluding page, "Los de Nuestra Compania de JESVS" (those from our Company of Jesus)[7] indicates the author was a Jesuit. Certain stylistic choices imply the letter was intended for a broad audience, likely administrators of the Jesuit order outside of the Philippines.[8] The title of the relation is decorated, and the author employs rhetorical strategies—allusion and comparison—not often seen in private letters. However, there is no evidence the letter was published.[9]

The second document is a printed pamphlet titled "Verdadera Relacion de la Grande destruicion, que por permission de nuestro Señor, haauido en la Ciudad de Manila. Declara los templos sumptuosos, y grandes edificios que se hundieron en la dicha Ciudad, y lugares circunvezinos, y gente que murío: con otros grandes portentos, que se declaran."[10] "Verdadera Relación" was published in Madrid in 1649. It communicated what had

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[6] Relation of the horrible earthquake that occurred in the Philippine Islands on the 30th of November in the year 1645 at 8 at night.

[7] "Relacion del horrible terremoto," 12.

[8] A copy of this letter survives in the *AFIO* in Madrid, implying the original document successfully arrived in the capital.

[9] The only mention of the document encountered by this author comes from *Bibliography of the Philippine Islands*, a monograph by James Alexander Robertson that accompanied the *Philippine Islands* series. Robertson, coeditor of the famous series, meant to provide a catalog of what he deemed the most "important archives and collections" concerning the islands. The source is potentially mentioned in that volume. See James Alexander Robertson, *Bibliography of the Philippine Islands: Printed and Manuscript Preceded by a Descriptive Account of the Most Important Archives and Collections containing Philippina* (Cleveland: Arthur H. Clark Company, 1908), 391, 393.

[10] "The True Relation of the Great Destruction that, by permission of our Lord, happened in the City of Manila. Declares the Sumptuous Temples and great buildings that fell in said city and nearby places and the people that died with other grand portents that declare themselves."

transpired on the Spanish-Asian frontier to the literate elite of the colonial center.[11] Several details and survivors' stories from "Relación del horrible terremoto" appear in "Verdadera Relación". Whether the pamphlet was based off the anonymous Jesuit's letter or other testimony is not known. The implication of the overlap between the two sources, however, is that details of the earthquake of 1645 were faithfully relayed across vast distances.

The third of these documents is available in English in volume XXXV of the Blair and Robertson *Philippine Islands* collection. It is titled "Relation of the events on sea and land in the Filipinas Islands during the recent years, until the earthquake and destruction on the feast of St. Andrews in 645 [sic]; and the battles and naval victories over the Dutch in 646 [sic]."[12] The author was Father Joseph Fayol a member of the Order of Mercy.[13] This pamphlet was the first of a pair he authored to describe the tumultuous years between 1645 and 1648. It was published in Manila in 1647 through the Jesuit's printing house with the consent of the local Inquisition.[14] The pamphlet's stated intent was ensuring the city properly interpreted the trauma of the earthquake and the improbable victory over the Dutch fleet as the work of God.[15] The document shares considerable overlap with the "Relación del horrible terremoto" and with "Verdadera Relación."

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[11] "Verdadera Relacion de la Grande destruicion, que por permission de nuestro Señor, haauido en la Ciudad de Manila. Declara los templos sumptuosos, y grandes edificios que se hundieron en la dicha Ciudad, y lugares circunvezinos, y gente que murío: con otros grandes portentos, que se declaran" (Madrid: Alonso de Paredes, 1649). This document will now be cited as "Verdadera Relacion." It was encountered by this author in the *AFIO.* See *AFIO,* legajo 524, Número 10.

[12] In *The Philippine Islands* (*B&R*) anthology, this pamphlet was titled "Affairs in the Philippines, 1644-47." This title will be used in this chapter's future references and citations. Joseph Fayol, "Affairs in the Philippines, 1644-47," trans. Mary F. Foster and Emma Blair, in *The Philippine Islands, 1493-1898, Volume XXXV,* ed. Emma Helen Blair and Alexander Robertson (Cleveland: Arthur H. Clark, 1906).

[13] A Spanish order founded "for the redemption of captives" during the High Middle Ages and the Reconquista. Father fray Joseph Fayol was chief chaplain of the Real Capilla de la Incarnación, a presentado, and a tercio. His status as a presentado indicates he had concluded his study as a theologian and was awaiting his degree. *Ibid*, 212.

[14] *Ibid,* 252.

[15] "And if, at times, He [God] seems to be severe to Earth, afflicting her with earthquakes, disasters, and other calamities, it is that she may acknowledge herself subject to His will, and not rely upon her own stability. At

**Narratives of Morality: Sin**

Each of these documents, published or not, comprehended the calamity of the San Andrés Day earthquake as the product of collective sin. The unpublished "Relación del horrible terremoto" claims the growing prosperity of Manila bred vanity, which was reflected in the construction of ever-more sumptuous temples and riverside mansions.[16] Collective pride and avarice reached such heights that God punished the city. The descriptions in "Relación del horrible terremoto" detail the ways He physically and symbolically inverts order to punish the city:

> The horror of the earthquake grew,
> As did its circumstances and effects, as the threats of God came to pass as punishments. And the fear of the men became lessons. The towers and their stones twisted, leaving their place, and they came to the ground with equal havoc and wonder. The union, that until now was important to the stones faltered in them and one divided from the other as they fell punishing those who raised them against their inclination and natural state. The houses buried their occupants so that—although men often go to their graves—graves came to their men.[17]

In the above excerpt, the earthquake produces chaos in the physical world in order to instruct sinners of their errors. Of particular note is the clause discussing the faltering union between stones, which tumbled down on those who lifted them up. The destruction of the gorgeous buildings of Manila is not a coincidental punishment. Instead, the stones actively fall onto those who, in hubris, raised the stones against their natural inclination. Pride, associated in the letter with the buildings, is laid low by Divine might. Human actions, like human buildings, are undone.

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the same time, He may be benignant and favorable to the sea, rendering it glorious in events, triumphant in battle, fortunate and renowned in victory." *Ibid*, 213.

[16] Relación del horrible terremoto," 2-4.

[17] *Ibid,* 4.

The earthquake thus turned symbols of vanity into lethal admonishment. As the stone buildings fell and entombed their occupants, a metaphoric inversion transpired alongside the literal collapse of order: graves rushed to meet people.[18] Exposed to such directed misery, Manila's residents and those reading about their suffering could not doubt the wrath or justice of God. The powerful, concluding lines of the description of the earthquake were therefore applicable to Manila and readers alike: "No more were they in a trance; they knew again the omnipotence of God who so easily put such fear into men…".[19]

The pamphlet published in Madrid, "Verdadera Relación," contains fewer critiques of the citizens' lifestyles.[20] Still, it concurs the origin of the earthquake was divine anger: "This night was very clear and lit, because the moon was at the end of its growth, and for the souls the night was clearer than the clearest day. Thus, in that night God gave them light for their souls, and knowledge of the sins that brought on this event."[21] The earthquake is, according to "Verdadera Relación," indisputably caused by the sins of residents of Manila. As in "Relación del horrible terremoto," the survivors, now aware of the Lord's power to punish, begged immediately for forgiveness. The exact form of the city's collective sin is not discussed, though pride is implicated through references to the "hermosos edificios y torres" (handsome buildings and towers) of the city.[22]

Fayol's "Relation of the Events…" offers similar arguments about sin.[23] Fayol portrays the earthquake as a divine correction when he prefaces his description of the event with:

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[18] The macabre imagery of graves rushing to meet people is, in addition to functioning as inversion, disturbing. The concept of a sepulcher produced by vanity is more than an unwelcome reminder of mortality. It is an urgent reminder to live life well or face a similar, dreadful end.
[19] *Ibid,* 4-5.
[20] The description of the earthquake itself is similar to the one provided by "Relación del horrible terremoto." "Verdadera Relacion," 95V.
[21] *Ibid,* 95V.
[22] *Ibid,* 95R.
[23] Fayol cites the beauty of Manila's buildings and towers but does not describe them as emblematic of pride. Instead, Fayol states stone buildings were built partially in response to the prevalence of fire and became

"on the anniversary of this day [of St. Andrew the apostle when the Corsair Limahon was repulsed] then, it pleased God again to deprive us of the city, on account of our sins."[24] Then, in the wreckage of the city, Fayol alleges everyone, from innocent children to the recalcitrant sinners, prayed to God.[25] Of their cries, friar Fayol writes "so loud were the sobs, cries and groans of the people that is seemed like a day of judgment…We all lamented our sins as a punishment for which this calamity had befallen us"[26] In this instance, Fayol blends morality with fear of the apocalypse, hinting at the eschatological undertones pervasive in Early Modern Spanish thought.[27] The pamphlet thus interweaves themes of shame, divine wrath, and mortality, a fearful brew meant to inspire readers to better behavior via the fear of the Almighty.

Each relation took great steps to portray the earthquake as a consequence of sin.[28] Although the authors did not characterize the city's sins identically, all agreed the collective sin of Manila prompted the earthquake. Nor did any consider the San Andrés Earthquake

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beautiful as well as functional over time. All three pamphlets discuss the role of fire in Manila's architectural history. However, only "Relación del horrible terremoto" makes the bold claim that Spaniards, once immunized from fire by stone buildings, built higher and more ostentatious "palaces." "Relacion del horrible terremoto," 1-2. "Verdadera Relacion," 95R-95V, "Affairs in the Philippines, 1644-47," 218.

[24] "Affairs in the Philippines, 1644-47," 219. Fayol's description of the earthquake is in agreement with the other accounts. Fayol describes a clear, dry night with a full moon where, without warning, the earth shook for the space of four *credos* (the creed, a statement of approximately one hundred words in Castilian of the tenants of the Catholic faith). As was the case with other authors, he describes buildings swaying like sheets of paper and towers bending like trees while the actual trees snapped. The din of crashing buildings and desperate voices reached a crescendo as the survivors began to pray for salvation. *Ibid,* 219-220.

[25] *Ibid,* 221.

[26] *Ibid,* 222.

[27] Early Modern belief in the upcoming apocalypse, and its roots in Medieval Millenarianism, are well studied. Indeed, among all European societies, Spain demonstrated the greatest belief in an imminent apocalypse. Such ideas were fed by the European discovery of the Americas, and were exported to the colonies. See John Leddy Phelan, *The Millennial Kingdom of the Franciscans in the New World, Second Edition* (Berkeley and Los Angeles: University of California, 1970), 22-23; Delameau, *Sin and Fear*, 448 ("In fact, the entire Christian discourse on the contemptus mundi hinged on an eschatological vision. It began amid the certainty of an imminent apocalypse…which failed to happen."); and Clark, *Thinking with Demons,* 344, 363.

[28] It should be noted that the sins of Manila likely exclusively referred to the sins of *Intramuros,* the Spanish quarter of the city. However, the sins of *Intramuros,* as the clergy understood them, may have included tolerating heresy, heathenism, apostasy, or sodomy amongst the *naturales* or Chinese populations. The exclusion of colonized peoples from pamphlets is discussed below.

unjust; the punishment was deemed in proportion to the sins of the city. For the colonial elite, the San Andrés earthquake was divine judgment, the punishment for their failure to enforce Catholic morality amongst the peoples of Manila.

These narratives of disaster spread throughout the Spanish empire, and in conjunction with institutional responses reflected the colonial elites' fear of impurity of thought. In fact, such narratives justified the clergy's various responses to natural hazards described in the previous chapter. If impious living or collective sin posed such a threat, the Inquisition's search for deviants would be a vital service. Likewise, the *fiestas* that promoted more pious living could potentially avert future disasters. Decadence, impiety, and dissent all become linked through sin in these narratives, which ultimately provoked divine punishment and calamity.

**Narratives of Morality: Virtue**

In these narratives, God also meant for the earthquake to be more than punishment. It was intended to be beneficial. The earthquake was both an opportunity for the community to pursue collective redemption and confirmation of His love for certain individuals. Some were virtuous and therefore were miraculously spared, while others survived and became virtuous because of the traumatic earthquake. Each relation shares such stories to portray the earthquake, somewhat counter-intuitively, as evidence of God's love and compassion.

The beneficial aspect of the calamity is most apparent in God's individual acts of mercy towards the virtuous, which are discussed most extensively in "Relación del horrible terremoto". It states, "and when God wills it, even the stones distinguish between the guilty

and those without guilt."[29] As evidence, the author speaks of a *doncella* of "few years and great quality" who was buried within her home during the earthquake. When she was removed three days later, she emerged without receiving a blow or injury. The author claims to not know who protected the young woman before suggesting the Virgin Mary, who protects "pure" young women, extended her benevolence to the *doncella.*[30] Piety also saved an *indio* in *Extramuros*. He often attended church and was atop a bell tower when the earthquake struck. Rather than falling to his death, however, the unnamed *indio* was guided to the ground by a "man in the air."[31] The author asserts this was the Apostle Santiago, a patron to the poor and invalid.[32]

Both anecdotes showed God being merciful to the virtuous, but the Relación also provides instances of redemption. A "gentleman" with a "broken life and scandals" was eating dinner with an unnamed woman when the tremors began. After surviving the earthquake, he had a chance encounter with a surviving Chinese merchant who desired conversion to Catholicism in the wake of the disaster. The earnestness of the merchant in turn inspired the gentleman, who developed a newfound piety and religious zeal, which he maintained thereafter.[33] For the gentleman, the disaster was an opportunity to begin a more wholesome life (with the earthquake perhaps literally burying the center of his sinful fantasies).[34]

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[29] "Relacion del horrible terremoto," 12
[30] *Ibid,* 12.
[31] *Ibid,* 12.
[32] *Ibid,* 12.
[33] *Ibid,* 13.
[34] Another story of virtue describes a mother with daughters having a feast the night of the earthquake. The mother had purposefully excluded an aunt from the celebration. Upset by their mother's actions, two daughters left to dine with their aunt. The two daughters who left to see their aunt survived, while the others were killed or maimed during the earthquake. In this instance, morality is recognized alongside sin within a family. *Ibid,* 13-14.

These examples primarily exhibit God's love for individuals. The collective piety the earthquake inspired, however, demonstrated His love for Manila. The narratives worked to portray the earthquake was a terrible but necessary act, one that permitted Manila to know its mistakes and correct itself. "Relación del horrible terremoto…", for instance, casts the earthquake as beneficial in its conclusion: "Finally, I offer to end the tale of this humiliation with the ending that God Our Lord seemed to intend, and what followed in the reformation of the customs of the Christians and their conversion to better lives."[35] The anonymous author explains that the number of confessions taken after the earthquake was "unbelievable," while daily public displays of piety exceeded the festivals of *Semana Santa* (Holy Week). The survivors, according to the author now lived by the beach in humble houses, rather than their vain stone homes. The newly pious citizens were always listening to the Mass and taking the rites rather than pursuing wealth. From the description, the survivors understood their flaws and devoted themselves to living by God's laws.[36] The earthquake had thus served its divine purpose.

Miracles that benefited individuals and the community are shared in the two pamphlets as well. "Verdadera Relación…" does not describe as many scenarios involving individuals, though. Mention is made of the *Parroquia de Santiago* outside the walls of Manila, where an *indio* was atop the tower praying when the earthquake began. He was guided to the ground without injury by a man in the sky (hypothesized to be the Apostle Santiago, James in English).[37] This, of course, is the same miracle described in "Relación…". Collective redemption is also described in "Verdadera Relación," which noted the increase in processions and confessions after the earthquake. These collective acts of piety, it

[35] *Ibid,* 14.
[36] *Ibid,* 15.
[37] "Verdadera Relacion," 96R.

argued, showed the gratitude of the survivors and their renewed faith, signifying that the earthquake succeeded in bettering the community of Spanish Manila as God—according to the author—intended.[38]

Friar Fayol's account of individual miracles also mentions the pious *indio* who was saved by an apparition of Saint James (Santiago).[39] Collective redemption, however, receives more attention. The city's faith was revitalized throughout Manila in the wake of the earthquake: "[e]ven the children incapable of sin fell on their knees and begged to confess; nor was there any person so stony-hearted, although so many were made homeless by God, that he was not softened and turned to Him."[40] Fayol also discusses collective redemption in his conclusion: "[T]he shakes…lessened, giving to philosophers abundant material for discussing natural causes, and to theologians and preachers cause for revering the divine judgments and entreating sinners to contrition and repentance. Great changes have taken place in lives and morals; the important thing is that these shall endure."[41] The earthquake, according to Fayol, was not exclusively a harsh reprimand. It provided an essential reinvigoration of Manila's faith. As in "Relación del horrible terremoto," this is the most important consequence of all the death and destruction. The suffering, loss, misery, and death were the prelude to better, holier lives.

Each of these examples of redemption was essential for justifying the earthquake. Only through examples of redemption could the punishment of Manila be proof of God's plan. The purpose of the earthquake was to reprimand the survivors for their moral laxity and to bring them closer to God, not to utterly eradicate them. Nor was this urging to

[38] Verdadera Relacion," 96V.
[39] "Affairs in the Philippines, 1644-47," 221-222.
[40] *Ibid,* 220-221.
[41] *Ibid,* 227.

redemption only applicable to Manila. This story was spread throughout the empire with the intent of rekindling piety in the audience. The earthquake served as both warning and encouragement to the Spanish colonial elite to remember and embrace their Catholic identity. Only then could they avoid the fate of Manila.

**Narratives of Authority: Buildings and Victims**

How these accounts, intended for literate Spaniards, treated the agents and symbols of empire is equally deserving of analysis since each account discussed damage to buildings and the condition of Spaniards who occupied prominent positions in the colony. The description of damaged buildings indicated which physically and symbolically important structures—from the empire's perspective—had suffered. These descriptions were intended to demonstrate the scale of the San Andrés Day Earthquake, as were discussions of mortality amongst prominent figures. However, little attention was given to most of the city's buildings and lower-status residents, including the poor Spaniards, Americans, and *naturales* who perished during the disaster.

The destruction of the cathedral of Manila is prominent in all accounts; "Verdadera Relación" describes how it "came completely to the ground—towers, [the] roof, and chapels—to the foundations."[42] Damage to the Capilla Real (Royal Chapel), as it was a notably ornate building, was also recorded in each pamphlet, as was damage to two convents for young *doncellas*. Damage to churches, convents, orphanages, and hospitals administered by each order were also recorded in the pamphlets and letters. Damage done

[42] "Verdadera Relacion," 96R.

to churches in the surrounding towns was also discussed as was damage to the Real Audiencia and the Governor's *palacio.* [43]

The death or injury of various symbolically important persons (people "of account") was also included in each relation.[44] Details of Governor Don Diego Farjado's survival were shared in all the narrations.[45] "Relación" also offered information on Jesuits of note who perished during the earthquake.[46] Aside from these prominent examples, though, few individuals are named in any of the relations. Instead, the total number of people lost is considered alongside the number of buildings destroyed. The buildings, "which seemed palaces,"[47] destroyed in the first earthquake totaled as many as one-hundred-fifty, while the dead ranged from three- to four-hundred-fifty.[48]

The relative anonymity of the deceased and their houses highlights how the relations, with their limited space, clearly prioritized buildings and persons significant to the colonial state. The Governor-General's home and the Cathedral, symbols of the temporal and spiritual power of Catholic Spain, were deserving of discussion within the pamphlets. By contrast, the dead lower-class Spaniards received only brief mention while the *indios* and Chinese who undoubtedly perished were not discussed at all.[49] The same general rule

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[43] *Ibid,* 96R. "Affairs in the Philippines, 1644-47," 223-225. "Relacion del horrible terremoto," 5-7. Interestingly, buildings associated exclusively with colonial administrators (i.e. the *palacio* or Audiencia chambers) were discussed at different points in the relations. In "Verdadera…" and Fayol's relation, the condition of the governor's house (and his miraculous escape from death or injury) are among the first details relayed when the pamphlets discuss damage to the city's infrastructure. "Relación del horrible terremoto" shares this information as well, but focuses more on damage to churches and the holdings of the mendicant orders. "Verdadera Relacion," 95R and "Relacion del horrible terremoto," 10.

[44] *Ibid,* 10.

[45] "Verdadera Relacion," 96R. "Affairs in the Philippines, 1644-47," 222.

[46] "Relacion del horrible terremoto," 10-11.

[47] "Verdadera Relacion," 95R.

[48] *Ibid,* 96R and "Affairs in the Philippines, 1644-47," 222. Both the published relations speculate that, had the earthquake occurred a few hours later when the city was asleep, many more would have perished.

[49] Also, damages to religious institutes feature in each document. A tragedy chronicled in each document is the destruction of Santa Potencia, a home for young maidens that partially collapsed, crushing ten women and severely injuring twenty. The anonymous, Jesuit relation also details the destruction of the orphanage of San Juan de Letran, which collapsed but miraculously did not kill any of its occupants; the same miracle happened

applies to buildings. No building was specified unless it was viewed as necessary or significant to the colony. Damage to the homes of *Intramuros* was given little attention, and damage to residences outside *Intramuros* was not discussed at all. Instead, the churches, cathedrals, nunneries, convents, religious homes and hospitals, Audiencia, and Governor's mansion were the focus. These emblems of the church and state were what authors decided deserved attention. Damage to them was damage to the emblems of Spain; each account of the calamity drew the attention of the elite, literate audience to how the event damaged the symbols of Spain's power, their power. Thus, a colonial, class-based hierarchy determined whose life and property was significant enough to merit discussion amongst the empire's literate elites.

**Narratives of Authority: The Clergy and the Governor**

Members of the clergy and the colonial administration, the figures whose status in the colonial hierarchy merited attention within these letters and pamphlets, received praise for their actions during and after the earthquake. The clergy and governor-general were portrayed positively in all accounts. The clergy especially were described as providing immediate leadership, while the governor-general handled the logistical challenges of relocating survivors after the earthquake.

The clergy's role in accounts of the earthquake bears resemblance to today's first responders. Friar Fayol provides a particularly detailed report:

> Charity animated by religious zeal was at once displayed by the prebends, canons, and members of the [cathedral] chapter, and, following their example, by all the clergy; and by the religious of the five orders—Augustinians, Dominicans, Franciscans

in the home for young women (*doncellas*) associated with the Misericordia. Each of these anecdotes juxtaposes virtue and innocence to sin and death. The poor and the chaste are crushed, metaphorically and literally, by the sins of the city. "Relacion del horrible terremoto," 7 and "Affairs in the Philippines, 1644-47," 223-224.

> (those of the Society of Jesus), and the Augustinian Recollects—who flourish in these islands in holiness and in zeal for the saving of souls. All, vying with each other in good works, went about amid the greatest danger, risking their lives in the ruins of the fallen houses, which were left broken and torn apart from each other, to disinter the dead, and to save the lives of those who were holding off death for a little time or lengthening their span of life in the clear space made by some timbers—which now were their defense, but soon would be the coffin or tomb of the very bodies which before they protected. Had this religious solicitude been wanting, the injured would also have failed to receive the last absolution, the remedy for the greatest sinners, since contrition is so uncertain, and in such dangers so difficult.[50]

These descriptions of the clergy's responses to the earthquake also appear within "Verdadera Relación," the pamphlet published in Madrid.

In Fayol's account, the clergy rallied soon after the earthquake to support the survivors. They wandered the city and worked in perilous conditions to reach the dead and dying. Their primary objective, though, was not limited to saving lives. Instead, they risked death to administer final rites and absolution to those trapped beneath rubble, to the people who could not be saved. Their response to the earthquake was to save souls. And, according to Fayol's account, the need of the dying was so great that the mendicant orders and clergy put aside all disagreements to meet the city's needs. In this account, and in "Verdadera Relación," the clergy's actions matched an ideal; they were indefatigable champions of Catholicism and representatives of Spain.

Fayol's account goes further, emphasizing that the clergy completed their objective at no small risk.

> While engaged in this labor the clergy experienced no little pain, although mingled with consolation, in hearing from the ruins voices entreating them to hear confessions. The sufferers were consoled by the religious, who exhorted them to [show their] sorrow for their sins by fervent acts of contrition; for these absolution was given to them, as is done on the battlefield or in a storm at sea. Thus all the

[50] *Ibid,* 220-221. All bracketed terms appear as they do in the Blair and Robertson collection; I have made no additions to this quotation.

> religious incurred such great danger that no one felt himself secure; for the shocks did not cease, although they were less severe than at first.[51]

Again, "Verdadera Relación" fully concurs with this account, even using the same phrases, constructions, and descriptions at times. Despite the danger of aftershocks, the clergy braved the rubble. They sought out the voices trapped beneath to ease their passing, to ensure they were ready to meet God. This was done as it would be in war, or during the final moments before a ship sank beneath the waves.

The unpublished Jesuit letter, "Relación…" makes a similar argument for the virtue of the clergy. One anecdote involved the house for *doncellas* in Santa Potencia. The building had partially collapsed, killing or injuring several maidens. Because the trapped *doncellas* were inaccessible, a Jesuit—a member of the same Order as the author—ordered a temporary staircase be built so he could enter the collapsing structure and offer the dying the final sacrament.[52] Other instances of priestly devotion accompany this particularly memorable story, and all three *relaciones* construed the priests as adept and brave responders to the disaster.

Such a flattering portrayal of the clergy offers insight into the intent of the *relaciones*. These documents were each meant to demonstrate the clergy was performing its duties admirably, even heroically. They were successfully shepherding souls to God, even during a mortal crisis like a great calamity. Consequently, these pamphlets were promoting the Spanish Empire itself, arguing that the priests of Spain, a facet of the elite of Manila, were performing exquisitely.

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[51] *Ibid,* 221.
[52] "Relacion del horrible terremoto," 5.

The portrayal of the Governor, Don Diego Farjado, was also favorable in the three relations. Farjado played an essential role organizing the evacuation of Manila after he managed to survive the earthquake. The survivors fled *Intramuros*, heading to the beach of the Bay of Manila. Once there, they began living in huts built in the style of the *naturales*. However, the colonial subjects and Chinese (who undoubtedly recalled the recent massacre of thousands of their compatriots in 1639 and 1640) represented an immediate threat to the Spanish. With all their structures and symbolic power shattered, the Spaniards undoubtedly felt physically threatened. Fayol explains that Farjado and the *sargento-mayor* Manuel Estacio Venegas maintained order through a show of force: the walls of the ruins of *Intramuros* were manned, while regular patrols were sent to *Extramuros* and the beach to guard and protect the Spanish survivors. As a result of the "foresight and care" of the governor, "no lawless acts occurred" even as the Spaniards remained "[s]urrounded…by so many thousands of infidels."[53] Thus the acts of the military and the administrative branch of the Spanish colonial government complemented the bravery of the clergy, exhibiting a robust and resilient Spanish Empire that, even on its frontier, could respond comprehensively to unprecedented calamity.

**Conclusion**

Each account of the earthquake of 1645 presents a well-reasoned metaphysical interpretation of the disaster. Each construed the earthquake as an act of God intended to punish the city for its collective sins. The earthquake unmade the buildings of Manila, entombing the city in the symbols of its vanity as was the will of God. However, each

[53] "Affairs in the Philippines, 1644-47," 226.

account also allows that virtuous people existed within the prideful city, and God or His saints offered protection when possible to the worthy as well as the opportunity for redemption to the survivors. The earthquake thereby became a positive event, a tragedy that bred piety and created a better, more moral, and more Catholic city. Manila, in its reduced state, was thus construed as being capable of rebuilding itself as an ideal Spanish-Catholic city.

The accounts were also concerned with matters of state. Buildings of symbolic or functional importance to the Catholic Spanish Kingdom—the governor-general's house or the cathedral—were discussed in each account. The loss of lives deemed consequential to the state were given attention as well, while the hundreds of poorer Spaniards, *creoles,* Chinese and *naturales* received little attention.

Lastly, each account advanced a vision of the colonial government, both the administrators and the clergy, responding well to a crisis. In all the pamphlets and letters, the governor-general managed the evacuation of the city while protecting the survivors from a potential uprising. All the while, members of the clergy crawled through rubble, risking their own lives to hear the final confessions of the dying or trapped, thereby saving souls from eternal damnation. Each member of the colonial administration, as portrayed within the pamphlets and letters, performed their duties admirably, demonstrating the capability of the Empire to maintain even its most distant colonial possessions.

Each of these accounts turned the San Andrés earthquake into a vindication of the Spanish colonial model. They confirmed sinful, non-Catholic behavior could provoke divine censure, but also argued for potential redemption and betterment. And in their documented response to the crisis, Spanish administrators and clergymen demonstrated their resilience. The calamity, while painful for Manila, would yield an improvement in the

city precisely because it was under the aegis of the Spanish, Catholic empire. The suffering was described as deserved, justified, and beneficial.

## From Metaphysical to Physical: The Eruption of Mt. Taal

It would be one-hundred-nine-years before another disaster in Luzon, the eruption of Mt. Taal, generated as many circulated narratives as the San Andrés Earthquake. The 1754 eruption, already discussed in relation to institutions, also demonstrates shifts in elite Spaniards' attitudes towards natural hazards. Narratives of Mt. Taal do not provide a "secular" or modern understanding of natural hazards as products of the natural world devoid of divine intent.[54] Instead, narratives of the eruption of Mt. Taal that were circulated around Luzon—all of which were composed by members of the clergy stationed in *pueblos* in view of the mountain—emphasized the physical consequences of the eruption over its moral implications. Biblical allusions still link these accounts (and their authors) to the Catholic morality that defined earlier stories of natural hazards. The narratives' emphases,

[54] How natural hazards were rationalized and conceived of amongst intellectuals in the mid-eighteenth-century Spanish Empire has not been addressed by any scholarship encountered by this author. Lorraine Daston and Katherine Park, as well as Alfred Crosby concur that during the eighteenth century Europeans began to systematically measure the physical world, believing it operated under comprehensible laws. Thus, from the Early Modern period was born the Enlightenment, rationalism, and modernity. However, the examples cited above only discuss North European Empires, and did not specifically study natural hazards nor Spain and its colonies. There are, however, a few historians who discuss natural hazards within the Spanish Empire in this period. Agustín Udías, in an article contrasting responses to the 1755 Lisbon Earthquake to a seventeenth century calamity, argued that intellectuals increasingly understood natural hazards to have physical, as opposed to metaphysical, causes. Stuart Schwartz in *Sea of Storms* argued that empires' increased exposure (and vulnerability) to hurricanes encouraged them to measure and observe storms as early as the latter half of the seventeenth century. However, Schwartz's examples of researchers studying storms as physical phenomena prior to the late-eighteenth century are primarily English and French. Spanish schools dedicated to the study of storms would emerge in the mid-nineteenth century, with the Jesuit Observatories in Havana and Manila. See Alfred Crosby *The Measure of Reality: Quantification and Western Society* (Cambridge: Cambridge University, 1997), 17, 56-58, and 187; Agustín Udías, "Earthquakes as God's Punishment in 17th- and 18th-century Spain," in *Geology and Religion: A History of Harmony and Hostility,* ed. Martina Köhbl-Ebert (London: The Geological Society of London, 2009), 41, 44, and 46; Daston and Park, *Wonders and the Order of Nature,* 239-230, 304, 352, and 361-363; and Stuart Schwartz, *Sea of Storms: A History of Hurricanes in the Greater Caribbean from Columbus to Katrina* (Princeton: Princeton University, 2015), 75-79.

however, are the physical destruction of the eruption, which is linked to the sudden destitution of the survivors.

**Sources**

Three relations on the tremendous eruption of Mt. Taal in 1754 inform this dissertation. The first is titled "Descripción ajustada y exacta relación del bolcan de Taal, y su furiosa erupción..."[55]. The author is not specified within the document but was a member of the clergy assigned to the area. The narrative contains twelve folios (the equivalent of twenty-four single sided pages), which include a drawn image of the volcano itself. The relation may or may not have been printed and circulated (though the copy accessed in the Archivo General de la Nación in Mexico City was printed). Its presence in Mexico, a stop on the route to Madrid, implies it was at least shared amongst the administrative elite.

The second relation is titled "Relación de lo acaecido en este Pueblo de Taal y Casaisay en las Islas Philipinas desde el día 6 de Junio de 1754 hasta de Diz del mismo año".[56] The relation is signed December 5th, 1754 by one Friar Aguirre, who was assigned to the area and survived the eruption. This dissertation relies on a copy currently stored at the New York Public Library. A postscript, presumably added by the transcriber, reads, "[t]his has come from Mexico without variation of style, accent, or comma".[57] This postscript

[55] "…El año de settesientos cinquenta y quatro." From this point forward, this document will be cited using the title "Descripción ajustada…". The full citation is as follows: "Descripción ajustada y exacta relación del bolcan de Taal, y su furiosa erupción el año de settesientos cinquenta y cuatro." *AGN, FILIPINAS, legajo* 884, Expolio 1.
[56] Relation of that which befell this town of Taal and Casaisay in the Philippines from the 6th of June of 1754 until December of that same year. The relation is available at the New York Public Library as part of the Obadiah Rich collection, a one-hundred-two volume collection of transcriptions made by Mr. Rich, an American diplomat to Spain in the latter part of the nineteenth century. Mr. Rich's transcripts were made from documents originally gathered by the famous Spanish historian and archivist Juan Bautista Muñoz, who was commissioned to write a history of the empire by King Carlos III. While he did not complete his multi-volume history, he and his work were instrumental in the foundation of the Archivo General de Indias in Seville.
[57] "Relacion de 10 acaecido en este pueblo de Faal y Casaisay en las islas Filipinas, desde el dia primero de junio de 1754, hasta cinco de diciembre del mismo ano," Reel 96, Obadiah Rich Collection, *NYPL*, 128r-131v.

indicates the relation, whose original copy is in the Archivo General de Indias, came to Madrid (and then Seville) from Manila via Mexico City. However, it is unclear whether the account was published or widely circulated.

The third relation is available through Father Miguel Saderra Maso's *The eruption of Taal Volcano, January 30, 1911*. Within, Maso transcribed the relation of one Friar Buencuchillo (alternatively referred to in some publications as Bencuchillo), who was stationed at Taal during the eruption of 1754.[58] How far this account circulated is unclear. However, the substantial agreement between the three accounts provided by clergymen implies these accounts circulated throughout Manila (and potentially through other parts of the Spanish Empire). Furthermore, Father Miguel Selga's research confirms that a separate, brief account of Taal's eruption (authored by a Jesuit friar) was published in Madrid in 1757. This account is, according to Selga, in agreement with the more detailed chronicle by Friar Buencuchillo.[59]

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An important note for researchers: at the NYPL, the document's title is listed incorrectly; "lo" is replaced with 10 and "Taal" with "Faal." From this point onwards, this document will be referred to as "Relacion de…"

[58] Miguel Saderro Maso, *The Eruption of Taal Volcano, January 30, 1911* (Manila: Bureau of Printing, 1911), 9-11.

[59] Miguel Selga, S.J. "An Account of the Eruption of the Taal Volcano in 1754 by a Jesuit Missionary." *Publications of the Manila Observatory*, vol. VI, No. 4, 1-3. The anonymous, Jesuit account was published in Madrid in Volume 16 of *Cartas Edificantes y Curiosos escritos de las Misiones Extranjeros y de Levante por algunos Misioneros de la Compañía de Jesus* in Madrid in the year 1757. Father Miguel Selga (S.J.), former director of the Manila Observatory at the Ateneo de Manila, also transcribed part of a document titled *Memoria of Taal.* The *Memoria* was written in Tagalog, which he translated to English in *Notes on the Eruption of the Taal Volcano* (Manila: Bureau of Printing, 1941), 8-10. Because the account is brief and almost certainly was not circulated beyond Taal or Luzon, it was not considered alongside the three documents described above, all of which seem to have circulated amongst colonial elites. Further, it is unclear (without seeing the document in person) whether the document Father Selga translated from Tagalog was originally composed in that script or is a reproduction of a document first written in Castilian. The document's uncertain history, while certainly exceptional, renders it unsuited for this section on public or semi-public narratives among Spanish elites.

**Accounts of the Eruption**

"Descripción ajustada…" provides the most complete account of the eruption. It begins with an outline of the province of Taal itself, calling it "one of the best of the island of Luzon" despite being rather small because it is very "rich, and suitable for all types of crops, with many houses and an abundance of cattle, cows, horses, and *carabaos* [water buffalo]."[60] According to the author, the province had nearly a dozen *pueblos* prior to the eruption.[61] This entire province, the author explains, was surrounded by mountains which fed Taal's lake, which in turn released its water south toward Pansipit and Mt. Macalot, where a great river ultimately "according to the common opinion of the *naturales* feeds into the sea."[62] This created no less than eighteen rivers in area surrounding the lagoon, though the author says only eight were of any considerable size. These mountains and rivers were, to him, the source of the considerable mineral and agricultural wealth of the province.[63]

After establishing the natural wealth of the province, the narrator discusses Mt. Taal. The volcano and its unique geology are shared with the reader as are the mountain's five most recent eruptions. The damage each of these eruptions caused is recounted, as are the

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[60] "Descripción ajustada…," 3F.

[61] The author provides information on each town and its location relative to lagoon which contains the volcano Mt. Taal. First among them was Balayan with 1,500 *tributos*, which stood to the west of Mt. Taal. To the east of this town and to the south of the volcano was Taal the *pueblo*, which had 1,300 *tributos*. Further east, on the "same parallel" was the town of Bayan, which possessed 1,200 *tributos*. Yet further east (south east of the volcano) was Balangas, which contained 1,500 *tributos* (it is also noted to be the only town that escaped destruction). Finally, at the eastern edge of the province was Rosario with four hundred *tributos*. Then, taking the "western route," from Rosario, one could encounter Lipa to the North (approximately east of the volcano) and its five hundred *tributos*. Following the same path, one encountered another town near the lagoon called Sala, with 150 *tributos*. And then, on the northern edge of the lagoon and Mt. Taal one would encounter Tanavan (sic. Tanaban). Then, continuing around the lagoon, one encountered Bayuiungan (sic Baybiungan) just across from Balayan. *Ibid,* 3F. How the author "maps" the province is also worthy of attention. He does not provide an aerial overview of the province superimposed on a cartesian plane, like modern maps, but instead bases location on paths. The author took readers in a circle around Mt. Taal and its lake, starting and ending at the town of Balayan, the largest *pueblo* of the province.

[62] *Ibid,* 4F.

[63] *Ibid,* 4F.

effects of the eruptions on rivers and towns.[64] After briefly summarizing the eruption of 1749 (see Chapter 3), the letter begins to discuss the massive eruption of 1754.

The letter states the volcano began tremoring as early as 1753. As of the 6th of May 1754, though, it became visibly active, producing "mountains of light" and fire measuring up to ten *brazas* above the volcano.[65] Although spectacular, this continued without inflicting serious harm until the 2nd of June, when the "havoc" began in earnest: great and sudden noises began alongside violent surges in the flames. By ten that night, the flames reached the sky and stones were thrown from the mountain top. An easterly breeze directed the fires, smoke, and ejected materials to the west, where they consumed the pueblo of Babiyungan. Not an herb or animal was left, while the residents who had not fled "had perished embraced" by some mixture of raining flames and boulders.[66]

The volcano continued in this state without producing novel harm until the 10th of June, when ash and stone "interred" Babisungan while damaging Panyholan, Bilibinyan, Abaca, and Banaga.[67] On the 23rd of June, the ash clouds produced by the mountain generated thunderstorms, which continued until nine at night on the 24th of June, when the mountain calmed. The reprieve ended on the 26th between noon and one, when horrible storms began and a huge billow of smoke rained ash on the whole area surrounding the

[64] *Ibid,* 6F. The eruption of 1749, which continued in some form until 1753 as a new summit emerged, is given special attention. As previously discussed, this eruption prompted two solemn processions and masses meant to pacify the volcano. The second was successful in quieting the volcano, according to the narrator, and a heavy cross was placed at the summit of the *isleta* (tiny island). Given the unique geography of Taal, it is difficult to determine whether the isleta is the island of Taal itself, or an island within Taal's crater lake. *Ibid,* 6V.

[65] *Ibid,* 7V. The measurement of ten *brazas* should be viewed with suspicion. A *braza*, a Spanish unit of length, was subject to change over centuries (standardized units of measurement would not be employed until the nineteenth century). Furthermore, it would be difficult to accurately measure any plume of flame or smoke emanating from the Caldera. Ten *brazas* may be viewed, though, as a loose estimate, an attempt to quantify and appropriately reflect a sense of dread at the perceived size and scope of Taal's activity.

[66] *Ibid,* 8F.

[67] *Ibid,* 8F.

mountain, while ejecta fell from the summit to the east, destroying the *pueblos* of Sala, Lipa, and other sites all the way to the pueblo of Tanavan.[68]

Smoke continued to pour from the mountain until the 11th of July, when great roars began at three in the afternoon. Miracles, portents, and omens briefly appear in the narrative here for the first and only time. Flames in the town of Lipa seemed to reach for Taal and flames from Taal reciprocated. Meanwhile, clouds of ash caused the sun to appear surrounded by fire and create multiple suns.[69] According to the narrator, these were omens of greater miseries yet to befall the area.[70]

On the 13th of August, and again on the 19th, unprecedentedly large flames erupted from Taal. The next eruption began on the 17th of September, culminating in the destruction of the fields of Taal, Bavang, Sala, Tanavan, and parts of Lipa on the night of the 25th. This destructive outburst even reached distant towns like the easterly Santo Tomas.[71] Such vicious eruptions continued to destroy parts of the surrounding pueblos into November. From the 3rd to the 6th of that month, a violent eruption threw materials into the lagoon surrounding Mt. Taal, burying parts of the pueblos in ash while thunderstorms raged. During this eruption, small rivers dried up, though their names are not provided by the author.[72]

Earthquakes continued from the 6th until the 8th of November, when stones and ash destroyed the fields of Indang and Balayan, along with parts of Silang. The same stones produced a tsunami in the lake that washed through various towns.[73] Another great eruption occurred on the 14th, one that supposedly covered the surrounding ten-league-

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[68] *Ibid,* 8V.
[69] Such phenomena would today be explained as reflection; ash at a microscopic level resembles shards of glass, while sulfur-containing compounds (especially sulphates) have a propensity for distorting visible light.
[70] *Ibid,* 9F.
[71] *Ibid,* 9v-10f
[72] *Ibid,* 10V.
[73] *Ibid,* 10V.

radius in such quantities of material that not a single herb could be found. On the 25th, continuous earthquakes began, raising the water in Taal's lagoon, which "ate" two streets in Tanavan while reaching the patio of the church in Sala.[74]

After a brief examination of the damage inflicted on various *pueblos*, the author proceeds to describe the 3rd of December:

> At three in the afternoon a tremendous fire
> left the volcano, and from all the lagoon along with horrible
> earthquakes, and terrible bellows inside the volcano, and
> in the clouds and amidst the smoke continuous lightning,
> all raining down, as it consistently was, and
> destroying most of the houses of the towns of
> Sala, Lipa, and Tanaban. The fourth day it began again to rain
> all these things, and the sounds maintained themselves without respite in all
> the jurisdictions. Neither an atom of herb nor animal, domesticated
> or of the mountain, [remained, owing to] the lack of water,
> corrupted by the ash and the volcano on the sixth…[75]

This was followed by another dramatic eruption of the 12th before the mountain finally quieted. With the descriptions of the eruptions concluded, the author begins to discuss the damage done. He calls the harm incomparable, citing the piles of ash and stones thrown by the volcano and the resulting loss of trees, cattle, and homes. The eruption contaminated the drinking water as well, immediately jeopardizing the survivors. Although he notes the afflicted had faith and were receiving aid delivered by the Governor-General in Manila, the author's prognosis for the area is grim. The province, he says, is now afflicted by disease, and he fears the next season of raids from the *Moros* (slavers from the Sulu Sultanate) will do further harm.[76]

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[74] *Ibid,* 11V.
[75] *Ibid,* 12F.
[76] *Ibid,* 12V

The most notable difference between this relation and discussions of the San Andrés earthquake is the relation's length. This is, at some level, to be expected. A protracted volcanic eruption lasting six months allows for observation in a way that an earthquake that lasted four *credos* (not including its aftershocks, which continued until December 4, 1645). The eruption of Mt. Taal lasted several months and was punctuated by highly destructive incidents that included storms, earthquakes, landslides, and tsunamis from the lagoon. Given the length of the eruption and all the natural hazards it generated, it is sensible that a relation discussing the volcano would be longer than a pamphlet discussing a highly impactful earthquake.

Another difference related to the duration of Taal's eruption is the narrative's attention to chronology. References to dates and times were not absent from pamphlets in 1645, but the times provided were less specific and often referred to saints' days rather than calendar dates. This anonymous account of Taal's eruption, however, utilized dates. The effect of reliance on Gregorian dates, intended or not, is a newfound rhetorical distance between the acts of God in 1645 and the eruption of Taal in 1754.

The relation's treatment of miraculous occurrences further separates the eruption from divine intent. Miracles were not common in the lengthy relation. The appearance of multiple suns and migrant flames during the interregnum between eruptions is one of the few moments where omens and divine signs are discussed. The emphasis of the entire relation is not on how the destruction wrought by the volcano reflects divine intent, but the destruction itself. That is not to say God is absent; a procession in 1753 was mentioned, as were the ways the ash distorted the sky. However, a defining feature of accounts of the San Andrés Earthquake, God's will, is downplayed in this account.

Instead of God's will, the relation focuses on the destruction and poverty imposed by the volcano. The eruptions did not leave an herb or animal in what once was one of the richest provinces in southern Luzon. Furthermore, damage to important buildings and lives, while delivered in passing, again emphasizes the destruction caused. With miraculous occurrences given relatively little attention, the focus of this account inevitably becomes Taal, the source of the devastation. The eruption consumes the narrative, allowing little space to discuss individuals, man-made structures, and even—to a limited extent—the Almighty. And throughout the narrative, the eruption's destructive capacity is conveyed through items that matter to the Spanish-Colonial state: herbs and farms, cattle, structures, and *tributos*. This strategy for conveying Taal's power continues to the letter's conclusion, when the author asserts that the threat of an epidemic and future slave raids will guarantee, "[the] loss of the most amenable and rich province that the island of Luzon contains."[77]

Ultimately, this particular narrative differs from pamphlets and letters written a century prior because the natural hazard no longer exists exclusively to convey moral truths. The calamity was not explicitly portrayed as divine retribution. The second important distinction is the emphasis on physical and economic damage rather than metaphysical cause. The eruption of Mt. Taal was an economic catastrophe for the colonial government. The suffering of individuals, and their potential redemption, was comparatively unimportant in this narrative. Damage was not understood through morality but instead in relation to the colony, which lost a rich province and, by extension, its tribute.

[77] *Ibid,* 12V.

The second relation, written by another priest stationed in Taal province and titled "Relacion de lo acaecido en este Pueblo de Taal y Casaisay…" is comparatively brief. Three folios in length, it foregoes any history of the province or Taal's previous eruptions, only covering the periods of heightened activity between the 2nd of June and the 6th of December. According to the relation, the volcano's activity increased on the 2nd of June. That night, around ten in the evening, an explosion lasting two hours began, which shook the earth. The same happened the next night, friar Aguirre explains, "and since then we have not ceased to see smoke every day elevated up to the clouds; some days thunder and lightning; others tremors of the earth with a great murmur so great that we had gone deaf…".[78]

The volcano continued to erupt in this fashion, with the intensity of the tremors gradually increasing, until the 24th of September at eleven in the night. Then, the mountain began to emit flames and loud explosions (friar Aguirre likened them to artillery shots). The fire momentarily subsided before returning on the 25th, accompanied by earthquakes that forced friar Aguirre's convent to be evacuated. The night he evacuated, friar Aguirre testifies that rocks rained from the sky until the sun rose the following morning. The rocks, he observed were black like carbon or iron and had caused some houses to fall. The friar states events continued in such a fashion until the 1st of November, with the volcano periodically generating storms, earthquakes, and clouds of ash. He writes, "[f]or peace was given for a day, and at times 3 and 4 [sic]; but since the first of November until the present day [the 6th of December] all has been horrors; hardly has an hour passed where there were not horrible storms, lightning, artillery, and fusillades with such noise, as if two combatants fought."[79]

[78] "Relacion de…", 128r.
[79] *Ibid,* 128v.

During this time, the friar explains the flames atop the mountain never vanished from view, and earthquakes would persist for three days and nights, along with raining rocks and ash. It was at this point, counselled to do so by others, that Aguirre permanently evacuated from Taal, fleeing to the nearby town of Casaisay, a league away. Before leaving, he and a companion brought an image of the Virgin to place in the temple of Casaisay.

On the 27th of November the eruption approached its conclusion, prompting Aguirre, the Alcalde of Taal, and a companion to seek shelter inside the convent as fires shot higher than they could see. From the 29th until the 5th of December, the ash rained continuously. Coincidentally, the 30th of November—noted to be the day of San Andrés by the author—was especially terrible as the ringing of the explosions from the volcano filled the air. As the ash in the town accumulated, the narrator says he heard a tower and the kitchen of the convent collapse. Aguirre contended it was a miracle that his segment of the roof successfully bore six *palmas* of ash.[80]

Taal was not as fortunate as Casaisay, according to Aguirre. It received at least ten *palmas* of ash, and most of the buildings collapsed.[81] More significant for the survivors, though, not a bit of wheat survived the eruption, nor did any rice. Worst of all, there was no longer a viable source of freshwater. Nor did the disaster conclude with the eruption, since a "hurricane" lasting from the 3rd to the 4th of December destroyed yet more houses, with Aguirre noting that after the storm he had survived the fury of all four elements.[82]

Unsurprisingly, Aguirre concludes his short account on a pessimistic note: "This is what has been seen, has befallen [us], and can be verified. That which will be discovered in

[80] *Ibid,* 129R.
[81] *Ibid,* 129V.
[82] The four elements are fire for the volcano, air for the hurricane, earth for the earthquakes, and flooding for water. Aguirre mentions, in retrospect, that the eruptions caused one of the rivers, Parosipit, to run dry while others had flooded.

the future we do not know; but we can expect a plague, for we find ourselves encircled by such flooding…it is a blow to see the poor Indios so malnourished and sickly…the carabaos, cows, and horses interred. Barely an animal has remained alive, and those that remain are so thin that they will live with difficulty."[83] He ends his account with, "I give thanks to God that I remain alive, although…poorer…[with] nothing but what I have on my person".[84]

This narrative, like the "Relación ajustada," is not organized around morality. Instead chronology plays an essential role. The focus is, beyond a doubt, the eruption itself and the experience of a six-month natural assault. This story is more personal than the other account as it focuses on Aguirre's struggles to survive. However, aside from brief moments where Aguirre laments the destruction caused by the eruption, his account has little space for anecdotes or stories of individuals suffering from the eruption. Furthermore, despite the trauma of the experience, Fr. Aguirre does not engage in the explicit moralizing characteristic of accounts from 1645. God is, however, given thanks for preserving the narrator's life during this crisis. The viciousness of the eruption, though, is not attributed to His wrath or human wretchedness. Instead, the eruption is an event that befalls the region. Lacking a moral undertone or a clear discussion of miracles, the story almost inevitably drifts to the natural power of the volcano. Taal cannot be ignored as it destroys and consumes the towns of Taal and Casaisay, burying them under ash until their buildings collapse. It redirects rivers, shakes the earth, prompts storms and hurricanes, and throws fire higher than can be seen. What it leaves behind is tragedy: starving Indios, animals, and priests

[83] *Ibid,* 129v-130r.
[84] *Ibid,* 130r. The original document concludes with the phrase, "…on my person, that is blacker than a *canborrero,"* a word no longer used in Castilian. Clearly, though, the term references a person or object known for darkened skin.

deprived of food, water, or any clear path forward. The account is therefore the tale of overwhelming natural force and the impoverishment that followed.

The final account of Taal's eruption is the *relación* by Friar Buencuchillo, who was stationed in the Pueblo of Taal. Based on his story, he is likely the companion described by Friar Aguirre. His account begins between nine and ten on the night of the 15th of May. He writes that the volcano threw stones and fire down its slope, consuming the pueblo of Bayuyungan. Then, on the 2nd of June, the eruption progressed to a heightened state, lighting itself in a perpetual fire.[85]

This continued, with intermittent thunderstorms caused by the superheated ash cloud, until the 25th of September, when the eruption again intensified. Fr. Buencuchillo says that during the 26th he and others abandoned their dwellings, as some houses had collapsed under two *quartas* of ash. The earth was scorched surrounding the towns was scorched, and any plants were buried. Then on the 1st of November, the volcano momentarily calmed. Another eruption reached its destructive height on the 15th, when the ejecta grew so large that great waves formed in Taal's lake, causing most of Taal (the town) to evacuate to Casaisay. Fr. Buencuchillo says that only he and the alcalde "resolved" to remain.

The 28th of November saw another furious eruption that forced the friar, the alcalde, and the rest of Taal to evacuate completely. In a tangent, the friar explains that he encountered a mother with several toddlers during the evacuation and, moved by pity at the crying, he took one into his arms. The toddler carried by the priest (the "little indio" in

[85] Miguel Saderra Maso, *The Eruption of Taal Volcano,* 9.

the narrative) ceased his tears upon entering the friars embrace and made no more sounds as they fled "this living picture of Sodom…".[86]

After the waves and earthquakes ceased the next day, several evacuees, including the friar, returned to Taal. However, another eruption began soon after, causing the friar to mount a horse and flee to Casaisay permanently. There, a rain of mud and ash lasted for three days, creating a fierce wind that prevented any lantern from being lit and that blotted out the sun. The only illumination was the fire of Taal's summit. Fr. Buencuchillo huddled with the Alcalde and one Friar (likely Aguirre), spending his days directing *naturales* to clear ash from the rooves lest they collapse. The "three Europeans" waited out the worst of the eruption beneath the stairs of the Convent, which they deemed the safest place amidst the earthquakes, ash, lightning, and fire. There they waited for "what God might dispose with regard to us."[87]

He notes, like Friar Aguirre, that the night of the 30th of November marked the apogee of the eruption, as various houses collapsed all around them. Likewise, he observed that parts of the roof of the convent caved in. Finally, after a brief reprieve, they were struck on the 3rd and 4th of December with a *baguio* (great storm or typhoon), which was seemingly the final product of the volcano's eruption.[88] After the eruption, Buencuchillo returned to Taal to find almost nothing remained. The river was filled with mud, while only posts, beams, and the walls of the convent remained. Within, the holy vestments were ruined, and twelve people were thought to be dead, either swept away by waves or buried in their collapsed homes. He writes of Taal (focusing on the impoverishment of the town), "[t]hus the beautiful town of Taal remains a deserted wilderness and reduced to the utmost

[86] *Ibid,* 9.
[87] *Ibid,* 10.
[88] *Ibid,* 10.

misery, while once it was one of the richest and most flourishing places."[89] Villages to the west of the lake had also suffered greatly. Some had trenches dug by the many tsunamis from the lake, and the Pansipit river was noted to be blocked completely, which had caused flooding in the ruins of Lipa and Tanauan. Hardly an animal or "a green blade" of grass remained. Ultimately, the friar concludes his account noting that, of 1,200 *tributos*, only 150 remain in the impoverished region. The rest had migrated.[90]

Friar Buencuchillo's account is similar to the previous two *relaciones*, though with greater echoes of accounts of 1645. The account is organized around chronology with the eruption at the center of the narrative. Friar Buencuchillo does afford himself a more active role in the story than the previous narrators, acting as a leader alongside the alcalde; he directs *naturales* to clean rooftops, he orders evacuations, and he picks up a child to help a fleeing mother. He hides with other Europeans rather than the *indios,* whom he never names or emphasizes beyond their role as supporting actors in his story. Ethnicity and the colonial hierarchy are thus as inescapable in his narrative as the eruption.

The terror of the experience, however, comes across strongly. Although the narrative draws comparisons to Sodom and says that the fearful Europeans consigned themselves to God, theology and moralizing within the account are minimal. Sodom functions as analogy and allusion, a comparison meant to evoke an apocalyptic image. The depravity of the ancient city is absent, or at least not emphasized. The event is never characterized as God's punishment.

The decision of these three narrators to not explicitly characterize the eruption of Taal as divine punishment does not indicate such thoughts were no longer present. Instead,

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[89] *Ibid,* 11.
[90] *Ibid,* 10-11.

their decision signifies a shift in narrative focus from moral redemption to natural destruction, impoverishment, and—in Friar Buencuchillo's tale—some discussion of human suffering. Each account offers a story of surviving a nightmare that approached the terror experienced on Sodom's last night. Within the narrative, Taal's eruption is an exceptional event stemming from nature; it is natural, not supernatural—even if it transpired according to God's immediate will. Thus, the focus is not God or morality, but nature, the survivors' condition, and whether or not Taal can continue as a rich province in service to the Spanish-Colonial state. That is an essential change from the narratives of 1645, where people's suffering was construed as having a greater, symbolic meaning.

However, the moral component of natural hazards, essential to understanding the earthquake of 1645, had not vanished from Manila or the world by the eighteenth century. The dying archbishop's published pastoral letter from 1754, discussed in Chapter 3, called the eruption of Taal a divine calamity. It was a calamity that, accompanied by the Moro raids and the failure of the galleons, reflected God's displeasure with the greed of Manila and the regular clergy especially. To the archbishop, writing from what would be his deathbed, these events were all God's warning to the arrogant and avaricious that they would suffer as they did in 1645. If they continued to exhibit such vices with pride, He would undoubtedly assail the Philippines until the Spaniards lost the territory.[91]

But the archbishop did not personally experience Taal's eruption. Rather, he was a relatively distant figure who utilized the event and its effects on Manila to reprimand the clergy. The other narratives, in contrast, depict sadness and shock at the newfound poverty of the province of Taal and its peoples. And this shift in emphasis to the physical

[91] *AFIO,* Legajo 50, Documento 22, 4V-5R, 6R, 25V-26V.

repercussions of the eruption, especially its effects on the laborers, tributes, and crops vital to the colonial state, affected how the eruption itself was discussed. Thus, within the three friars' accounts, awe and horror at the physical spectacle of an erupting volcano superseded the calamity's metaphysical significance.

## Conclusion

The comparison between the 1645 earthquake that destroyed Manila and the eruption of Mt. Taal in 1754 is not perfect. The earthquake destroyed *Intramuros,* the Spanish quarter of the capital city of the Philippine colony. Documents that failed to account for the dead *naturales,* Chinese, and other residents of *Extramuros* construed the earthquake as a Spanish tragedy generated by Spanish sins, which God appropriately punished. Simultaneously, the earthquake offered an opportunity for the moral improvement of Manila, and all accounts asserted the clergy and the governor-general managed the disaster well, exemplifying the virtues of the Spanish Empire.

The eruption of Mt. Taal did not affect Manila directly. Instead, towns containing a handful of Spanish clergymen and thousands of *naturales* bore the brunt of the eruption. Accounts of Taal's eruption focused on two aspects of the disaster: how the physical phenomena of the eruption progressed over six months and how it impoverished the province. The metaphysical significance of the event was downplayed, as were discussions of individuals who perished or survived the disaster. Instead, damage to tributes, farmland, and towns—quantifiable categories visible to the state—were emphasized in accounts, as were descriptions of the volcano itself. Thus, the eighteenth-century accounts expressed fascination with physical rather than spiritual repercussions while reflecting the growing prominence of the state in Spanish elites' comprehension of calamity.

Why this change in attitude occurred is not answered by the few documents available in 1645 and 1754. However, what is made apparent by these documents is that colonial elites' stories about Luzon's environment changed. The environment did not lose its connection to morality in the eighteenth century. The archbishop's invectives against the clergy demonstrate calamity could still be linked to sin, as do letters describing subsequent eruptions of Mt. Taal. But the metaphysical principles of the seventeenth century that allowed a disaster to be both punishment and opportunity—a chance to demonstrate Catholic piety and resilience—were absent in accounts of an eighteenth-century calamity. The unintended consequences of this shift in discussions of natural hazards were twofold. First, hazards took on new prominence within narratives; absent a spiritual cause, how natural hazards unfolded, how they altered the environment, and how they harmed people became more important within accounts. The second consequence brought on by decreasing reliance on spiritual rationale was that afflicted communities became the victims of hostile, abstract forces of nature rather than sinners deserving of God's anger.

# Chapter 5: *Fiestas,* Calamity, and Cultural Hybridity

The previous three chapters explored how the wealthy, powerful, or educated—a subset of the Spanish population—understood disaster; nothing substantial has been said in this dissertation about what natural hazards represented to the majority of Luzon's inhabitants. This disproportionate attention to fewer than one-thousand colonists and their institutions is a consequence of the surviving source material. Almost every document from the Early Modern Philippines was composed by Spanish administrators and clergymen, and these documents expressed the financial and evangelical ambitions of educated colonizers while reflecting their authors' self-assuredness, namely the 'knowledge' that they originated from a superior culture. In turn, these documents excluded the Chinese, indigenous peoples, *creoles,* and poorer Spaniards who inhabited Luzon.[1]

Still, there are, to paraphrase ethno-historian William Henry Scott, "cracks in the parchment curtain," moments when Spanish sources knowingly or unknowingly chronicled indigenous peoples' beliefs, lifestyles, and customs.[2] And those customs can be tracked

[1] Nor do the sources offer a complete portrait of Spaniards' experience of disaster. As the previous chapter demonstrated, the loss of life—even Spanish life—due to natural hazards like storms, earthquakes, and volcanic eruptions in Early Modern Luzon was barely mentioned in pamphlets and widely-circulated correspondence. The literate classes instead focused on damage done to their property (Chapter 2), institutions (Chapter 3), and ambitions (Chapter 4).

[2] The eponymous phrase of Scott's monograph, *Cracks in the Parchment Curtain* (1982) is an allusion to the Iron Curtain, the imagined barrier imposed by the USSR on Eastern Europe that prevented the transmission of ideas, beliefs, and information (as well as material goods and peoples) between the First and Second World. However, while the Iron Curtain described by Winston Churchill was imposed by Soviet military might (iron and steel), the Parchment Curtain exists within manuscripts. Because the only written sources that describe the Philippines in pre-Hispanic times are Spanish administrative documents, information on indigenous peoples is only available from the recorded observations of Spaniards. Thus we, as modern scholars, are trapped behind a seemingly impenetrable barrier, a Parchment Curtain that separates the pre-colonial past from the present and prevents any comprehensive understanding of the former. However, Scott asserts the Parchment Curtain has cracks, moments where manuscripts reveal more than their authors intended about indigenous peoples. These cracks include asides or observations detailing indigenous peoples' relation to the environment through feasts, myths, celebrations, gods, agriculture, and hunting. Further cracks appear when the form of Spanish documents is considered—how sources worked to portray *naturales* or sought to avoid

through time as they surreptitiously appear throughout the historical record. To better study the cultural impact of Luzon's natural hazards, the concluding chapters of this dissertation focus on reconstructing the pre-literate populace's experience of natural hazards. This chapter focuses on the *fiesta de las lagrimas de San Francisco*, which commemorated a miracle brought about through the San Andrés earthquake of 1645. The role of the *fiesta* stood at the point of convergence between the rituals and beliefs of Catholic- and pre-contact cultures, with the natural hazard instigating the formation of *creolized* forms of celebration and piety.

## The *Fiesta de las Lagrimas de San Francisco* as a Crown- and Church-Approved Festival

Chapter 3 introduced *fiestas* like the *fiesta de las lagrimas* as an institutional adaptation to the natural hazards prevalent in Luzon. The *fiestas* directed prayers towards placating God's wrath at the islanders' sins or celebrating the intervention of a saint. The *fiestas* also reaffirmed the power of Spanish Catholicism: communal displays of faith could move God and thereby afford some manner of control over the environment. If *fiestas* could prevent calamity, they could serve as confirmation of the veracity of the Catholic faith and, by extension, the institutions that represented that faith.

Undoubtedly, most local participants did not share this particular understanding of *fiestas.* The vast majority of people marching in processions or hearing mass were *naturales*

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detailing certain customs or beliefs. And lastly, cracks in Scott's Parchment Curtain occur in customs from the pre-contact past that have persevered into the present day. What Spaniards seeking to control a distant colony saw fit to include, exclude, or describe in detail within their accounts reveals how *naturales* resisted or confounded Spanish efforts at control, as well as how Spaniards adapted to such resistance. William Henry Scott, *Cracks in the Parchment Curtain* (Quezon City: New Day, 1982), 18-19.

(or *indios*). How they engaged with and understood *fiestas* differed from the perceptions and practices of the colonial elites who presided over the ceremonies. The sermons describing Jesus and his apostles, the intercession of European saints, and manifestations of the wrath of God were contextless.[3] Few *naturales* would have been able to imagine Jerusalem, Rome, or Bethlehem, nor the European towns and environments where Catholicism was practiced.[4] The new God, His son, and His saints were recent transplants to a distant environment, and inevitably were understood through the past experiences and lifestyles of the newly conquered and converted peoples of Luzon.[5]

The *fiesta de las lagrimas* therefore offers a valuable case study in the contextualization of a Catholic ritual within the Philippine environment. It is a *fiesta* created

[3] Although he did not use the word contextless, this statement is inspired by Vincente Rafael and his monograph *Contracting Colonialism.* Rafael focused on the phenomena of translation between Tagalog and Spanish (Castilian), paying particular attention to the translation of holy words—*Dios, Espiritu Santo,* and *Jesus Cristo,* among others. These words were not translated to equivalents in Tagalog but were instead introduced to Tagalog in their Spanish form to maintain the sanctity and meaning of the words. However, while this action preserved the significance of the words for Spaniards speaking Tagalog, the intent and history of the words was not comprehended by *naturales* employing them for the first time. Thus, the words were preserved in Tagalog, but lacked the context that imbued them with power in Castilian. See Vincente Rafael, *Contracting Colonialism: Translation and Christian Conversion in Tagalog Society Under Early Spanish Rule* (Durham and London: Duke University, 1993), 15, 20-21, 29, and 32.

[4] To this author's knowledge, there has been no study of migration from the Philippine archipelago in the pre-modern period. Certainly, inhabitants of the littoral Philippines had a strong maritime tradition. The archipelago was situated at the eastern edge of the Indian Ocean World described by Chaudhuri and Pearson, so it is not unimaginable that someone born on the islands prior to the Spanish arrival could travel as far as the Arabian Peninsula (and from there, potentially to Jerusalem). Alternatively, *naturales* from the Philippine Islands did become mariners on the Manila Galleons, travelling to and settling in Nueva España. Some certainly continued from Acapulco to Veracruz and, ultimately, Cadiz, Seville, Madrid, and maybe Rome. However, it is highly doubtful that large numbers of *naturales* undertook prolonged voyages and returned to the archipelago (especially in the seventeenth century) to share stories of the distant cities so central to the Catholic faith. See K.N. Chaudhuri, *Trade and Civilization in the Indian Ocean World: An Economic History from the Rise of Islam to 1750* (Cambridge: Cambridge University, 1985), 2-3, 17, 39, 41, and 50-51. See also Michael Pearson, *The Indian Ocean* (London and New York City: Routledge, 2003), 30, 34-35, 50, 53, 59-60, 76-77, and 88.

[5] Vincente Rafael also explores how Tagalog was used amongst *naturales*, including what parts of Castilian the *naturales* incorporated into their own language. Thus colonialism, and the spread of Catholicism, become a localized dialogue between two groups with room for. To support his argument, he explores the *naturales'* adoption of the term Dios, a term that previously did not exist in Tagalog. The reverence shown to the term was similar to the emotions displayed towards the *nono* or spirits, an unknowable and formless collection of supernatural forces. As a result, the adoration and respect shown to Dios, God, by *naturales* is distinct from Spanish emotions towards the same God. Such emotions are rooted in precedent, language, and—this dissertation argues— the environment. See Rafael, *Contracting Colonialism,* 15, 84, 110-112, 114-117, 135.

in response to the inherent volatility of Luzon, which demonstrated the power of the Christian God in an environment where He was previously unknown. Second, it was a miracle commemorated by Spaniards, but first discovered by *naturales,* which demonstrated God's concern for a people who did not previously worship Him. And third, the *fiesta de las lagrimas* is representative of a larger process of cultural syncretism, where Catholic forms of piety were appropriated and modified by pre-contact cultures, generating a new folk or *creole* faith: Philippine Catholicism.

Information on the genesis and celebration of the *fiesta de las lagrimas* is scant, with only a handful of sources surviving to the present day. This dissertation primarily relies on two bundles of letters from the *Archivo General de Indias* (*AGI*), which were composed in 1689 and 1738 to defend the festival when administrators attempted to ban or defund it (as discussed in Chapter 3). These sources give Franciscan clergymen's accounts of the *fiesta* and its significance to Manila. The bundle of letters from 1689 includes testimony about the miracle that generated the *fiesta* and best depicts the values enshrined in the state-sponsored celebration.

The testimonies indicate that the *fiesta de las lagrimas,* as previously mentioned, commemorated a miracle that transpired during the great San Andrés Earthquake that destroyed *Intramuros* on the night of November 30th, 1645. The earthquake was felt throughout the entirety of Central Luzon. Among the towns affected was Dilao, which served as the capital of the Franciscan jurisdictions in the Philippines, collectively referred to as *la provincia de San Gregorio*. Because of the town's status as the Franciscans' administrative center, there were significant religious artifacts in the *pueblo's* church. Among the older artifacts was a decommissioned *imagen de bulto de San Francisco* (a human-sized wooden statue of Saint Francis). The image of Saint Francis, by 1645, had

become the centerpiece of the personal shrine of Alonso Cuyapit, the *indio principal* of the town.[6]

Cuyapit would later recount that he was inside his home during the earthquake. During the early shocks, his attention was drawn to the family shrine where the image of Saint Francis was teetering back-and-forth. The statue, despite the powerful tremors, stayed upright and kept moving towards its right side. Cuyapit put the statue back in place, only for it to begin moving leftwards, as if stepping. Fearful that it would fall, he placed pillows around the altar. However, as Dilao's church collapsed, Cuyapit fled the house, abandoning the statue.

Once the shaking ceased, Cuyapit returned home to find the shrine empty. After the house was evacuated, the statue had moved to a window looking towards Manila, its face turned toward the now-ruined *Intramuros*. Upon closer inspection, Cuyapit realized the hands of the statue had shifted position as well, and the left hand now held a crucifix. Three hours later, just past midnight, the statue's hands reverted to their previous, close-fisted state. During this time, the statue began to cry, with tears running from its eyes down to its throat.

Cuyapit, both moved and terrified, embraced the ankles of the statue and kissed its feet. He moved the statue back to its altar where it stayed for three days without major incident. But on the fourth day (December 4th), at nine in the morning, Cuyapit saw the

[6] *Indio principal* referred to a local or village leader amongst the *naturales* who was recognized by the Spanish colonial authorities. The statue (or bust) in Cuyapit's home was rumored to be the first holy image of Saint Francis to arrive in the islands in 1577. Cuyapit's procurement of such an important artifact speaks to his relative status and wealth in the *pueblo,* as well as a personal and earnest devotion to the Catholic faith. Domingo Martinéz, O.F.M., *Compendio Historico de la Apostolica Provincia de San Gregorio de Philipinas de Religiosos Menores Descalzos de N.P. San Francisco* by (Madrid: Imprenta de la Viuda de Manuel Fernandez, 1756), 253. On the same page, a description of the statue itself is offered, along with the assertion that it was responsible for multiple miracles in Luzon's history. See *Ibid,* 253-254.

image was covered in dust. The dust resembled lime (a component of many of Manila's buildings) and it was again crying. It was at this point that Cuyapit informed one friar Juan Tarancen, O.F.M. of the miracle.[7] The Friar diligently checked the image, verifying with his own eyes that it seemed to be crying. He then gathered several other religious officials to clean the statue. After they cleaned it the first time, tears manifested once again. They cleaned it a second time, using "a handkerchief a man uses to clean sweat."[8] Still, for a third time, tears appeared. A miracle now seemingly confirmed by priests, the statue was relocated from Cuyapit's small house to the convent of St. Francis. As it was moved, tears continued to trail down its face. This, a friar testified, brought much solace to the community, "so afflicted" as it was by the tumult of the previous four days.[9]

In 1647, the *Cabildo Eclesiastico* sent officials to examine the statue.[10] They verified, along with a sculptor they appointed, that the tears did not stem from any natural process like humidity. Rather, the founder of the Franciscan Order had demonstrated his unique love for the people of Manila through his tears.[11] He had taken pity on their suffering and interceded with the Lord to end the earthquake that threatened to consume the city's sinful residents. He was now the protector of the people, their advocate to God.[12]

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[7] Cuyapit would later testify that his delay was due to his own disbelief, his fear of ridicule, and his wife, who was sick and near death in bed at the time of the earthquake. See "Información Adjunta" in *AGI*, *Filipinas* legajo 83, Número 19, 2R-3R.
[8] *Ibid,* 3R.
[9] Ibid, 3V.
[10] Acting in place of the archbishop whose position was unfilled (*sede vacante*).
[11] Just as when an apparition of St. Francis appeared on the besieged walls of Manila to warn of a sneak attack by rebelling Chinese in 1603. *AGI*, *Filipinas legajo* 83, Numero 19, 3V-4R.
[12] Conversely, a terrible earthquake on his name day momentarily undermined the popularity of San Andrés (St. Andrew). San Andrés was named the patron saint of Manila because it was on his day (Nov. 30) that Manila repulsed an assault by the Southern Chinese pirate Limahon in the sixteenth century. However, it seems this early success did not immunize San Andrés against doubt. After the events of 1645, a petition circulated to change the city's patron. While this proved unsuccessful, the movement did provoke a letter to the King in 1654. See *AGI, Filipinas* legajo 28, Número 56.

Following their confirmation of the miracle, the Dean and cabildo declared it would be celebrated with an annual *fiesta* every December 4th. Each year, the image would be carried in a holy procession from Dilao to the convent of Saint Francis in Manila. The *cabildo secular* and the *cabildo eclesiástico* would cooperate in leading the procession in Manila, and the *fiesta* would conclude with a mass and holy sermon in a convent. The procession, while led by Spanish clergymen, was composed almost exclusively of *naturales*, the indigenous peoples who came from neighboring towns near Dilao and *Extramuros.*[13]

Cuyapit's testimony, the certification of the miracle, and the description of the *fiesta de las lagrimas* offer several important insights about how the Spaniards understood the celebration. First and foremost, the miracle of the crying statue proved the imported God of the Spaniards could act supernaturally in the colonial environment, and He could extend His wrath and His mercy to the colonized peoples who had, until recently, not known Him. The second important theme present in the accounts of the *fiesta de las lagrimas* is how regulated and restrictive the procession was in descriptions. The *fiesta,* as described within the testimony, was not especially festive. It was a solemn occasion, marked by a procession of penitents thanking St. Francis for interceding with God. The procession ended in a mass and sermon, the recognition of God, His power, and His mercy. The *fiesta,* as the Spanish chroniclers recorded it, was a time for contemplation, not revelry.[14] Third, *naturales* from *pueblos* throughout central Luzon took part in the procession commemorating this miracle each year.[15] However, they did not determine the format of the festivities. Within the

[13] *AGI*, *Filipinas legajo* 83, Numero 19, 10V-11R.
[14] See the opening letter in *Ibid,* 10V. See also the information presented in Chapter 3 of this dissertation in the section relating to the mendicant orders and festivals.
[15] See "Información Adjunta" in *Ibid,* 1R as well as a petition written by Jose Torrubía in *AGI, Filipinas legajo* 295, Número 15*,* 1V.

testimony they are portrayed as recipients of the Spanish faith, with Spaniards acting as the necessary intermediaries between God and the colonized peoples.

The intent of these testimonies, which place Spanish concerns at their core, can be understood through Mikhail Bakhtin's idea of *carnival* and its companion, the state-sponsored festival. To be clear, *la fiesta de las lagrimas* is not carnival.[16] The contemplative, admonishing *fiesta de las lagrimas* was one of the state-sanctioned gatherings Bakhtin described as the opposite of carnival, a celebration dedicated to reinforcing socio-economic norms where, "[t]he tone of the official feast was monolithically serious...and the element of laughter was alien to it. The true nature of human festivity was betrayed and distorted."[17] However, given that the intent of the *fiesta de las lagrimas* was to confirm a Spanish interpretation of a destructive hazard and miracle, the limited descriptions offered of the *naturales'* participation in the *fiesta* are suspicious. How the *naturales* celebrated a miracle witnessed by one of their own is conspicuously absent from the testimonies. Franciscans only wrote that *naturales* were eager participants, and would come from all parts of Central

[16] While Bakhtin never defines carnival succinctly, he characterizes it as ritualized parody and all-consuming laughter. Carnival, in Medieval Europe, was the comic accompaniment to a sanctioned Church feast. The *fiesta* and celebrations like it in Luzon were geographically and chronologically removed from Bakhtin's carnival. Bakhtin defined carnival as a medieval form of popular expression that reached its pinnacle during the European Renaissance. The *fiesta de las lagrimas* and other contemporaneous *fiestas* are products of the Early Modern Era and Counter-Reformation Catholicism. Furthermore, carnival was a European popular response to a restrictive high (elite) culture; Bakhtin never argued carnival applied outside of Europe. Last of all, the documents available from the *AGI* do not describe popular festivities. Instead, these documents describe a church festival—a solemn procession and mass—that received the Spanish-Catholic kingdom's blessing. For more on why the *fiesta de las lagrimas* was not carnival, see Mikhail Bakhtin, *Rabelais and His World,* trans. Helene Iswalksy (Bloomington: Indiana University, 1984), 5, 7, 9-10, 90, and 93. See also Mikhail Bakhtin, *Problems of Dostoevsky's Poetics,* trans. Cayrl Emerson (Minneapolis: University of Minnesota, 1984), 122-123 and 129-130.

[17] Official feasts and church- or state-sponsored festivals "sanctioned the existing pattern of things and reinforced it." Unlike, carnival, they did not invert or parody. "This is why the tone of the official feast was monolithically serious and why the element of laughter was alien to it. The true nature of human festivity was betrayed and distorted. But this true festive character was indestructible; it had to be tolerated and even legalized outside the official sphere and had to be turned over to the popular sphere of the marketplace." Bakhtin, *Rabelais and His World,* 9.

Luzon to participate in the solemn procession and receive the Mass.[18] This description (or lack of one) raises new questons about the logistics of festivities: how far did *naturales* travel; did they feast or celebrate with one another or outside the church on the day of the procession; and did they—composing the majority of participants—alter or add to the spectacle of the procession? Even allowing for exaggeration on the part of the Franciscans, how did a "solemn" mass and procession for a local miracle maintain the support of the *cabildos* and attract enough participants? The *fiesta* must have included spectacle or additional celebrations that occurred before, after, or alongside the sanctioned procession. And these celebrations and additions represented how the *naturales* celebrated and remembered their miracle.[19]

In conclusion, the *fiesta de las lagrimas* In the Spanish accounts is presented in a sanitized form. Within the documents, the *fiesta* exclusively confirms the worldview of the colonizers and does not hold any additional significance. However, the limited discussion of the *naturales*, the participants, cannot be overlooked. All testimonies indicate the *naturales* enthusiastically embraced and participated in the procession: arguments for preserving the

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[18] *AGI, Filipinas* legajo 83, Número 19, 10V-11R.

[19] Although Bakhtin's carnival, by definition, could not be practiced beyond Europe, the collected works of anthropologist Victor Turner on rituals in non-European contexts indicate that festivals and ceremonies—especially of a spiritual nature—universally permit transgression, or at least existence beyond the norms that govern members of a society. Whether rituals commemorated coming of age, communion with spirits, or pilgrimage, they brought individual practitioners to what Turner called a liminal state, an existence on the periphery of categories within a society—between boy and man, apprentice and master, or corporeal and spiritual. While occupying a liminal state, individuals were not bound to the laws governing their class (or caste) and could interact with one another with disregard to their previous, codified status. Thus, the momentary inversion observed by Bakhtin was universal, and would have existed in the Philippines. However, it must be noted that Turner does not explicitly distinguish between what Bakhtin called the state-sponsored festival and true carnival; Turner's ceremonies and rituals bring participants to liminality but are not themselves on the cusp of illegality.
Amongst Turner's works, the ones most relevant to this dissertation study Christian festivals in Mexico. See Victor Turner and Edith Turner, *Image and Pilgrimage in Christian Culture: Anthropological Perspectives* (Oxford: Basil Blackwell, 1978), 4, 8-9 ("Pilgrimage, then, offers liberation from profane social structures that are symbiotic with a specific religious system, but they do this only in order to intensify the pilgrim's attachment to his own religion…"), 21, and 32. See also Victor Turner, *The Anthropology of Performance* (New York City: Performing Arts Journal, 1987), 21-22.

*fiesta* cited the comfort (*consuelo*) it brought the faithful and great "spiritual fruit" (i.e. conversions) it rendered.[20] This was a festival that originated in, was aimed towards, and was perpetuated by the *naturales* of Luzon.

It is inconceivable, then, that the festival born from Luzon's environment and its peoples was celebrated enthusiastically according only to Spanish customs. It was a Christian festival in name, but it was born of and from a newly Christianized people and land. Everything that occurred before and after the mass—the feasting, talking, vibrancy and displays of the procession that Franciscans did not recount in detail—was the indigenous celebration, the actions of a second culture that Spanish accounts excluded. And the *naturales* would have played this role in every passion, Christmas, Easter, saint's day, and celebration of the royal family.[21] Understanding the cultural impact of natural hazards and *fiestas* like the *fiesta de las lagrimas* therefore requires a history of indigenous participation and the development of the festivals iconic of the modern Philippines.

## The *Fiesta de las Lagrimas* and the Genesis of Filipino *Fiestas*

Identifying how hazard events and (more broadly) the environment of Luzon contributed to an emergent Filipino piety requires moving beyond the *fiesta de las lagrimas* and instead considering the *fiesta* as a format of celebration. It is therefore necessary to define the relation of the *naturales,* the ancestors of today's Filipinos, to the Spanish within the *fiesta*. After all, events like the *fiesta de las lagrimas* were celebrated by *naturales* but

[20] *AGI, Filipinas* legajo 83, Número 19, 10R-11V and Jose Torrubía's petition in *AGI, Filipinas* legajo 295, Número 15, 1V.
[21] For instance, see the "Tabla de Fiestas" (Chapter 3) in *AGI, Filipinas* legajo 295, Número 15. See also *AGI, Filipinas* legajo 187, Número 2 (when indigenous tribute labor was used to perform a state-sponsored *fiesta*), *AGI, Filipinas* legajo 187, Número 17 (celebration of the pregnancy of the Queen in 1711), and *AGI, Filipinas* legajo 187, Número 33 (celebrating the marriage of the Prince of Asturias in 1724).

were sanctioned by the colonial state. Inevitably, the relationship between a subjugated people and an educated elite in celebration invokes Mikhail Bakhtin and the principles of carnival. While the colonial *fiesta* was not carnival, as previously mentioned, it does bear strong parallels to Bakhtin's ideas.

Bakhtin described carnival as an elaborate parody of high culture by popular culture based on laughter. Carlo Ginsburg would later carry Bakhtin's conception of popular culture a step further, arguing peasant culture was distinct from elite culture. This peasant culture could interact with and add to elite culture, as opposed to merely distorting it.[22] However, Ginzburg also stated and Bakhtin implied that popular culture could not exist without elite culture; peasant culture could not "exist outside the act that suppresses it".[23] Laughter was not a sufficient organizational principle without a high culture to define itself against.

Bakhtin and Ginzburg's portrayal of class relations, though, cannot apply to the indigenous peoples of Luzon.[24] They had possessed a vibrant, independent culture before the Spanish colonial period began.[25] Much Spanish colonial activity in the seventeenth was dedicated to stamping out this pre-contact culture. *Reducción*—the forced settlement of nomadic and semi-nomadic *naturales* into *pueblos* in the lowlands—and evangelization were dual programs intended to Hispanize and Catholicize the Philippine Islands, replicating

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[22] Carlo Ginzburg, *The Cheese and the Worms: The Cosmos of a Sixteenth-Century Miller,* trans. John and Anne C. Tedeschi (Baltimore: Johns Hopkins University, 2013), xxi, xxiii, xxv.
[23] *Ibid,* xxv.
[24] The *fiesta de las lagrimas* and the tradition it represented—the institutionally approved *fiesta*—was a Spanish-Catholic custom transplanted to Luzon. However, the accompanying popular celebrations could not accompany the *fiesta*; there were too few Spaniards in Luzon to replicate Spanish lower-class festivals. Instead, the *fiesta* established a new relationship with the cultures of its newest participants: the indigenous peoples of Luzon.
[25] The collected works of William H. Scott (especially *Barangay*) testify to the complexity and diversity of lowland and highland pre-contact cultures in the Philippine Islands. See William Henry Scott, *Barangay: Sixteenth Century Philippine Culture and Society* (Quezon City: Ateneo de Manila, 1994).

Spanish-Catholic lifestyles while obliterating the pre-Spanish past.[26] Still, while the Spaniards did succeed in altering indigenous lifestyles, they did not eradicate pre-contact customs and faith. Instead, scholarship on Philippine festivities indicates *naturales* appropriated and modified the Spanish celebratory format, creating an idiosyncratic, creolized *fiesta* unique to their islands (paralleling a similar process underway in the Americas).[27] Thus was born the Philippine *fiesta,* a true cultural hybrid.[28]

The dynamics of this creolization process are the subject of continued scholarly debate. Three of the most in-depth analyses of Philippine *fiestas* were authored by Fidel Villarroel, a Dominican historian; Reinhard Wendt, a German historian studying culture and

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[26] Authoritative works on the consequences of *Reducción,* far-reaching as they were, include John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses 1565-1700* (Madison: University of Wisconsin, 1967), 44-45, and 47-50; Rafael, *Contracting Colonialism,* 90-91; and Carolyn Brewer, *Holy Confrontation: Religion, Gender, and Sexuality in the Philippines, 1521-1685* (Mandaluyong: Raintree Publishing, 2001), 95

[27] Phelan asserted that *naturales* both accepted and modified the *fiesta,* while priests noted it was one of the most appealing aspects of Christianity and sedentary life to the indigenous peoples. See Phelan, *The Hispanization of the Philippines,* 47 and 73. For discussions on the creolization of Spanish *fiestas* in the Americas pertinent to this study, see Solange Alberro, "Los efectos especiales en las fiestas virreinales de Nueva España y Perú." *Historia Mexicana,* Vol. 59, No. 3 (Jan-Mar, 2010): 841, 844-850, and 854. For talk of a festival practiced throughout the Spanish Empire and all its colonies (The fiestas of the Moros y Cristianos), see Nicólas Cushner, "Las fiestas de "Moros y Cristianos" en las Islas Filipinas." *Revista de Historia de América,* No. 52 (Dec. 1961): 518 and 520. For discussion of potential Mexican influences over Philippine forms of celebration, see Nicanor G. Tiongson, "Mexican-Philippine Relations in Traditional Folk Theater." *Philippine Studies,* Vol. 46, No. 2 (1998): 147.

[28] Cultural hybridity is an intentionally vague and amorphous term intended to encapsulate an array of unequal interactions between two or more cultural traditions that produce novel customs, practices, or traditions. In the short monograph *Cultural Hybridity,* Peter Burke describes several potential pathways for generating hybrids. Particularly relevant to this dissertation are his definitions of creolization, acculturation, and appropriation. Burke defines creolization as the generation of a novel hybrid culture with fused elements from its predecessors. Acculturation is the emphasis, adoption, and ultimately absorption of one culture by another while appropriation is when a culture takes on elements of another it finds useful. For instance, Spaniards appropriated elements of Philippine and Chinese architecture when designing their churches and homes in Luzon. A final relevant term is accommodation, where a culture with few practitioners adopts elements of another, majority culture. In the Spanish-*naturales* relationship, the Spaniards were a dominant and literate minority while *naturales* were an array of semi-sedentary and semi-nomadic agricultural, resource collecting, and trading peoples with limited urban traditions and a primarily oral culture. While this seeming imbalance certainly allowed Spaniards to impose their customs and lifestyles by force, it did not prevent *naturales* from modifying or even transforming Spanish customs (including those related to Catholicism) to suit their beliefs. As Burke observed in the Americas, "converts did not so much abandon their traditional religions for Christianity as make some kind of synthesis between them." Peter Burke, *Cultural Hybridity* (Cambridge: Polity Press, 2009), 10-11, 14, 22-23, 41, 66, 72, 77, 86, 102, and 112.

empire; and Doreen Fernandez, a cultural historian who studied Filipino food and customs.[29] Each studied the Filipino *fiesta* and the ways participants celebrated, arguing these customs emerged from a mixture of pre-contact cultures and Spanish Catholicism. Each possessed a different understanding, though, of how Spanish and pre-contact customs interacted to create the novel Philippine *fiesta.*

Villarroel focuses on American documents written at the conclusion of the 19th century that characterized Manila (*Intramuros*) as a city of churches and fiestas, packed "[m]eter for meter, foot for foot," with iconography, mysticism, and holy significance.[30] The *fiesta* was iconic to this city and the faith it embodied*:* "To the characteristic of sentimentality, Filipino religiosity adds the element of pageantry and pomp, which makes up the festival or popular *fiesta*…The Filipino is inclined to decorate the churches, images and altars profusely, to spend lavishly for the music and entertainment of his guests, to organize and participate in colorful processions…through which he can manifest his religious feelings in extravagant ways."[31] Thus for Villarroel, the Filipino *fiesta* was a local and sincere adaptation of a Spanish-Catholic custom.

Key to his argument, Villarroel uses the term "sentimentality" to describe Filipino-Catholicism. It is a sentimental faith where God is a partner in every act.[32] This inevitably draws comparisons to the cosmography of pre-colonial Filipinos, who believed in spirits, *anitos*, present throughout the world that could be satisfied or angered by human actions,

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[29] Other articles treating specific *fiestas* are also to be found in the literature. Along with Nicolas Cushner's discussion of the fiestas of the "Moros y Cristianos," (cited above), see H. de la Costa, "A Marian Festival in Manila, 1619." *Philippine Studies,* Vol. 2, No. 4 (Dec. 1954), 317-319.
[30] Fidel Villarroel, O.P. "The Fiestas of Old Manila." *Archipelago: The International Magazine of the Philippines,* Vol. 2 (1975): 40.
[31] *Ibid,* 38.
[32] *Ibid,* 38.

including feasts and ceremonial festival.[33] Villarroel, however, rejects that the religiosity of the Filipinos in the twentieth century is simply translated from the distant past. The processions and pomp do not reflect a "magic-religion." A celebrant in Intramuros was not "a pagan performing Christian rights, nor a Christian insensibly following inborn pagan practices of his subconscious past".[34] Instead, the *fiestas* as Villarroel experienced them were a blend of Spanish Catholicism and "[o]riental taste for concrete religious experience."[35] Put differently, the *fiesta* was one of the most pure expressions of Filipino Catholicism, a local variant of a global tradition that blended the different influences of the past in a way only Filipinos could. By Villarroel's account, the foundation of the Filipino *fiesta* is Spanish—a custom wholly embraced by the conquered peoples—and the idiosyncratic qualities are indigenous additions made over time. The Filipino *fiesta* therefore becomes analogous to the popular carnival, and the Filipinos comparable to the popular classes of Europe as defined by Ginzburg and Bakhtin.

While Villarroel does not view the Filipino *fiesta* with hostility—he quite admires it—he approaches it from a Spanish-Catholic perspective, viewing it as an offshoot or descendant of the Spanish-Catholic *fiesta*. Reinhard Wendt, by contrast, performs a post-colonial analysis that envisions the *fiesta* as contested ground within a colonized setting. Wendt argues that the clergy, "used the pomp and circumstance of these festivals to carry their concepts of the true faith, of civilized life and of a political order ordained by God, into the most remote areas of the colony…to ensure collective attitudes and behavior

[33] *Ibid,* 38. For more on Anitos, see Phelan, *The Hispanization of the Philippines,* 23-24.
[34] Fidel Villarroel, O.P. "The Fiestas of Old Manila,", 46. It must be noted that, embedded within this rejection of paganism within a Catholic tradition is Villarroel's defense of the Catholic Church, which he insists did not "brainwash" Filipinos or prey upon them for easy conversions. Rather, the *fiesta* resonated with Filipinos, and therefore became a prominent way to spread Christianity amongst them.
[35] *Ibid,* 46.

conformed to those of the colonial power."[36] Yet, the structure of the *fiesta,* formed as Wendt notes amongst Western cultures, "presented the Filipinos with opportunities to incorporate, and thereby preserve, their own traditions…".[37] There, Spanish and indigenous customs intermingled to birth a new culture originating "with not only Spanish padres and officials, but also the indigenous population…".[38]

The implication in Wendt's argument is that indigenous populations coopted the *fiesta.* Wendt offers several examples of indigenous peoples utilizing the Church's forms and rituals to preserve their former practices. They sang the *doctrina* (analogous to the *credo*) in native rhythms, created pious songs, reproduced Christian performances like the Passion in the *pasyon*—which told the Christian story through the "epic traditions of South East Asia"—incorporated traditional improvised poetry productions into celebrations, and lavished stages and processions with colorful tropical plant-life, to name just a few of the examples.[39] Over time, these local additions permitted the islanders to fully "appropriate" the *fiesta,* making it part of their own traditions and even a basis for political resistance in the nineteenth century.[40] Thus the *fiesta*, intended as a tool for Hispanizing the people of Luzon, was itself Filipinized and used to ultimately subvert colonial rule.[41]

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[36] Wendt argues the *fiesta* was, "not limited merely to the reinforcement of administrative structures." Reinhard Wendt, "Philippine Fiesta and Colonial Culture." *Philippine Studies,* Vol. 46, No.1 (1998): 5.
[37] *Ibid,* 7.
[38] Ibid, 7.
[39] *Ibid,* 8.
[40] *Ibid,* 9 and 14.
[41] Wendt's argument, it should be noted, does not entirely oppose Villarroel's. Wendt does not engage with the faith motivating the *fiesta.* Instead, he analyzes the ritual's material effects, how it operated for and against colonialism. However, tension exists between the two scholars' renditions of the *fiesta*. If Villarroel sees the Filipino *fiesta* as a flavor or variant of the European *fiesta*, then Wendt views the Filipino *fiesta* as preserved pre-contact culture which survived by appropriating aspects of the Spanish faith. Neither author makes an extreme argument that the *fiesta* is not a *creole* hybrid, primarily formed from one culture. Rather, they favor opposing arguments on which participant was more active, more formative in the generation of the *fiesta.*

The last of the three articles, Doreen Fernandez's "Pompas y Solemnidades," studies the link between church festivals (the *fiestas*) and Filipino theatre.[42] She introduces the article as a study of Philippine folk theatre and its celebratory spirit, where, "scenes of the Creation, Transfiguration, Resurrection, and Ascension are lit by sparklers (*lusis*) and involve ingenious stage devices…[t]he entrances and exits, the tournaments and battles in the *komedya* are done to music, with marching and flourishes, with grandiloquent taunting and boasting…The parties and feasts embodied in most *sarsuwelas* are as grand as budget and folk imagination can make them. Dramatizations like the *Sabulong* and the *Panunuluyan* are replete with statues, actors, singers, angels descending, verses, music, and special machinery."[43] She is certain these Filipino customs have their origins in pre-contact belief, but then asks how the Spanish colonization and subsequent American occupation influenced and helped form these customs. Thus, she differentiates herself from the other scholars by inverting the assumed order of cultures; rather than the indigenous beliefs altering or appropriating Spanish customs, Fernandez asks how Spanish church celebrations altered and transformed pre-contact festivities to create the Filipino *fiesta*.

This inversion permits Fernandez to see Filipino culture expressing itself in celebrations from the late sixteenth-century onwards. She recounts processions celebrating saints' days, developments in the Spanish royal family, other secular festivals, and

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[42] Fernandez composed a separate article on contemporary Philippine theater and folk culture, writing that Philippine folk culture was a mixture of influences: "In the Philippines, therefore, folk culture includes: the basic culture before Western contact, the individual expressions and the sum of our ethnic cultures, basically Malay, for lack of a better word; the cultural matrix shared with most of Southeast Asia; the cultural influences of trade relations with Chinese, Arab, and Indian traders; the culture developed through 375 years of Spanish colonization, both in accommodation (imitation, adaptation) or resistance (transformation, reaction); and the culture developed after 48 years of American colonization and subsequent and continuing neocolonialism. It is a complicated mix of the indigenous and indigenized in continuing interaction, perhaps the most complex in Asia." Doreen G. Fernandez, "Mass Culture and Cultural Policing: The Philippine Experience." *Philippine Studies,* Vol. 37, No. 4 (1984): 489.

[43] Doreen G. Fernandez, "Pompas y Solemnidades: Church Celebrations in Spanish Manila and the Native Theater." *Philippine Studies*, vol. 36, no. 4 (1988): 403.

celebrations of local developments between the sixteenth and nineteenth centuries. For each festival, she focuses on the key themes of pomp, pageantry, and dramatic solemnity. The fireworks, the size and scopes of processions, the accompanying festivals and feasts, and all manner of spectacle appear in each *fiesta* and festival. Throughout, she builds the argument that Filipino *fiesta* was the synthesis of Spanish Catholicism—its rituals, prayers, music, intent, and form—with an indigenous predilection for ornamentation and spectacle.[44]

Unfortunately, Fernandez does not specify which pre-colonial customs might have influenced celebratory formats. She instead comments on the Spanish contributions, arguing "elements of Spanish feasting, secular and religious…almost surely set a standard for celebration and, in derivative form, were reflected in native fiestas."[45] That is, the Spanish customs offered a form or template which indigenous peoples could build upon, add to, or alter. Interestingly, Fernandez observes that priests took pride in the pomp and pageantry of local *fiestas* even as *naturales* added local flourishes or elements.[46] Thus, unlike Villarroel or Wendt, she argues the priesthood and (to a lesser extent) the civil administrators condoned and celebrated the new, Filipino *fiesta*. As a result, her article does not construe the *fiesta* as a concrete, imported custom that was distorted or appropriated, but instead as something everyone in Luzon had a role in defining. The Filipino *fiesta* was not built from reactions to or the rejection of colonialism, but instead was a developing conversation between two peoples occupying one space.[47]

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[44] *Ibid,* 423-426.
[45] *Ibid,* 424.
[46] *Ibid,* 404-406.
[47] As a corollary, Fernandez posits that the influence of Spaniards throughout the archipelago would have varied, with Manila being heavily influenced compared to distant *pueblos*. *Ibid,* 425-426. Additionally, it must not be forgotten that all Christian statements and ideas that had to be translated to indigenous languages offered venues of resistance to colonialism. In the *fiesta,* there were points in the official ceremony that

Differences in tone and perspective, then, provide three separate explanations for the genesis of the Philippine *fiesta*. All, however, agree its emergence represents creolization and that the *fiesta* is today a hallmark of Philippine culture. The process of that transformation, how the *fiesta* became increasingly Filipino, is less certain. For the specific example of the *fiesta de las lagrimas,* though, elements of each author's arguments are apparent.

The *fiesta de las lagrimas* is discussed briefly by Fernandez, who traced the history of the venerated statue of Saint Francis of Assisi. It was involved in multiple festivals—some spontaneous, some annual—and in all instances appears to have inspired solemn but "majestic" processions.[48] The festival, while not the largest in the city, enjoyed mass participation in Manila, and the associated processions were likely spectacular.[49] That same participation speaks to Villarroel's argument that faith in the *fiesta de las lagrimas* and its celebration of Saint Francis's intercession was genuine. The indigenous embraced the *fiesta de las lagrimas* and its associated faith. And in that acceptance, hints of Wendt's argument that the *fiesta* operated in service of the colonial authorities appears as well. The form of this particular *fiesta,* based on available descriptions, implies indigenous additions were made to the procession, but that the *fiesta de las lagrimas* remained recognizably Spanish.

However, there is also an intensely subversive element to the *fiesta* that speaks to Filipino appropriation of a Spanish custom. Although the statue of Saint Francis reputedly

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*naturales* could reinterpret without issue. For instance, the solemn mass and prayers, if shared in Castilian or Latin, would have proven incomprehensible to most Filipinos outside Manila. Further, if the prayers were translated to Filipino languages, some of the intended meaning of the prayers could be lost because of the number of inconvertible words associated with Christianity (i.e. Jesus Christ, host, the Holy Trinity, etc.). See Rafael, *Contracting Colonialism,* 23-24, 26-27.

[48] Doreen G. Fernandez, "Pompas y Solemnidades, 419.

[49] See *AGI, Filipinas* legajo 83, Número 19; *AGI, Filipinas* legajo 295, Número 15*;* and *AGI*, *Filipinas* legajo 83, Número 49.

was the first such image brought from Spain to Luzon, the statue did not cry until exposed to Luzon's powerful earthquakes. Nor was the miracle discovered by Spaniards; it was an indigenous man, Alonso Cuyapit, who first noticed the miraculous tears. Spaniards certified the miracle and ensured its celebration would be permitted by their institutions, but the miracle was not Spanish. Rather, the miracle was an instance of the localization of the Catholic faith in the peoples and environment of Luzon. It was physical proof that the Christian God was present in the Philippines, and His saints watched over the islands' inhabitants. Acceptance of the Catholic God may not seem subversive, as that was the ostensible purpose of Spanish colonialism. However, acceptance of God and the Catholic faith was not synonymous with accepting Spanish dominion, and the *fiesta de las lagrimas* represents an instant when indigenous peoples were separating the two. Instead, they were the focus of God's actions and his saints' miracles. And in that instant, one sees a kernel of the emergent Filipino identity.

## Conclusion

The *fiesta de las lagrimas,* and likely all *fiestas* that occurred in the Philippine Islands, bore differing significance to the colonizers and the colonized peoples. For the colonial elite, the annual procession commemorated their faith and their rationalization of a destructive earthquake. It confirmed the power of their God over the natural world (and especially the colonized environment of Luzon). And, to the Spaniards, the *naturales*' unforced participation in the ritualized procession and sermon—and any aesthetic contributions they made to the procession—signified their acceptance of the Christian God.

However, the *naturales* did not accept the *fiesta de las lagrimas* or other celebrations in their entirety. Rather, they accepted the form, and then built upon it.

Fernandez, Villarroel, and Wendt all concur that the peoples of Luzon modified the Spanish procession and mass. They added indigenous flowers and local plants to the altars, sang the prayers to the rhythms that existed before the Spanish arrived, and persistently contributed to the format of the procession. Each small alteration made the *fiesta* a more local tradition, something emerging from the cultures and environment of Luzon.

The *fiesta de las lagrimas* therefore represents the progressing Filipinization of the Catholic *fiesta*, and indispensable to this process was the environment, including its hazards. The San Andrés earthquake provided the dire circumstances that generated a miracle, and this miracle was observed by an indigenous family. The *fiesta de las lagrimas de San Francisco* thus symbolized indigenous ownership of an imported custom, and at some level the appropriation of the conquerors' God. He was enacting great works in Luzon for the people of Luzon, and His power was theirs to celebrate and worship despite Spanish efforts to regulate displays of piety and faith.[50]

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[50] Interestingly, the Spanish did not articulate resistance to the indigenous aspects of the *fiesta de las lagrimas*. While likely aware that indigenous populations were altering their *fiestas* (not to mention the churches where these ceremonies occurred, as Chapter 2 demonstrated), the clergy did not prominently resist these changes. Possibly their acceptance was the product of competing priorities. Compared to the *babaylans* and the clergy's efforts to revise indigenous gender norms, polygamy, and sexual attitudes, perhaps minor changes to *fiestas* appeared inconsequential. Furthermore, as historians of the islands like John Phelan have noted, the Spanish clergy viewed *fiestas* as their most effective tool for proselytization. The indigenous population embraced the spectacle and pomp and would accept *reducción* if it permitted routine gatherings and festivities.
An alternative explanation for Spaniards' failure to prevent the appropriation of their ceremonial festivals was that the colonizers expected and accepted such alterations. Folk Catholicism was common to Spain, and often generated local festivals and prayers to specific saints. Similarly, the lower classes of Europe routinely parodied religious festivals, as Bakhtin wrote; the indigenous population, whom Spaniards viewed as a lower class, may have unintentionally completed their expected function by altering the custom of *fiesta*. Since there were too few lower-class Spaniards to form a subculture, the indigenous population's actions could have been perceived as equivalent to European peasants' mostly harmless subversions. Or, perhaps the Spanish colonial experience in the Americas prepared them to accept indigenous contributions to a performance that was, at its core, Catholic. Again, this dissertation is not preoccupied with explaining why Spaniards did not prevent alterations to their *fiesta.* What matters is that such alterations happened and that entirely new celebrations that married a Spanish template to Luzon's environment—as transpired with the *fiesta de las lagrimas*—were permitted to occur. To Spaniards, the population was clearly embracing their faith, and God was aiding in their objective by providing miracles the *naturales* could witness. Phelan, *The Hispanization of the Philippines,* 47, 65, 73, 75, and 78-79. For Spanish folk religion (and how it was influenced by the environment and natural hazards), see William A. Christian Jr., *Local Religion in Sixteenth-Century Spain* (Princeton: Princeton University, 1981), 3, 21-24, 28-29, 33-35, 39-40, 55, 57, 63, 147, 175-176, 178, and 207-208.

The cultural impact of natural hazards in this case, then, was to be the scaffolding for a merger between pre-contact beliefs and Spanish-Catholicism. As with the institutions discussed in Chapter 3, *fiestas* were not devised to explain natural hazards. Instead, these events occurred, and pre-existing customs were applied to cope with the resulting destruction. Disasters like the San Andrés earthquake forced the two distinct cultures, indigenous and Spanish, to grapple with sudden (and shared) disruption. A miraculous occurrence with different connotations for both cultures, the product of that disruption, then became the basis for a new celebration that further merged the practices of the colonizer and colonized.

Were this a one-time occurrence, it would be a footnote in the history of Luzon. Yet all evidence indicates that *fiestas* akin to the *fiesta de las lagrimas* were common throughout Luzon, if rarely recorded. It seems appropriate here to draw upon Doreen Fernandez's closing words regarding *komedya*:

> If the quelling of revolutions, the ceasing of earthquakes, victories over pirates and foreign invaders and the beatification and canonization of saints provided occasion for celebration in Spanish Manila, then on barrio level the harvest, the fiesta, Holy Week, Christmas, a wedding to come, the birth of an heir, a death in the family, a graduation from college provide occasion for komedya [comedy] or for going into debt in order to prepare a *handa* [feast] for the community.[51]

Thus, similar festivals that localized the Catholic faith existed throughout the *pueblos* of Luzon and within Manila, even if documents detailing their origins do not survive to the present. And, amongst those *fiestas*, several were undoubtedly inspired by the storms, earthquakes, floods, and extreme natural events inherent to Luzon.

[51] Doreen G. Fernandez, "Pompas y Solemnidades," 426.

# Chapter 6: Counter-Narratives from the Imperial Fringe

The hybridization of the *fiestas* was only possible through mutual accommodation: the people of Luzon had to receive and incorporate the colonizers' God, and the Spanish had to accept—knowingly or unknowingly—the alterations made by the *naturales*. *Fiestas* like the *fiesta de las lagrimas* were not the only cultural hybrids to emerge in the seventeenth century, though. Nor were they the only ones to draw inspiration from the environment of Luzon. What made the *fiestas* rare amongst various forms of hybrids was that they were sanctioned by the Spanish colonizers.[1]

The *fiestas* were acceptable because they forced understanding of the environment through a Catholic prism. There were, however, other interpretations that existed alongside or competed with this Spanish-approved rationalization and world view. These hybridized understandings of the environment were not rooted in Catholicism but utilized it in ways that the colonial elite and inquisitors considered near-heretical. Some, like the *fiesta*, merged pre-contact beliefs and rituals with the Catholic pantheon. Others propagated pre-contact beliefs in direct opposition to the Spanish evangelical mission.

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[1] Many pre-contact understandings of the natural environment were made illegal during the Spanish colonial period. Spanish *pacificación* aimed to "hispanize" the *naturales* through *reducción*, the forced settlement of peoples in towns centered on a plaza with a Church. Concurrently, ceremonies reliant on native plants were labelled hexes, pre-contact rituals were decried as paganism, and the traditionally nomadic lifestyle of the indigenous population was outlawed. *Reducción* can therefore also be understood as both an attempt to recreate Hispanic lifestyles and as a rejection of indigenous understandings of the environment. It simultaneously overruled the legitimacy of the indigenous population's lifestyle and delegitimized the local environment, or at least how natives had perceived their environment. Rituals like *la fiesta de las lagrimas de San Francisco*, in light of Spanish hostility towards Luzon's environment, served as rehabilitation by reincorporating extremes like earthquakes into a Catholic cosmology.
For more on Reducción, see John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses 1565-1700* (Madison: University of Wisconsin, 1967), 44-45, and 47-50 Vincente Rafael, *Contracting Colonialism: Translation and Christian Conversion in Tagalog Society Under Early Spanish Rule* (Durham and London: Duke University, 1993), 90-91.

These novel interpretations of the environment were invented and practiced against the will of Spanish colonial authorities and therefore were practiced on the fringes of imperial power.[2] *Extramuros,* the city outside the wall of Spanish Manila, was one such place. Throughout the city, individuals practiced a medley of hexes that, to the Spanish colonial authorities, represented a minor heresy. Policing these practices was the responsibility of the local office of the Inquisition. This chapter explores the Inquisition records for information on the most-documented consumers of hexes and spells: the impoverished soldiers (*soldados*) and mariners from Andalusia and Mexico that enforced colonial authority in *Extramuros* and the far-flung provinces of Luzon. The chapter searches for common threads in these colonial migrant laborers' perceptions and rationalizations of Luzon's environment, and then infers how they responded to natural hazards.

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[2] In colonial Luzon, where Spanish elites' authority was limited to Manila and scattered urban centers, most of the island operated with minimal oversight. The mountains of the Gran Cordillera, the Sierra Madres, the Zambales, and in Camarines Norte and Sur actively resisted Spanish colonization, and people in the lowlands would flee there to avoid tax collection, famine, or Muslim raiders. The lowlands and highlands alike existed on the physical barriers of the colony.
For information on the resistance of the highlands to Spanish control, see William Henry Scott, *History on the Cordillera: Collected Writings on Mountain Province History* (Baguio, Philippines: Baguio Printing, 1975), 1-3, 6, 10, 19-20, 83-84, 113-114, 176 (lowlanders fleeing to mountains to avoid Spanish tax collectors), and 188 (difficulty of establishing control in the mountains of the Cordillera). See also William Henry Scott, *The Discovery of the Igarots: Spanish Contacts with the Pagans of Northern Luzon* (Quezon City: New Day, 1974), 46-47, 67, 97, 103, 110-113, and 136. For the lack of Spanish influence over the rural lowlands and interior of Luzon, as well as for the role of the clergy in promoting Spanish control in these regions, see Nicholas Cushner, S.J., *Spain in the Philippines* (Quezon City: Ateneo de Manila, 1971), 78, 97-98. For methods available for counting the number of people under Spanish control, and the unreliability of these methods owing to migration and the destruction of local parish records, see Michael Cullinane, "Accounting for Souls: Ecclesiastical Sources for the Study of Philippine Demographic History," in *Population and History: The Demographic Origins of the Modern Philippines,* ed. Daniel F. Doeppers and Peter Xenos (Madison: University of Wisconsin-Madison and Ateneo de Manila, 1998), 284, 298-299, and 322.
Ethnographic histories of individual provinces in Luzon also confirm the Spanish failed to establish a strong or constant physical presence outside of Manila. Relevant works include: John A. Larkin, *The Pampangans: Colonial Society in a Philippine Province* (Berkeley: University of California, 1972), 16 ("from 1571-1765, one cannot fail to note their [Pampangans] continuity with pre-Spanish patterns or their slow evolution") and 23-25 (Spanish presence in Pampanga expands after occupation the British occupation of Manila from 1762-1764); Felix M. Keesing, *The Ethnohistory of Northern Luzon* (Stanford: Stanford University, 1962), 32 and 36 (rebuffing of Spanish expansion towards mountains); Luis Camara Dery, *From Ibalon to Sorsogon: A Historical Survey of Sorsogon Province to 1905* (Quezon City: New Day, 1991), 1, 3 (importance of Sorsogon to Bicol administration and galleon construction), 41, 53, 67, and 77; and Mariano Goyena del Prado, *Ethnohistory of the Bikol Region,* trans. Maria Lilia F. Realubit (Legazpi City: AMS Press, 1981), 13, 41, 51, 65 (shipyards), 109-110, and 116.

## *Extramuros y los soldados*: Counter-Narratives in Manila

*Extramuros* has been alluded to throughout this dissertation, but never discussed in great detail.[3] The sprawling city spread along the coast and the Pasig River, with the walled city of *Intramuros* at its Western limit. *Intramuros* held the trade houses, churches, and palaces responsible for governing the colony. It was the Spanish quarter constructed from stone, a conscious decision intended to prevent fires and display Spanish wealth, status, and power; in its choreographed layout, terraced buildings, and balconies, it embodied the perfect Mediterranean Renaissance city.[4] Following the San Andrés earthquake, the geographic layout of the city was maintained, though the buildings embraced a novel architectural style, "earthquake baroque", that observers commented was decidedly less handsome.[5] To Spaniards, the walls represented the absolute limits of Manila, with everything beyond a series of appendages and outgrowths that together were broadly classified as *Extramuros* (See Figure 2.1).

The name *Extramuros* signifies the sense of otherness with which Spaniards comprehended everything outside their walls, and it stood in sharp contrast to its enclosed companion. Whereas *Intramuros* was planned and circumscribed, *Extramuros* was chaotic

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[3] The early modern colonial state did not consider itself responsible for *Extramuros'*s structures or infrastructure with a few key exceptions, including hospitals, orphanages, and churches. Such buildings were often run, though, through the mendicant orders and operated on the border of the colonial administration's knowledge. As a result, records of their destruction and reconstruction are limited. For more information, see Chapter 2.

[4] Robert R. Reed, *Colonial Manila: The Context of Hispanic Urbanism and Process of Morphogenesis* (Berkeley: University of California, 1978), 16-17, 38-39 (history of Spanish colonial building codes and laws), 41, 43, 45-47, and 50. See also Greg Bankoff, "A Tale of Two Cities: The Pyro-Seismic Morphology of Nineteenth-Century Manila," in *Flammable Cities: Urban Conflagration and the Making of the Modern World,* ed. Greg Bankoff (Madison, Wisconsin: University of Wisconsin, 2012), 172-173. For images and illustrations of *Intramuros* and various fortresses throughout the Philippines, see Rene B. Javellana and Jose Ma Lorenzo Tan, *Fortress of Empire: Spanish Colonial Fortifications of the Philippines, 1565-1898* (Makati City, Philippines: Bookmark, 1997).

[5] See Chapters 2 and 4. See also Bankoff, "A Tale of Two Cities," 172-173.

and unbounded. The streets of *Extramuros* wound between houses and buildings constructed from wood, which rendered the whole outer city prone to massive conflagrations.[6] And, while *Intramuros* likely never housed more than three thousand people of primarily Hispanic origin, *Extramuros* housed tens-of-thousands in its various quarters.[7]

The most striking difference between *Intramuros* and *Extramuros,* though, was likely the inhabitants. *Extramuros* was home to Chinese heralding from Fukien and other southern provinces; Japanese Christians and exiles; South Asians (including slaves) from "Bengali"; *naturales* from all parts of Luzon, the Visayas, and even Mindanao and Borneo; Africans brought by Portuguese slave traders; former Protestants from the Netherlands and England; Spanish missionaries; and Andalusian, Mexican, and *creole* soldiers and merchants.[8] This diverse mass of people represented or participated in the silver trade that linked Mexican and Peruvian silver to Chinese markets in exchange for silks, porcelains, and other Asian goods. Thus, *Extramuros* was not just an offshoot of Spanish *Intramuros,* but was instead its marketplace; it was as indispensable as the galleons to the viability of Manila. The colonial

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[6] *Ibid,* 173.

[7] By 1620, Manila's population was 41,400 people. There were, at that time, 2,400 Spaniards, 3,000 Japanese, 16,000 Chinese, and 20,000 *naturales*. In addition, the city's population would swell between 6,000 and 12,000 during the trade season (March through June), when merchants arrived to participate in the lucrative silver trade. Manila's population though likely shrank during the mid-seventeenth century when the silver trade evaporated, and the city was momentarily reduced to rubble by the San Andrés Earthquake. See Reed, *Colonial Manila,* 33. Some evidence of population decline, especially amongst the Spanish population, is given in the year 1679 by the Interim Governor Juan de Vargas. See *AGI, Filipinas* legajo 11, Rollo 1, Número 7.

[8] *Extramuros* was likely amongst the most diverse cities on Earth, especially when the silver trade was vibrant. See Arturo Giraldez, *The Age of Trade: The Manila Galleons and the Dawn of the Global Economy* (New York: Rowman and Littlefield, 2015), 2-4, 18-21, 34, 71, 106, 111, and 160-161. For information on slaves in the Philippines, see Ryan Dominic Crewe, "Connecting the Indies: The Hispano-Asian Pacific World in Early Modern Global History." *Estudos Históricos,* vol. 30, no. 60 (Jan.-April 2017): 19-20. See also Tatiana Seijas, *Asian Slaves in Colonial Mexico: From Chinos to Indians* (Cambridge and New York City: Cambridge University, 2014), 2, 14, 33, 37-38, and 57.

elite—the administrators and clergymen—were therefore obligated to accept its existence despite their concerns about the outer-city's denizens.[9]

*Intramuros's* administrators viewed the diverse populations of *Extramuros* as a threat to their colony's spiritual purity and moral integrity. The Chinese population essential to the silver trade was described as treacherous, greedy, obstinate, and—most damning to the clergy—insincere or uninterested in Catholicism.[10] When truly irate, the Spaniards would accuse the Chinese, without proof, of rampant sodomy (*el pecado nefado*). Tension between the Spanish and Chinese found resolution in a cycle of oppression, rebellion, and massacre: the Chinese rebelled in 1603, 1639, 1662, and 1686, and were suspected of preparing a revolt in the 1740s. Each seventeenth century rebellion was violently put down, resulting in the deaths of many Chinese migrants and the expulsion of thousands of survivors.[11] Displays of non-Hispanic culture in *Extramuros* were also viewed with general distrust. Asian festivals, gambling, and other traditions (most commonly ascribed to the Chinese) were considered to be threatening the evangelizing mission and contaminating the faith of the *naturales*.[12]

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[9] Administrators complained about *Extramuros* for a variety of reasons. Some objections centered on how *Extramuros* and the galleon trade drained Spanish coffers. The *Contaduría* in Seville routinely protested (and at times nearly stopped) the galleon trade on the basis that China was depriving Spain of silver, the lifeblood of the mercantile economy. Of more immediate importance to the merchants of Spain, the galleon trade provided Nueva España with a source of silk, breaking the Spanish monopoly and thereby depriving Spanish merchants of customers. The other common source of complaints, the city's diversity, is described above. See O.H.K. Spate, *The Pacific Since Magellan, Volume 1: A Spanish Lake* (Canberra: Australian National University, 1979), 196 and 218-220.

[10] For instances of suspicion of the character of the Sangleyes or the fear that the Sangleyes would revolt against or poison the Spaniards in Manila, see , *AGI, Filipinas* legajo 27, Número 148; *AGI, Filipinas* legajo 27, Número 161*; AGI, Filipinas* legajo 27, Número 172*; AGI, Filipinas* legajo 27, Número 207*; AGI, Filipinas* legajo 27, Número 208*; AGI, Filipinas* legajo 196, Número 6 (which concerned Chinese fishing too close to the Castillo de Santiago in 1733); and *AGI, Filipinas* legajo 450, Número 11. Also, see Miguel de Benavides, "Letters from Benavides to Felipe III," in *The Philippine Islands, 1493-1898: Volume XII, 1601-1604,* ed. Emma Helen Blair and James Alexander Robertson (Cleveland: Arthur H. Clark, 1906), 95-97.

[11] Phelan, *The Hispanization of the Philippines,* 11 and *AGI, Filipinas* legajo 450, Número 11. Alternatively, a recently published history of the Chinese in Manila is available in Spanish. See Juan Gil, *Los chinos en Manila: siglos XVI y XVII* (Lisbon: Centro Cientifico e Cultural de Macao, 2011).

[12] *AGI*, *Filipinas* legajo 27, Número 208.

To maintain control over the Asian city of *Extramuros*, the Spanish colonizers relied on *soldados* (soldiers). These men were sourced from all corners of the Spanish Empire. The *soldados* in Manila included men from Southern Spain (Andalusia), Nueva España (especially the ports of Acapulco and Veracruz as well as Mexico City) and Pampanga, a province of central Luzon directly north of Manila.[13] The Spanish and creole soldiers occupied positions of moderate authority within the colonial hierarchy. They were vital to maintaining control, policing *Extramuros,* and defending *Intramuros,* but the *soldados* were not well-regarded. They were paid little, their barracks in the *castillos* were in a state of chronic disrepair, and some were distrusted on the basis of their ethnicity.[14] Several officials complained to the King about the quality of soldiers being sent, arguing many were of inferior Amerindian heritage and were therefore untrustworthy and immoral.[15]

The *soldados* were therefore a sequestered contingent among the colonizers, a forceful emblem of colonial authority not entitled to its full benefits. Many were poor, and all were likely far from family or acquaintances. They were also subject to the tropical diseases of the Philippines and Southeast Asia. It is likely that, upon arrival, many expected never to see their homes or old families again. Some would make new lives in Asia. Others died without leaving much trace. And it is impossible to tell, since the documents offer no count, how many possibly despaired and prematurely ended their lives. It may be concluded, though, that the *soldados* were an especially vulnerable group (if not the most vulnerable) amongst the colonizers.

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[13] Larkin, *The Pampangans,* 27.

[14] In regard to soldiers' wages and the difficulty the colonial government had paying those wages, see *AGI, Filipinas* legajo 31, Número 40. For distrust of soldiers based on their ethnicity, see *AGI, Filipinas* legajo 77, Número 76.

[15] One letter, dated 1690, for the King from the Audiencia complained that the soldiers were part of the corruption stifling the islands. *AGI, Filipinas* legajo 163, Número 22.

The *soldados,* even before they were assigned to the Philippines*,* were expected to practice the Catholic faith, and all fell under the jurisdiction and scrutiny of the local chapter of the Inquisition (as did mariners and other colonial migrants in the islands). The Inquisition's records of these colonial migrants' transgressions against the faith offer the most complete account of their actions available today.[16] Of those cases, the most relevant to this dissertation deal with herbs, hexes, and the various cures and charms that were available throughout *Extramuros*. The *soldados*, mariners, and other professionals*,* the records show, had no shortage of choices for sorcery because *Extramuros* hosted experts in Asian rituals and magic, as well as several hybrid rituals that combined Catholicism with

[16] Inquisitorial records are an oft-studied resource amongst historians, who have used them to trace histories of heretical thought, faith, and class. It is an assertion of this dissertation that, with regards to hexes based on herbs, these records can also reveal lower class colonists' impressions of the environment (at least as it related to Catholicism). The Inquisition imposed boundaries on the worship of Christ and God based on a highly educated clergy's study of scripture. Thus, they embody a class conflict between the Catholicism of "high culture" and the myriad faiths of "low" or "popular culture." When those forms of Popular (Folk) Catholicism—or non-Catholic faiths—utilized local herbs or features to create hexes and spells, the Inquisition inevitably investigated and detailed them. Thus, through accounting for differing expressions of faith, the Inquisition records unintentionally track lower class Catholics' perceptions of an environment.
To better understand what elements of popular culture might be preserved in Inquisitorial records, it is useful to turn to the collected works of Carlo Ginzburg. His focus across several works was the construction of heresy through class, how misunderstandings between high and popular culture were expressed through the Inquisition. Key to his approach was understanding the suspicion of elites towards popular expressions of faith while simultaneously accounting for how peasant traditions and outlooks morphed (or distorted) high culture. *Ecstasies: Deciphering the Witches' Sabbath* and *The Night Battles,* both focus on elites' perceptions of peasant traditions and how Inquisitors forced local customs to conform to their definition of heresy. One example of "misunderstanding" between the two cultures is the *benadanti*, a group who walked in their dreams combatting evil. The Inquisition could not conceive of their night walks without relying on a preconceived notion of the witches' sabbath. This process recurred in the Philippines, where *babaylans* (priestesses), local herbs, and *anitos* (spirits) were made to conform to Spanish conceptions of witches, *hechicería* (hexes), and idols (Chapter 3). See Carlo Ginzburg, *The Night Battles: Witchcraft and Agrarian Cults in the Sixteenth and Seventeenth Centuries,* trans. John and Anne Tedeschi (Baltimore: Johns Hopkins University, 1983), 4, 22-23, and 88. For more on the witches' Sabbath as a concept—and the role of the Inquisition in creating it—see Carlo Ginzburg, *Ecstasies: Deciphering the Witches' Sabbath,* trans. Raymond Rosenthal (Chicago: University of Chicago, 1991), 9, 65, and 67-72. As to the distinction between popular or "low" and elite or "high" culture, Ginzburg offers a complete and brief explanation in his Introduction for *The Cheese and the Worms.* See Carlo Ginzburg, *The Cheese and the Worms: The Cosmos of a Sixteenth-Century Miller,* trans. John and Anne C. Tedeschi (Baltimore: Johns Hopkins University, 2013), xxi-xxvii. For information on the *babaylans,* see Carolyn Brewer, *Holy Confrontation: Religion, Gender, and Sexuality in the Philippines, 1521-1685* (Mandaluyong, Philippines: Raintree Publishing, 2001), 186-187.

traditional remedies. All indicate that these lower-class members of colonial society held a distinct understanding of both Luzon's environment and the natural hazards it produced.[17]

## Records of Deviancy: How the Soldier Class Used the Land

The Inquisition records indicate migrant laborers were concerned with material benefits and the immediate improvement of their condition, objectives which occasionally chafed against the restraints imposed by the colonial regime. Of the hundreds of denunciations from the seventeenth century, not to mention a collection of cases, reconciliations, and inspections, the clear majority concern money, sex, and sickness. The most commonly denounced crime was blasphemy, which normally occurred after a soldier lost at the gambling table. After blasphemy and solicitation—the crime of priests abusing their power for sexual favors from women in their congregation—the other common crimes

[17] Understanding how colonial elites and lower-class colonists could maintain separate understandings of the environment, and identifying that conflict within Inquisitorial records, requires utilizing methods advanced by William Cronon. Cronon's scholarship examines how environments are perceived and constructed over time. In *Changes in the Land*, Cronon argues that in the American Northeast early colonists and Amerindians held radically different understandings of the natural environment. Their understandings of the environment were shaped by their past experiences and respective cultures, which were brought into conflict in a contested space: the forests of New England. Thus, the English colonizers viewed North America as wild, despite all the demonstrable ways Amerindians had cultivated or altered the environment. Their alterations came from a cultural tradition the English could not recognize.
Cronon's work is applicable beyond the woods of colonial America. In the introductory essays of *UnCommon Ground*, he broadens *Changes in the Land*'s original thesis by asserting that wilderness and cityscapes are equally artificial; all environments (even the most "wild") are constructed, both physically through human modifications and figuratively, since the environment is understood through the lens of culture. Paradoxically, our environment or surroundings are composed of non-human elements but are inescapably human.
The shared premise between Cronon's two works, that the environment is understood through culture, has fascinating implications for a colonial space like Luzon. Each migrant in *Extramuros* would have perceived the foreign environment of Luzon through the lens of their own traditions and customs, their culture. The *soldados* and mariners of the Spanish Empire, as explained above, were ethnically diverse but were simultaneously united by their economic status and their alienation. They were in a foreign land with limited financial and familial support, both exerting and enduring the control of the Spanish Empire. Within that empire, their multitudinous beliefs were all treated as if they were expressions of one folk faith, a popular culture based on being rootless servants of the colonial regime. See William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England, 20th Anniversary Edition* (New York City: Hill and Yang, 2003), 9-10, 50-52, 180. See also William Cronon, "Introduction: In Search of Nature," in *Uncommon Ground: Rethinking the Human Place in Nature,* ed. William Cronon (New York City: Norton and Co., 1996), 25, 35, and 51.

were various *hechizos* (hexes). These spells employed herbs, chants, and rituals from across the Spanish Empire to cure sicknesses, imbue luck, seduce lovers, and even murder enemies. The *hechizos* demonstrate three important features of lower class life amongst the colonizers: they saw the natural environment in the Philippines as hosting wondrous or magical powers; although Catholic, many colonial migrant laborers were willing to attempt hexes to improve their physical condition; and they viewed hexes as applicable for a variety of maladies and personal disruptions. Their displayed pragmatism during personal disruptions implies similar responses were employed during shared disruptions caused by natural hazards.

Before proceeding, an overview of the available Inquisition records is necessary. The records for the Philippine Inquisition reside in the *Archivo General de la Nación* in Mexico City and may be separated into four categories. The first, denunciations, is the largest. It contains testimonies against various residents of Luzon that were not pursued in a formal case (normally because the case was easily settled or the denunciation was not substantive enough to pursue). The second category, formal investigations, includes the denunciations, investigations, and punishment of more serious offences, such as heresy. The third category, *reconciliaciones*, refers to the testimony and conversion of various Protestant Europeans who arrived in Manila.[18] Finally, the fourth category is customs, the investigation of various ships arriving in port for contraband. In addition to these records, the Inquisition

[18] Reconciliations with the Catholic Faith, like denunciations, were most common during the first half of the seventeenth century, during the Wars of Religion. Most often, the applicants were from England or the Southern Lowlands (modern Belgium) and arrived in Manila through serving on either Portuguese or Dutch ships. The applicants either arrived with the Portuguese, or found passage from Mindanao to Manila, where they renounced Protestantism, confessed to any moments they took part in "heretic" hymns or acts, and formally converted before signing their name to a binding letter of *reconciliación.*

materials also include administrative letters that refer to internal matters, jurisdiction, and funding.

The source material indicates the Philippine Inquisition was especially active before 1645. Of the 249 denunciations assessed for this dissertation, 185 are from the period between 1619 and 1626. The vast majority of denunciations came from Manila and concerned activity in *Extramuros*. Some testimony is available from Nueva Segovia as well as the Southern Visayas (Arevalo), but only for select years. There are denunciations available as late as 1660. Formal cases and prosecution were more common in the latter half of the century and continued until the 1670s, when the Inquisition's activity decreased after deposing Governor Diego de Salcedo.[19] The records assembled for this dissertation, though not comprehensive, offer partial understanding of the constants of migrant laborers' experiences and their methods for dealing with the disruptions inherent to life in Luzon in the early- and mid-seventeenth century.

The denunciations offer the clearest insight into soldiers' and mariners' comprehensions of Luzon's environment. A special subset of these denunciations includes tales of sorcery, hexes, and charms based upon an array of indigenous herbs and rituals. The most common source of denunciations, though, was for blasphemy and hexes related to gambling. One of the more outlandish series of denunciations concerned various soldiers' attempts to acquire a lizard with two tails (*lagartixa con dos colas*). In 1621, two soldiers denounced themselves to the Inquisitors for this crime. The first was Andrés de la Mata, a

[19] F. Delor Angeles, "The Philippine Inquisition: A Survey." *Philippine Studies*, Vol. 28, No. 3 (1980): 281-283. Following the Inquisition's role in the imprisonment of Governor Salcedo and the consequent chaos, the new Governor Manuel de León treated the institution as a threat. He imprisoned the overzealous inquisitor who jailed his predecessor, and this appears to have quieted the Inquisition for several years. This is not to say the Inquisition ceased operation, and whether denunciations were rarer in this century remains unclear (See Chapter 3). It is possible that records for later years were lost in transit from Manila or remain accessible in the bound *tomos* of the Inquisition archives in Mexico but have not been found yet.

twenty-five-year-old soldier originally from the Balle de Penarrubia. In Cavite, he recounted to the *comisario* Domingo Gonzalez how, a year before, another soldier named Domingo Perez Perea[20] mentioned seeing a lizard with two tails, reputed to guarantee its owner victory when gambling. After an unsuccessful first attempt, they acquired a dead, two-tailed lizard with the "help of some *indios*". Andrés de la Mata affixed the dead lizard to his right arm and eagerly joined a table, where he promptly lost.

Andrés de la Mata's recorded testimony states he returned the lizard to its original owner and disavowed the practice after hearing that certain hexes were needed to activate the corpse's power. Several months later, however, a chance encounter with a Visayan woman allowed Andrés de la Mata to experiment with another two-tailed lizard. He affixed it to his right arm and lost. Then he tried his left arm and still lost. Afterwards, he stopped experimenting with lizards.[21]

Other soldiers confessed to pursuing the lizard with two tails in 1623. Juan Diaz Baptista, a Mexican soldier (age thirty-four), confessed to the crime in Binondo. He testified that, once he obtained the lizard, he placed it in a cooking pot filled with milk with a stone placed over its mouth. After the lizard drowned, Baptista affixed it to his arm. Despite his new charm, he still lost at the tables.[22] Another soldier who was born and raised in Manila, Lucas Martin (age twenty-one), confessed to obtaining a lizard from an *indio* named Pablo Andres. His dried, two-tailed lizard provided no supernatural luck at the tables either.[23] Gonzalo Salgado, a mariner and resident of Cavite who was born in Nueva España (thirty-four-years-old), heard a variant of the legend; he thought he only needed the tails of such a

[20] Another soldier (twenty-four-years-old) originally from the village of Las Galugas in Portugal.
[21] *AGN, Inquisición* Tomo 336, 3R-3V. "*Inquisición* Tomo" will be abbreviated Inq in future references.
[22] *AGN,* Inq 220*,* 53R.
[23] *AGN,* Inq 220*,* 94v-95R.

lizard. Once he acquired a two-tailed lizard in the Franciscan pueblo of Dilao, he wrapped the tails in cotton and discovered, like the other soldiers, that the tails won him nothing.[24]

Each of these men confessed of their own volition, seemingly compelled by guilt. Their crime, according to the Inquisition, was having faith in the ability of the lizard with two tails and various rituals to increase their luck and resolve their material problems. Hexes, to the Inquisitors, were representative of non-Christian beliefs; belief in their efficacy was a slippery slope to reneging on faith (*reniega*) or even heresy. But the stories also hint at the perceived power of Luzon and its wildlife. The lizard with two tails was exceptional, prompting soldiers to believe in its magical qualities. It was a wonder (*maravillosa*), and they apparently believed something so outlandish and rare could affect the physical world.

The collected denunciations are also indicative of the diversity and shared motivations of the soldiers. Men from Iberia, Mexico, and Luzon put their faith in the lizard's ability to bestow unnatural luck. The commonality between their stories is their search for material benefits. They each wanted to win more money, and each believed an unusual creature in the Philippines accompanied by the correct ritual could bring them wealth. Their desire was not for abstract benefits or the moral assuredness provided in Church, but rather for immediate satisfaction and observable improvement.[25]

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[24] *AGN,* Inq 220*,* no page number provided.

[25] The many instances of blasphemy from gamblers are also indicative of a preoccupation with the material world. Gambling was a favorite hobby of the soldier class, and prolonged losses could rile participants. Many grew angry, some cursed, and a significant number in their anger uttered a phrase they would quickly regret. Some cursed God, some called the Virgin a whore, and some even offered their souls to Satan if he would help them win. A small fraction committed the especially inadvisable act of renouncing God entirely in a fit of rage, which could draw the full ire of the Inquisition. For instance, see *AGN,* Inq 220, 105R; *AGN,* Inq 336, 399R; *AGN,* Inq 442, 472R; *AGN,* Inq 442, 465R; and *AGN,* Inq 585, 202R. A particularly prominent example in the record is the soldier Pedro de Torres, who was accused of reneging against God. See *AGN,* Inq 336, 19R-19V and *AGN,* Inq 336, 20R-20V. The same soldier appears in a preceding volume, cited for other instances of blasphemy. See *AGN,* Inq 220, 32R-34V and 63R.

Gambling was not the only worldly concern of the lower classes. Other denunciations concerned crimes of passion and intrigue. Some were relatively benign—a doctor asked for herbs to render a sea captain friendlier—while others were malevolent.[26] Among the more memorable cases of *hechicería* was one involving a fourteen-year-old boy named Francisco de Arcos. He denounced himself and an acquaintance who offered him a *palillo* (toothpick) that he was to place in his mouth before blowing on a girl he desired. This was seemingly intended to physically placate her so Francisco could rape her.[27] Such hexes for altering the wills of women or, less often, men were seemingly commonplace in *Extramuros*. In 1650 one Francisca Dias, a twenty-eight-year-old widow living in Manila, asked a visiting "moro" from Ternate (the largest of the Moluccan Spice Islands) for hexes to sway the will of a man.[28] One Francisco Bagan, also a resident of Manila, denounced himself for a similar hex in 1651. He had searched for herbs and hexes to convince a woman to love him.[29]

While the examples provided so far have sinister undertones, several variations of love potions and charms existed, most of which did not subdue or control the targeted person. Lucia Gonzalez, a twenty-three-year old widow in Manila, denounced herself for applying an herbal concoction in 1651. She applied her herbal mixture to the scalp of her late husband, Pedro Suarez. The mixture, when applied, was supposed to benefit a marriage, though exactly how is not detailed in the Inquisitor's report.[30]

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[26] Inq 220, *AGN,* 178R-V.
[27] Inq 220, *AGN,* 20R-V.
[28] Inq 442, *AGN,* 461R.
[29] Inq 442, *AGN,* 468R.
[30] Without knowing the specific hex, it is difficult to determine if the herbal mixture was supposed to be beneficial by altering the attitude of the husband or was an aphrodisiac. Unsurprisingly, sexual matters were not often discussed plainly in Inquisitorial records. Even in cases accusing priests of soliciting their parishioners, innuendo is common. *AGN,* Inq 442*,* 471R.

Several other denunciations describe herbal mixtures that produced alluring scents, served as aphrodisiacs, and did all manner of things to guarantee sex for the user. A man named Martin de Traxillo, a soldier, bought drugs from one Don Juan, a "moro" from Ternate in 1623. These drugs, he was told, would restore the "friendship" he and the young woman had previously enjoyed.[31] Diego de Varhas, a twenty-seven-year-old man, testified in Binondoc in 1623 that an unknown *indio* in the Pintados provinces (Visayas) told him that herbs on a certain mountain would attract women. Juan Fernandez Crucero, a soldier, testified the same month that he heard youths in a bathhouse saying that a drug called puyomate would make a man irresistible to women (he insisted he never tried to use this drug). An older man and a surgeon in Manila, Juan de Ysásogoara testified to trying an herbal mixture with a purportedly similar effect. His, provided by one Francisco de Japón (a Japanese man) in 1622, was ineffective. Ysásogoara's disappointment appears to have motivated his denunciation of his own actions as well as Francisco.[32]

The men and women who provided hexes, curses, and love potions most often came from Ternate or Mindanao. Perhaps the most famous of these *hechiceros* was a man referred to as Don Juan. The man, originally from Ternate and part of the coterie accompanying the sultan of Maguindanao during his prolonged stay in Manila, was associated with several hexes to woo women and murder enemies.[33] He created his hexes

[31] Again, whether "friendship" is euphemistic in this instance is unclear. *AGN,* Inq 220*,* 98R.
[32] *AGN,* Inq 336, 300R. The herbs needed for these rituals often, but not always, came from the Philippines and southeast Asia. In 1622, Bartolome Ximenez, a young soldier, testified that two Mexican women aboard the Naos (the Manila Galleons) were seen muttering incantations and asking for herbs from the Americas. Four years later, a mariner named Cristobal de la Cruz would denounce a "negra" in Acapulco for selling him American herbs to affect women as well. A testimony from that ship's navigator implies Bartholome Ximenez had an illicit relationship with one of the women, Joana de Ortega. This, he believes, may have been related to the herbs de Ortega was searching for. *AGN,* Inq 336, pages not provided in tomo (likely 117V or 118R). *AGN,* Inq 336, 300R. Also see *AGN,* Inq 336, 26R-V
[33] *AGN,* Inq 220, 126R.

using a combination of incantation, rituals, and herbs. Some of these rituals even involved burning pieces of paper with Arabic script, which drew the notice of the Inquisitors.[34]

The most sordid case involving Don Juan was the attempted murder of the mariner Bernardino Corco. A man named Pedro de Valle lusted for Corco's wife and, while Corco was aboard the galleons, conspired with Don Juan to craft two hexes. The first would bewitch Corco's wife, making her fall in desperate love with Pedro. The second would kill Bernardino from a distance, by illness or some storm or misfortune. This plot was revealed to a young man named Andres de Asta by a Japanese man who somehow observed these rituals. Andres de Asta then denounced Pedro de Valle to the Inquisition.[35] After he returned to Manila, Bernardino Corco also learned of the plot against him. He then visited Don Juan, both to ascertain whether hexes had been cast and to learn how to undo them. Manuel de Brito, an artilleryman who attended Corco's meeting with Don Juan, testified to Corco's own participation. Apparently, Corco was afraid his wife had indeed been seduced and wanted revenge against Pedro de Valle as well.[36] It is telling that, rather than ask a priest or utilize the Inquisition, he ironically turned to the same sorcerer as his enemy. Clearly, he believed in the power of these hexes and that they could supersede the Catholic God.

The quarrel between Pedro de Valle and Bernardino Corco was apparently well-known. Several denunciations associated with their case were recorded by the Inquisitors. An unintended witness named Anton Bastian, a mariner, denounced all involved, as did another mariner named Domingo Perez. Pedro, a slave to Bernardino Corco, testified that his master had taken part in hexes with Don Juan.[37] Beatriz, a slave to Pedro del Valle,

[34] *AGN,* Inq 220*,* 30R.
[35] *AGN,* Inq 220*,* 138R.
[36] *AGN,* Inq 220, 126R.
[37] *AGN,* Inq 220, 135R-V.

testified against her master as well.[38] Isabel de Morales, the wife of Corco, also denounced del Valle and the hexes he had used to seduce her.[39] All of them referenced Don Juan's rituals, which involved certain herbs, burning papers with foreign symbols, and arcane incantations.

Each of these cases speaks not only to a belief in magic in colonial Manila, but also to the versatility of hexes. Love, affection, and life itself were all considered malleable from a distance through the herbs of Luzon and—in the case of Don Juan—through pre-contact customs whose strange allure and exoticism were emphasized in Inquisitorial records. Some of these rituals incorporated elements the Spanish Inquisitors recognized as dangerous and potent; the Arabic script Don Juan burned lent a sinister character to a pre-contact ritual. Other *hechizos* referenced undefined or little-known plants, objects whose powers over the physical world were unknown to Western institutions. Linking all the hexes described are elements of wonder and exoticism. Manila and the Philippines were a distant and alien world, which allowed newcomers to imagine it as they wanted: a place embedded with strange and terrifying power.

The willingness of the migrant laborers to embrace these plants, hexes, and rituals is both indicative of their adaptability and lack of agency. Sexual and romantic frustration especially were beyond the capabilities of many to resolve, so they instead invoked otherworldly powers. Implied in these decisions to employ hexes is that friends and family, if accessible, were unable to help resolve these problems. Lack of status and wealth

[38] *AGN,* Inq 220, 130R-V.
[39] *AGN,* Inq 220, 45R-V.

presented barriers to sexual fulfilment that could not be readily overcome, but soldiers and others were willing to try the local alternatives.[40]

Herbs and hexes were also utilized to remedy illness and injury.[41] Denunciations involving herbs taken to cure or relieve pains and aches were common in Manila throughout the seventeenth century.[42] Herbs from the Philippines and Asia were common in the denunciations, but illicit medicines and plants from other Spanish colonies occasionally appear in records as well. Some denunciations concerned chocolate, or at least consuming it at improper times.[43] Of greater concern to Inquisitors, though, was peyote. A Meso-American cactus, peyote was a commonly employed hallucinogenic associated with Amerindian religious practices. Therefore, the Inquisition considered it a highly inappropriate substance linked to paganism. A pair of denunciations from Juan de Oliba, a *mestizo* born in Mexico, and his wife, Francisca Martin, demonstrate that Peyote made the journey across the Pacific.[44] A matching pair of denunciations from their acquaintances, Bartolomé de Leon and Leanor de la Concepción, reveal that Juan de Oliba was a soldier suffering from chronic pain. To alleviate his pain, he and his wife purchased peyote from a woman named Maria de Albarado. However, the denunciations claimed that both Juan and Francisca took the drug multiple times in the hopes of hallucinating, including—scandalously—once in a church.[45]

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[40] It is easy, given the lower class's apparent willingness to try hexes, to mistakenly disregard their Catholic faith. A fair number of soldiers and mariners, however, denounced their own transgressions. Of course, the majority denounced themselves knowing that witnesses could testify to their use of hexes or blasphemies. Spanish-Catholicism was undeniably a coercive faith in this period, but that does not lessen the genuine belief of the practitioners. Soldiers and others denounced themselves and each other both because they feared the consequences of silence and out of loyalty to the faith.

[41] *AGN,* Inq 442, pages not available in tomo.

[42] For instance, *AGN,* Inq 220, 90R; *Ibid,* 54R; *Ibid,* 118R-118V; *AGN,* Inq 336, 9R; *AGN,* Inq 442*,* 471R; and *Ibid,* 475R.

[43] See *AGN,* Inq 442, 388R-388V.

[44] *AGN,* Inq 220, 21R-V.

[45] *AGN,* Inq 220, 22V-23V.

Once again, the power of these herbs was rooted in their exoticism, their status as products of a foreign environment. However, what drove the *soldados* and others to try these medicines (including, occasionally, men, women, and priests from the administrative classes) was more than mere deviancy. Many suffered from sicknesses or chronic pains. Hexes or drugs promised an escape from such suffering, if only for a brief period. Utilizing such hexes, as discussed above, was meant to provide a physical relief that lower-class colonizers could not obtain by themselves or through prayer to their Catholic God.

There was a final *hechizo* employed on behalf of Luzon's migrant laborers that must be explored: the *bilao* ritual. A bilao is an indigenous basket constructed from interwoven reeds, and this object was at the center of several denunciations in Manila. In each of the denunciations, the denouncer had recently suffered a robbery. As the victims often could not afford to replace lost items, which included socks, harquebuses, and even a bishop's personal belongings, they would employ a trained *hechicero* or *hechicera* to find the objects. The hex caster would stand over a *bilao*, sometimes using shears to cut up various ingredients, and then utter an incantation. The ritual would identify the thief, who could then be confronted.

The incantations indicate that this ritual evolved in response to colonial Manila's diversity. One Miguel Garcia, when he suffered a theft, employed the services of Juana de Morales, a *mestiza* from Nueva España.[46] To identify the culprit, she invoked the Christian God over the bilao.[47] Another man, born in Seville and named Hernando Flores, had the ritual performed by a woman he thought was Indian (*bengali*). She attempted to reveal the

[46] *AGN,* Inq 220, 117R.
[47] *AGN,* Inq 336, 314R.

thief by invoking the name of God, Saint Peter, Saint Paul, and the angels over a Bilao.[48] Several other denunciations involved a female slave in the house of a woman named Doña Cathalina. During the 1620s, she apparently performed the ritual on several occasions, though her exact incantation was never recorded.

Each of these stories about the bilao ritual is indicative, yet again, of the material concerns of the colonial underclass. Clearly, the purpose of a hex was to enact positive change for the user in the physical world. And the diversity of the people performing these hexes and their embrace of indigenous objects is significant; the foreign or exotic element gives the hex power it would otherwise lack, making the colonized environment of Luzon indispensable. Most noteworthy, multiple testimonies indicate hex casters invoked Christian saints and even the Christian God. This suggests that hexes, like *fiestas,* were a sign of cultural hybridity, and the *bilao* ritual could be practiced by a range of people, not just the *naturales* of Luzon. Ultimately, this story is indicative of a dynamic, expanding world of hexes. Even hex-casting could be creolized.

## Conclusions

Quintessential characteristics of the colonial migrant laborers' relation to the physical environment of Luzon are discernable from the cases presented. Most apparent is that soldiers and others approached the environment with materialistic ambitions. The denounced desired herbs for hexes that could bestow luck, win money, alleviate ailments, and satiate their thirst for sex and—in some cases—love. Their materialism embodied a

[48] *AGN,* Inq 355, 459R. Similarly, a slave named Lucia, to help a fellow slave from Ternate, asked a freed Bengali man named Francisco to perform the ritual (though she denounced him to the Inquisition soon after). *AGN,* Inq 355, 471R.

variety of goals that stood in stark opposition to the asceticism of Catholicism. As Ginzburg asserted in *The Cheese and the Worms*, peasant lives and their language reflected a close relation to the physical world.[49] The Inquisition documents show that the colonial migrants' ambitions were indeed grounded in that world too.

However, it is essential to recognize that *soldados,* mariners, and others pursuing hexes were not dismissing Catholicism. The men and women who denounced others and were denounced themselves were all Catholics. Some were aware that, by searching for herbs and hexes, they were committing a crime. Others were not. The documents therefore do not demonstrate the outright rejection of Catholicism by the lower classes. Instead, they indicate the colonial migrant laborers did not practice Catholicism exclusively. Rather, they believed rituals tied to lands and peoples foreign to Catholicism (Luzon, the Visayas, and even Nueva España) could affect the material world in the same manner as God and His saints. When faced with challenges like sickness, loneliness, or poverty that Catholicism could not immediately remedy, they searched for alternatives. Their repeated decisions to utilize the powers of the foreign environment of Luzon reflect a practicality honed through poverty.

There certainly was no shortage of hexes in Luzon, especially in *Extramuros*. Hexes originating from Mexico, Ternate, the Visayas, and the mountains of Luzon all took place within the city beyond the walls. Nor were these hexes unchanging. Some incorporated elements of the Spanish colonizers into Filipino tradition: the Christian God and all His saints could be invoked in ways no priest would approve of. Alas, it is not possible from the Inquisition sources to know whether the soldiers and others found comfort in this deviant

[49] Ginzburg, *The Cheese and the Worms,* 58.

cosmopolitanism.[50] Several denounced their actions or the actions of *hechiceros,* but usually after trying an unsuccessful hex. Yet, new *soldados* and mariners continued to purchase hexes throughout the seventeenth century. Despite persistent failures, the less fortunate members of the Spanish colonial forces insisted, through their actions, on the power of hexes to change the world and improve their station. In so doing, they insisted upon the supernatural power inherent to the environment of Luzon in the seventeenth century.

The frequency of denunciations in the seventeenth century makes their total absence in the eighteenth all-the-more conspicuous. As noted in Chapter 3, a decrease in the Inquisition's activity can be ascribed to their role in deposing Governor-General Salcedo in the late 1660s. Furthermore, the decrease in denunciations also reflected the success of the policies of Spanish *reducción* and proselytization. The indigenous priestesses of Central Luzon (*babaylan*) were ostracized and thoroughly delegitimized by the conclusion of the

[50] The emergence and transmutation of *hechicería* in Luzon echoed the emergence of Folk Catholicism in Mexico and long-standing traditions in Spain. Catholicism had spread to Europe through Rome and the Mediterranean. In the Middle Ages, it was localized. Traditions linking the new religion to a location, such as miracles, pilgrimages, and processions for specific saints, created thousands of permutations of the faith. In Spain, different towns celebrated different saints, often for their holy intervention and protection from calamities such as storms, blights, or plagues. The supposed power of the saints was so problematic that the Council of Trent set about circumscribing their influence through procedures for verifying miracles. For more information on Folk Catholicism in Spain, see William A. Christian, Jr. *Local Religion in Sixteenth-Century Spain* (Princeton: Princeton University, 1981), 21-22, 23-25, 29, 34-35, 39-40, 147, 171, 175-176, 207-208.
As in Europe, Folk Catholicism in Mexico was a blend of local customs with the Catholicism Spaniards tried to impose. Local miracles and idiosyncratic patterns of devotion ultimately created a novel variant of Catholicism. The Virgin of Guadalupe, whose beneficence was believed to prevent flooding, is a prominent example of Folk Catholicism in Mexico. Just as in Spain, the peculiarities of the local environment—its characteristics and its extremes—played a role in localizing Catholicism, of adapting it to a new land. However, according to Jorge Cañizares-Esguerra, indigenous knowledge of the natural environment became marginalized in Mexico during the Baroque era. Instead, Catholic studies of the natural world drew on European knowledge and learning to explain the Mexican environment (and these ideas were later modified by Mexicans to highlight the exceptionalism of the New World). For more on the modification of Spanish faith and natural observation in the New World, see Jorge Cañizares-Esguerra, "From Baroque to Modern Colonial Science," in *Nature, Empire, and Nation: Explorations of the History of Science in the Iberian World,* ed. Jorge Cañizares-Esguerra (Stanford: Stanford University, 2006), 46 ("By the eighteenth century indigenous systems of knowledge had transmuted into hybrid forms of Folk Catholicism and had become marginal in Latin American societies"), 47, 49, 52 (Mexican flooding and the role of emblems and symbols in preventing floods), 62 (Creole modification of "scientific idioms" to express "proto-nationalism"). From the same book, see Jorge Cañizares-Esguerra, "New World, New Stars: Patriotic Astrology and the Invention of Amerindian and Creole Bodies in Colonial Spanish America, 1600-1850," in *Nature, Empire, and Nation: Explorations of the History of Science in the Iberian World,* ed. Jorge Cañizares-Esguerra (Stanford: Stanford University, 2006), 67, 85-87

seventeenth century.[51] This undoubtedly reduced the number of hex-casters in *Extramuros*. However, there is evidence that hexes persisted in Central Luzon (and throughout the Philippine Islands). Vernacular-Spanish language dictionaries published as late as the nineteenth century included words for indigenous spirits, witches, and hexes. Tagalog, the primary language of central Luzon, possessed dozens of words for hexes, love charms, witches, and the specific misfortunes they caused.[52] Given the human needs—lust, money, cures, and catharsis—and the physical condition of the *soldados,* mariners, and others remained constant between the seventeenth and eighteenth centuries, *hechiceria* likely persisted in *Extramuros* and Central Luzon, if less visibly.[53]

What, then, is to be said of the colonial migrant laborers' rationalization of the natural extremes inherent to Luzon? Without a written account, little can be stated definitively. However, if materialism, pragmatism, and faith in the power of Luzon's environment are indeed characteristic of this group, then their responses to natural extremes can be imagined. We, as historians, can imagine a colonial lower class that embraced the moral universe of Catholicism and the idea that natural extremes were a product of collective immorality, but also allowed for other powers and beliefs. Local hexes and customs would have been practiced alongside prayer to ward off unfavorable events, such as storms, blights, or plagues. Likewise, pagan rituals and medicine would have been a valuable resource for those suffering in the wake of a natural hazard. The approach of the colonial migrant laborers to natural extremes ultimately would have been similar to their

[51] Brewer, *Holy Confrontation,* 200 and 210.
[52] *Vocabulario de la Lengua Tagala*, ed. Juan de Noceda and Pedro de Sanlucar (Manila: Ramirez y Giraudier, 1860), 60, 66, 84, 125, 214, 218, and 312.
[53] Indeed, hexes and charms are still available for purchase in Manila and throughout the Philippines in the twenty-first century.

approach to problems associated with sex, health, and luck: pragmatic materialism drawing on as many creeds and rituals as possible while still identifying as Catholic.

# Conclusion

The objective of this dissertation was to determine whether and to what extent natural hazards impacted Spanish colonial Luzon between 1645 and 1754. It assessed impact in three categories: physical, economic, and cultural, which roughly corresponded to impact in the short-, medium-, and long-term. The physical impact of various hazard events, determined through damage done to structures, was shown to be variable, with damage done and the time needed for recovery dependent upon the magnitude of the hazard, human responses, and independent developments in the colonial economy. The impact of natural hazards on finances was, likewise, shown to be variable and dependent upon the magnitude of the hazard concerned, vulnerabilities within Luzon, and prevailing political-economic trends.

Acting as a process, natural hazards exerted constant pressure on governing institutions to adapt to the disruptions inherent to the Philippine environment. Hazards generated responses from colonial administrators, the regular clergy, and the Inquisition; the responses of each institution changed over time owing both to adaptations implemented to increase resilience to natural hazards and to contemporaneous, unrelated developments within colonial institutions. In particular, the Inquisition's decreased role in responding to natural hazards in the eighteenth century primarily reflected that institution's declining influence in Rome, Madrid, and Manila.

Finally, the cultural impact of natural hazards was shown to differ across class and race. The literate elite articulated their understanding of natural hazards through pamphlets that demonstrated a shift from conceiving of calamity exclusively as punishment for

collective sin to a preoccupation with the physical phenomena of extreme hazards and the damage they could inflict upon colonized peoples and tribute. Those same natural hazards provided a means for *naturales* to continue adapting and appropriating the Spanish *fiesta,* thus contributing to an emerging *creole* (Filipino) culture. And lastly, the soldiers, mariners, and other colonial migrant laborers who utilized hexes to deal with personal misfortunes likely employed the same methods to prevent natural disasters or mitigate their effects.

In all these chapters, natural hazards were both a source of stochastic disruptions of varying severity and also a constant pressure on the islands' inhabitants to adapt and reduce their vulnerabilities. The adaptations implemented were rational given perceptions and understandings of calamities in that period. Now, given the impending economic, social, and ecological transformations of the Bourbon Reforms (from 1764 onwards), this dissertation, prior to concluding, will briefly identify which adaptations continued into the nineteenth century.

## The Bourbon Reforms: A Socio-Ecological Transformation

The close of the Seven Years War prompted considerable reforms throughout the Spanish Empire, which was left reeling and impoverished by its defeat. These reforms, instituted under King Carlos III, are collectively referred to as the Bourbon Reforms, and were described by Luis Alonso as an attempt to modernize the Spanish Empire through emulation of the British model. These reforms heralded an economic transformation in the Philippine colony.[1] The establishment of the Royal Philippine Company and attempts to send vessels from Spain around the Cape of Good Hope, broke the stranglehold of the

[1] Luis Alonso, "Financing the Empire: The Nature of the Tax System in the Philippines, 1565-1804," *Philippine Studies,* Vol. 51, No. 1 (2003): 87.

Manila Galleons on commerce. Equally significant was the successful establishment of a tobacco monopoly in the Philippines. The new luxury good required a shift from subsistence farming to plantations, which prompted the Spanish colony to expand deeper into Luzon's interior. Sugar and other cash crops soon followed tobacco, creating the basis of a new economy defined by local agricultural produce rather than American silver. Between 1780 and 1790, and again throughout the nineteenth century, colonial income reached record highs, more than double what was achieved at the height of the silver trade. Thus, the Bourbon Reforms made the Philippine colony, for the first time in its tumultuous history, economically self-sufficient.[2]

This economic shift altered the established dynamic between the colony and the environment. Whereas Luzon's environment had previously been a hindrance to colonization, cash crops rendered the lowlands profitable.[3] Furthermore, the spread of plantations profoundly transformed Luzon's lowland environment, which in turn accelerated the adoption of sedentary lifestyles amongst the *naturales*. The Bourbon Reforms therefore marked a period of transition between two socio-ecological regimes, two different dynamics between the colonial peoples and the island.[4]

Changes to the environment, how it was perceived, and the lifestyles it supported necessarily changed the vulnerabilities of colonial society to natural hazards. The increasing number of *pueblos* and people increased vulnerability to volcanic eruptions and

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[2] *Ibid,* 70, 75, 79, and 86-88.
[3] *Ibid,* 86-88.
[4] The term socio-ecological regime is meant to evoke Bruce Campbell's argument for a great transition. Campbell defined a socio-ecological regime as comprised of six parts: climate, society, ecology, biology, microbes and humans. The transition between socio-ecological regimes in the Philippines was less dramatic. As discussed in this dissertation, the three parameters that changed were society, ecology, and culture. Bruce M.S. Campbell, *The Great Transition: Climate, Disease, and Society in the Late-Medieval World* (Cambridge: Cambridge University, 2016), 21.

earthquakes.[5] Likewise, Manila expanded dramatically in the nineteenth century, and the city's new neighbourhoods proved highly vulnerable to powerful seismic hazards. Tremendous tremors in 1863 destroyed many of the new barrios and buildings in *Extramuros*, as well as several prominent buildings in *Intramuros,* including the governor's palace and the Cathedral.[6] Most notably, however, the transition to a plantation economy greatly expanded the colony's vulnerability to typhoons. A powerful storm could threaten harvests of cash crops, the rice needed to feed laborers, and vessels on the seas.[7]

As vulnerabilities changed, some of the adaptations of the previous one-hundred-nine years were undone, others were made redundant, and some continued unaffected. Older buildings' designs continued to protect those structures from all but the most severe earthquakes, even as new architectural styles proved more vulnerable. Likewise, Spanish institutions, particularly the colonial administrators, continued to adapt their responses to the hazardous environment. However, whereas administrators consistently responded to damage (as in the past), the clergy's responses changed dramatically. The Inquisition was abolished, and the pursuit of heresy ceased to be connected to preventing calamities. Meanwhile, clergymen continued to observe and report on the physical phenomenon of natural hazards, contributing to secular, scientific discussions of disaster in Europe.[8] Yet, despite changing rationalizations of natural hazards, hexes continued (and continue) to be sold on the streets of Manila. Processions against or commemorating natural hazards also continue into the present. Thus, several adaptations implemented in the seventeenth and

[5] Sporadic volcanic eruptions, most notably the 1814 eruption of Mount Mayon (near the modern city of Legazpi in Albay province in the Bicol region) occasionally devastated settlements. Miguel Saderra Maso, *Catalogue of Violent and Destructive Earthquakes in the Philippines* (Manila: Bureau of Printing, 1910), 11.
[6] Another earthquake in 1880 further damaged the city, as well as other settlements in Central Luzon. *Ibid,* 12.
[7] James Francis Warren, "Typhoons and the Inequalities of Philippine Society and History," *Philippine Studies,* Vol. 64, No. 3-4 (2016): 463-464.
[8] See *AFIO,* legajo 50, document 24 and *AFIO,* legajo 522, Documento 54.

eighteenth century continued in spite of the Bourbon Reforms. How hex-craft, *fiestas,* and administrative responses altered during that period is worth continued study.

## Of Hazards in the Philippines

What then, based on this study, can be said more generally of natural hazards in Luzon during the period from 1645 to 1754? First, it is clear that repeated natural hazards over time did act as a process and force adaptive change. Second, the adaptations implemented by various institutions and peoples were rational, given prevailing beliefs about natural hazards at the time. The soldiers who purchased hexes were acting rationally within their comprehension of the world, as were the priests who carried crosses to the tops of volcanoes and the administrators who begged the most Catholic monarch to intercede. All of these groups, when exposed to the constant threat of natural hazards, adapted their lifestyles to accommodate disruption and mitigate their effects. Thus hazards, acting as a process, forced change over time amongst individuals, communities, and institutions.

This dissertation also demonstrated how individual natural hazards contributed, over time, to ongoing economic, social, and cultural developments taking place in Luzon and Southeast Asia. For instance, the most physically destructive hazard of the seventeenth century, the San Andrés earthquake, accelerated an ongoing decline in economic prosperity, ultimately contributing to Spain's withdrawal from the Moluccas and its southern outposts. However, the event's full impact on the colony is only appreciable when it is considered in historical context. The other pressures and threats the colony faced in the mid-seventeenth century—the threat of Dutch invasion, the decline in the silver trade, and the threat of rebellion from *naturales* whose labor had been abused for nearly thirty years—augmented

the impact of the San Andrés Earthquake. Thus, disasters and entropic developments reciprocally influenced one another.

Furthermore, the dissertation demonstrated that highly disruptive events like the San Andrés Earthquake or the 1754 eruption of Mt. Taal acted in accord with a principle espoused by Anthony Oliver-Smith: "disasters disclose fundamental features of society and culture, laying bare crucial relationships and core values in the intensity of impact and the stress of recovery and reconstruction."[9] By studying responses to individual hazards, this dissertation illustrates how responses from the clergy and colonial administrators to crises complemented one another, and how their actions were guided by an understanding of calamity embedded in Catholic dogma. Furthermore, in its study of buildings the dissertation made apparent the priorities of the colony, its dedication both to commercial and military might through the construction of fortresses and vessels but also to its faith, through strenuous and prolonged efforts to rebuild Manila's Cathedral. All the while, the same disasters were being interpreted by the *naturales* and migrant laborers, whose responses could be in accord with—or act against—the colonial state, its literate elites, and its Catholic comprehension of disruption.

Every chapter of this dissertation therefore demonstrates the "crucial relationships" between seemingly disparate or disconnected groups, the components of colonial Luzon's society. One disaster in particular, the San Andrés Earthquake, links the wide-ranging chapters of this study together. It, and several less prominent disasters, offered a portrait in time—a snapshot—of colonial Luzon with all its institutional tensions, disagreements, and socio-economic divisions. And each disaster showed connections between peoples,

[9] Anthony Oliver-Smith, "Theorizing Disaster: Nature, Power, and Culture," in *Catastrophe and Culture: The Anthropology of Disaster,* ed. Susanna M. Hoffman and Anthony Oliver-Smith (Santa Fe, NM: School of American Research, 2002), 26.

institutions, buildings, and ideas that were not otherwise apparent. Thus, an assertion made in the introduction is validated: in a period where a clear developmental progression has not been identified, a history of disruption is illustrative and vital.

## Future Directions

There is more that can be explored in future studies concerning natural hazards and Luzon. First, this dissertation, by consequence of the available source material, focused most of its attention on Central and Southwestern Luzon rather than the provinces in the north (Cagayan) or the south (Bicol). Highland peoples, not to mention the Visayas and Mindanao, were not discussed. Studies focused on the impact of natural hazards within these provinces are needed.

Second, this dissertation did not explore the role Mexican beliefs played in shaping Philippine responses to natural hazards. Aside from the *creole* soldiers stationed in the colony, administrators and even some appointed members of the clergy came from Nueva España.[10] Furthermore, although most clergymen and administrators were educated in Spain, some gathered experience in the American colonies before being assigned to the Philippines. Therefore, distinguishing between Spanish and American influences in Luzon, including how administrators and clergymen responded to natural hazards, requires further research.

Lastly, this dissertation's listing of natural hazards that transpired in Luzon remains incomplete. As more sources are discovered or as other researchers gather documents not utilized by this dissertation, the list of impactful hazards will undoubtedly grow. However,

[10] Archbishop Poblete is one such example (see Chapter 2).

while those additions will supplement the findings of this dissertation, I remain confident they will not alter its conclusions. Individual events may lie outside of observed trends but cannot invalidate them.

## Conclusion

This dissertation began with a discussion of anthropogenic climate change and anxiety about catastrophe, arguing that colonial Luzon offered a valuable case study as a society facing severe and frequent natural hazards with which the state had no prior experience. Natural hazards impoverished Luzon and generated misery amongst its peoples, Yet the colonizers and colonized peoples persisted and adapted, successfully mitigating—though never eradicating—the peril of natural hazards. A similar pattern may emerge regarding anthropogenic climate change.

More inspiring for those who are living through the misery and severe hazards generated by a changing climate, though, was how a transition from a socio-ecological regime dominated by galleons to one dominated by cash-crops so rapidly altered vulnerabilities in the Philippines. That transition was inspired by reforms commanded by a distant colonial metropolis and was implemented suddenly. And, while that transition introduced new vulnerabilities, it also increased the resilience of the colony by lessening the importance of the Manila Galleons. The adaptability displayed by those affected and the potential for sudden change, the ability to redefine a major challenge—even one seemingly embedded in the environment—is encouraging. Solutions to the systemic challenges posed by anthropogenic climate change, while currently elusive, may yet present themselves unexpectedly and suddenly through human ingenuity.

# Appendix

## Impactful Fires, Storms, Earthquakes, and Eruptions in and around Luzon between 1645 and 1754.

| Date of Hazard | Type of Hazard | Location of Hazard | Description of Hazard and Effects | Reference[1] |
|---|---|---|---|---|
| Nov-30-1645 | Earthquake | Central Luzon | Total Destruction of *Intramuros* | Maso |
| Dec-4/5-1645 | Earthquake | Central Luzon/Dilao and Manila | Last aftershock of great earthquake | *AGI, Filipinas* 298, N. 15 |
| 1646 | Typhoon | Cagayan | Sank the galleon *San Luis,* which was bound for Manila from Acapulco | Warren |
| 1648 | Earthquake | Manila | Unknown/minor damage | *AGI, Filipinas* 77, N.67 |
| Oct-5-1649 | Typhoon | San Bernardino Strait | Sank the galleon Nuestra Señora de la Encarnación | Maso |
| April 1650 | Storm | Acapulco | Galleon Nuestra Señora de Guia nearly wrecked and most goods lost | Warren |
| 1651 | Storm | Manila | Galleon *San Diego* struck, returns to port | Warren |
| May-1-1653 | Earthquake | Manila | Minor damage done to city and surrounding pueblos | Maso |
| May-29-1654 | Typhoon | Central Luzon | Destroyed a galleon, according | Selga |

[1] The term Martinez represents: Domingo Martinéz, O.F.M., *Compendio Historico de la Apostolica Provincia de San Gregorio de Philipinas de Religiosos Menores Descalzos de N.P. San Francisco* by (Madrid: Imprenta de la Viuda de Manuel Fernandez, 1756).
The term García-Herrera references Ricardo García Herrera, Pedro Ribera, Emiliano Hernández, and Luis Gimeno, "Northwest Pacific typhoons documented by the Philippine Jesuits, 1566-1900," *Journal of Geophysical Research,* Vol. 112, Issue D6 (27 March, 2007): 3-4.
The term Warren references James Francis Warren, "Weather, History, and Empire: The Typhoon Factor and the Manila Galleon Trade, 1565-1815," in *Anthony Reid and the Study of the Southeast Asian Past,* ed. Geoff Wade and Li Tana (Singapore: Institute of Southeast Asian Studies, 2015).
The term Selga references Miguel Selga, S.J., *Catalogue of Typhoons, 1348-1934* (Manila: Manila Weather Bureau, 1935).
The term Maso refers to Miguel Saderra Maso, *La seismología en Filipinas* (Manila: Ramirez, 1895).

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|---|---|---|---|---|
| | | | to the testimony of survivor Juan Montiel, S.J. | |
| 19-Oct-1655 | Storm | Borongan | A galleon, *San Francisco Xavier,* lost at sea while sailing from Acapulco | Warren |
| Aug-20-1658 | Earthquake | Central Luzon | Powerful earthquake in Manila that is compared to 1645 earthquake. Destroyed buildings damaged by 1645 earthquake | Maso, Martinez |
| 1664 | Tyhpoon | Nueva Cáceres | A typhoon destroyed the Hospital of St. Lazarus in the chief city of southern Luzon and did considerable damage to pueblos | Selga, Martinez |
| 1664 | Earthquake | Manila | Destroyed the monastery of Santa Clara | Martinez |
| 1666 | Storm | Manila | Two ships return to Manila, do not make the voyage to Acapulco | Warren |
| 1669 | Storm | Cavite and Lampon | *Nuestra Señora del Buen Socorro* and the *San Diego* both turned back by storms upon departure | Warren |
| 1672 | Typhoon | Manila | *San Telmo* turns back from voyage, returns to Manila | Warren |
| 1676 | Earthquake | Manila | Considerable damage done to the Hospital San Juan de Dios | *AGI, Filipinas* 179, N.21 and *AGI, Filipinas* 12, R.1, N.16 |
| Dec-17-1677 | Earthquake | Manila | Damage done to Audiencia, Governor's House, Royal Prisons, and Royal Hospital, as | *AGI, Filipinas* 23, R.17, N.53 and *AGI, Filipinas* 331, L.7, 328R-329R |

| | | | | |
|---|---|---|---|---|
| | | | well as other buildings | |
| 1681 | Typhoon | Manila | *Santa Rosa* forced to turn back to port | Warren |
| 1682 | Typhoon | Manila | *Santa Rosa* again forced to turn back after encountering fierce and damaging storms | Warren |
| 1685 (May-August) | Typhoon | South China Sea | A portuguese ship is caught in a six day storm, being rerouted from Macau to Manila | *AGI, Filipinas* 13, R.1, N.1 |
| Sept-26th-1687 | Typhoon | North of Luzon, Bashi Channel | English Privateer William Dampier and his ship are struck by a typhoon | Selga |
| 1687 | Typhoon | Manila | *Santo Nino* returns to port in Bagatoa for typhoon season before returning to Manila with its cargo half-rotten | Warren |
| 1688 (sometimes dated as 1687) | Earthquake | Cavite | Greatly damaged the Castillo de San Felipe | *AGI, Filipinas* 122, N. 17 and *AGI, Filipinas* 14, R.2, N.16 |
| 1690 | ? | Marianas | *Nuestra Señora del Pilar* sinks near Marianas while bound for Manila from Acapulco. Crew and some cargo saved | Warren |
| 1692 | Typhoon | San Bernardino Strait | *Santo Cristo de Burgos* put back to Sorsogon (in Nueva Caceres) after experiencing storms | Warren |
| 1693 | Unknown/Storm | ? | Galleon Santo Cristo de Burgos lost on route to Acapulco | *AGI Filipinas* 122, N.13 |
| 1693 | Unknown/Storm | ? | Galleon Santo Cristo de Burgos lost on route to Acapulco | *AGI, Filipinas* 122, N.13 |

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|---|---|---|---|---|
| 1694 | Storm/Typhoon | South China Sea | A Japanese ship arrives in the Philippines, guided by an apparition of the Virgen after being waylaid by a storm | *AGI, Filipinas* 193, N.27 |
| July-3rd-1694 | Storm | Lubang/Lubanan | The galleon San Joseph [sic] is shipwrecked | *AGI, Filipinas* 122, N.13, Garcia-Herrerra, and Selga |
| 1700 | Typhoon | Southern Luzon | Destroyed the church in Bula, Camarines | Selga |
| Oct-25-1700 | Storm/Typhoon | Northwest Luzon | The galleon San Francisco Xavier nearly sank, lost its mass, and lost most of its cargo | *AGI, Filipinas* 124, N.21 |
| 1705 | Storm/Typhoon | ? | Loss of the galleon San Francisco Xavier | *AGI, Filipinas* 129, N.39 |
| 1705 | Volcano | Taal | Mt. Taal tremors for three weeks before erupting, causing considerable damage | *AGN, FILIPINAS, legajo* 884, Expolio 1 |
| 1716 | Volcano | Taal | Mt. Taal tremors for a week, kills many fish in its lagoon. The earthquakes were felt in Manila | *AGN, FILIPINAS, legajo* 884, Expolio 1 |
| 23-July-1726 | Typhoon | Ticao Island | Galleon *Santo Cristo de Burgos* sinks in typhoon | Warren |
| Nov-28-1728 | Earthquake | Manila | Intense earthquake recorded in Manila, which did extensive damage to several buildings | Maso |
| 9-November-1730 | Typhoon | Mindoro | Galleon *Sacra Familia* sank during voyage from Acapulco to Manila | Warren |
| 1731 | Volcano | Taal | After a week of shaking, a new island forms between Mt. Taal | *AGN, FILIPINAS, legajo* 884, Expolio 1 |

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| | | | and Mt. Macalot in the lagoon | |
| Jun-18-1733 | Fire | Manila | Royal Storehouses and most of their contents burn down due to a fire (likely started by accident in the kitchens) | FILIPINAS,334, L.15,F.348R-350R FILIPINAS, 145,N.8 |
| 29-June-1735 | ? | San Bernardino Strait | Galleon *San Cristobal* lost while bound for Manila from Acapulco | Warren |
| Nov-1-1742 | Typhoon | Manila | Stripped the rooftops off several, if not most, buildings in Manila | Garcia-Herrera |
| Feb-9-1746 | Fire | Manila/Central Luzon | Fire in the gunpowder house causes a massive explosion, imperils the colony's supply of a vital resource | *AGI, Filipinas* 454, N.8 |
| 1749 | Volcano | Taal | A new *polo* or mount forms within Mt. Taal after intense activity. The earthquakes were felt in Manila and its surrounding towns | *AGN, FILIPINAS, legajo* 884, Expolio 1 |
| 1750 | Poor weather | ? | Galleon *Nuestra Señora del Pilar* experiences rough conditions upon departure from Manila; fate of the vessel unknown. | Warren |
| 1754 | Volcano | Taal | Mt. Taal undergoes its largest recorded eruption, destroying several *pueblos* at the mountain's base over six months of intense volcanic activity. The earthquakes and | *AGN, FILIPINAS, legajo* 884, Expolio 1 |

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| | | | ash were experienced in Manila as well. | |

# Glossary

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| *Alcalde-mayor* | Chief magistrate to an administrative region within the Philippine colony (all *alcades-mayores* mentioned in this dissertation were European). |
| *Audiencia* | The highest judicial body in the Philippine Colony. It officiated civil cases, held authority over civil servants and appointments not directed by the Crown, and could temporarily assume jurisdiction over the military in the case the Governor-General was incapacitated. |
| *Baguio* | An indigenous word for cyclonic storms from the Pacific Ocean (typhoons). |
| *Barangay* | A native kinship group of approximately forty families that was repurposed by the Spanish to organize and administer colonized peoples. |
| *Braza* | A Spanish imperial unit of measurement. It corresponds to the length of a man's outstretched arms (1.67 meters). |
| *Cabildo Eclesiástico* | Church Council, responsible for administering the clergy within the Archdiocese of Manila. |
| *Cabildo Secular* | The city council. In this dissertation, the only *cabildo secular* referenced is the city council of Manila. |

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| *Cámara (de Indias)* | Literally chamber. A high council within the *Consejo de Indias.* The institution was repeatedly disbanded and recreated based on the preference of various Spanish monarchs. |
| *Castellano* | A castellan, in charge of administering a *castillo*. |
| *Castillo* | Literally castle. In the Philippines, Castillo was used to refer to the two largest fortresses in the colony (Santiago and Felipe). |
| *Cedula* | A royal command. |
| *Comisario* | Commissar, an investigator of the Spanish Inquisition. |
| *Consejo de Indias* | The Council of the Indies. A royal council meant to advise the King in all matters pertaining to the Spanish colonies. |
| *Consulta* | A query or consultation. In this dissertation, *consultas* were inquiries into the status of buildings. |
| *Contaduría* | Accounting House (or Treasury in contemporary English). |
| *Datu* | A pre-contact indigenous word for chieftain. |
| *Fiscal* | A prosecutor, or attorney for the Crown whose duties included management of spending and Crown finances. |
| *Fortaleza* | A fortress. |
| Governor-General | Head of the colonial government and military in the Philippines. Appointed by the King. |
| *Indio Principal* | "Principal Indian," an indigenous figure whose authority was recognized by the Spanish colonial state. In the Philippines, they were responsible for collecting taxes. |
| *Hechicería* | Sorcery, which was performed by *hechiceros* (sorcerers). |

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| *Limosna* | Literally alms. In the colonial Philippines, it referred to an annual concession given to a religious institution by the Crown. |
| *Maestro de Campo* | A commander of a *tercio,* a Spanish military unit and a figure of high martial authority in the colony (second only to the Governor-General). |
| *Mar de Manila* | A term commonly employed in the *Contaduría* Records cited in Chapter 2 referring to the fleet of Manila. |
| *Memorial* | Document requesting a specific form of aid. |
| *Merced* | Literally a mercy or grace. In the colonial Philippines, it referred to an award or concession from the royal treasury given by the Crown. |
| *Oficiales Reales* | Literally Royal Officials. They were responsible for administering and monitoring the royal treasury. |
| *Oidor* | Literally listener. A member of the *Audiencia*. |
| *Palma* | A Spanish imperial unit of measurement. It corresponds to the width of a palm (in Iberia, the distance between an outstretched thumb and the little finger or approximately 22 centimeters). |
| *Peso* | Literally weight. Famously, the term normally refers to denomination of silver currency, a coin of a set weight. The coins were also referred to as a "Piece of Eight" since one *peso* was worth 8 Spanish *reales*. In *Contaduría* records and letters examined in this dissertation, a *peso* refers to a gold *peso,* which was worth 8 *tomines,* and each *tomín* was worth 12 *granos* (or 96 *granos* per *peso*). This gold *peso* was worth 1.65 silver *pesos.* |

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| *Pie* | A Spanish imperial unit of measurement. It is the approximate length of a foot (11 inches in the English Imperial system, or approximately 28 centimeters). |
| *Polo* | A labor tax imposed on indigenous peoples in the Philippines, requiring individuals work for 40 days each year on royal projects. |
| *Presidio* | A fortress (larger than a *fortaleza*). |
| *Provincial* | An elected director of a mendicant order (in the case of the Franciscans, a *provincial* served for three years). |
| *Pueblo* | A small town or village established under the Spanish colonial regime. |
| *Real Patronato* | Literally Royal Patronage. In the colonial Philippines, the term refers to the partnership between the Crown and the clergy which permitted the Spanish monarch to appoint religious officials within the colonies in exchange for funding and supporting religious missions. |
| *Reconocimiento* | Recognition, reconnaissance, or survey. In this dissertation, *reconocimiento* exclusively refers to detailed examinations of buildings. |
| *Regular* | An ecclesiast, a member of the regular clergy. |
| *Repartimiento* | A tribute-tax owed by residents of an *encomienda* to that land's appointed owner, similar to taxes imposed on peasants in Feudal Europe. |

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| *Secular* | A member of the secular clergy (an appointed official such as an Archbishop in the Philippines). |
| *Traslado* | A copy of written testimony. For the Philippines, three copies of all official correspondence were made. One stayed in Manila, one was sent to Mexico, and a third was sent to Spain. |
| *Vandala* | A forced-sales tax imposed on indigenous peoples in the Philippines. A set amount of agricultural produce had to be sold to the colonial government each year. |

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