

Introduction

The world is growing more hazardous. Natural disasters are increasing in frequency and severity, spurred in part by changes associated with a warming planet. In their 2020 joint report, the United Nations Office for Disaster Risk Reduction and the Centre for Research on the Epidemiology of Disasters found that the number of natural disasters rose precipitously since the 1980s, with each year bringing new human and economic losses.¹ Disasters affected 94.9 million people in 2019 alone, and 2020 brought a steady stream of record-breaking calamities, including super typhoons in Southeast Asia, historic wildfires in Australia and across the American West, locust swarms in East Africa and the Middle East, and a record-breaking Atlantic hurricane season. COVID-19 emerged as a global public-health emergency, which compounded the impacts of these and many other disasters.² The deadly

¹ CRED and UNDRR, *Human Cost of Disasters: An Overview of the Last 20 Years, 2000–2019*. <https://cred.be/sites/default/files/CRED-Disaster-Report-Human-Cost2000–2019.pdf>. These numbers may reflect, in part, better recording and reporting, and also the influence of climate change.

² CRED, *Natural Disasters 2019* (Brussels: CRED, 2020). Regine Cabato and Jason Samenow, “Super Typhoon Goni, World’s Most Powerful Storm in Four Years, Smashes into the Philippines,” *Washington Post*, November 1, 2020. Alexander I. Filkov, Tuan Ngo, Stuart Matthews et al. “Impact of Australia’s Catastrophic 2019/20 Bushfire Season on Communities and Environment. Retrospective Analysis and Current Trends,” *Journal of Safety Science and Resilience* 1, no. 1 (2020): 44–56. P. E. Higuera and J. T. Abatzoglou, “Record-Setting Climate Enabled the Extraordinary 2020 Fire Season in the Western United States,” *Global Change Biology* 27 (2021): 1–2. Food and Agriculture Administration of the United Nations, “FAO Makes Gains in the Fight against Desert Locusts in East Africa and Yemen but Threat of a Food Security Crisis Remains,” *FAO News*, November 5, 2020, www.fao.org/emergencies/fao-in-action/stor

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consequences of the pandemic continue as of this writing. The burdens of catastrophes were and are endured unevenly around the world, often mirroring its inequalities, yet no region completely escaped their impacts. In the United States, the risk of hurricanes, wildfires, river floods, and droughts have intensified in recent decades, and the most recent US Climate Assessment warns of greater hazards in the future.³ A dawning sense of urgency in the face of dramatic and accelerating socioeconomic and environmental change has produced a global clarion call for improved understanding of the roots, consequences, and response to disasters.

History informs this ambition. The past contains an archive of innumerable disaster experiences. Since its emergence in the 1980s, historical disaster studies have developed a variety of innovative strategies to utilize this information.⁴ Historical analyses reveal trends in the frequency and severity of disasters, which provide baselines to assess the pace and scale of environmental and social change. History also serves as a laboratory to enrich our understanding of core concepts in disaster theory, such as the environmental and social construction of vulnerability, resilience, and adaptation.⁵ More recently, historians have emphasized the importance of disaster perception. Disasters were complex, value-laden moments of profound dislocation that nevertheless remained moored to previous experience, cultural memory, and history. Past societies filtered their interpretation and response to calamity through these lenses, just as they do today. As a result, historical disaster scholarship is now a truly interdisciplinary endeavor, drawing insights from the social and physical sciences, memory studies and folklore, religious studies, as well as

ies/stories-detail/en/c/1275091/. Jeff Masters, "A Look Back at the Horrific 2020 Atlantic Hurricane Season," *Yale Climate Connections*, December 1, 2020, <https://yaleclimateconnections.org/2020/12/a-look-back-at-the-horrific-2020-atlantic-hurricane-center/>. Carly A. Phillips, Astrid Caldas, Rachel Cleetus et al., "Compound Climate Risks in the COVID-19 Pandemic," *Nature Climate Change* 10 (2020): 586–8.

³ D. R. Reidmiller, C. W. Avery, and D. R. Easterling, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* (Washington, DC: U.S. Global Change Research Program, 2018).

⁴ Gerrit Jasper Schenk, "Historical Disaster Research. State of Research, Concepts, Methods and Case Studies," *Historical Social Research/Historische Sozialforschung* 32, no. 3 (2007): 10.

⁵ Bas van Bavel, Daniel Curtis, Jessica Dijkman et al., *Disasters and History: The Vulnerability and Resilience of Past Societies* (Cambridge: Cambridge University Press, 2020). Greg Bankoff, "Comparing Vulnerabilities: Toward Charting an Historical Trajectory of Disasters," *Historical Social Research* 3, no. 32 (2007): 103–14.

material and visual culture.⁶ Collectively, this work captures a richly variegated image of calamity's geophysical and human character. These stories enrich our understanding of the past and offer significant insights for the present.

Natural disasters are unique and powerful tools to evaluate historical change. They often result in an outpouring of documentation, whether from state and private institutions, news media and artists, or the personal accounts of the victims themselves. Historians have at their disposal a diverse array of sources that afford a uniquely high-resolution image of environments, cultures, and societies not otherwise available. This information can be mustered to evaluate the transformative power of disasters in history. The contingent nature of calamity resists any uniform characterization, however. Coastal and river floods may unearth buried social conflicts, but they might also engender solidarity. Epidemics may catalyze new medical treatments or state management efforts, but they might also entrench established strategies. Species introductions may pass unremarked, or they might motivate dramatic, even violent social or cultural, reaction. Context is critical. By unraveling the tangled strands of evidence that explain these divergent responses, historians enrich our understanding of environments in flux and communities in crisis.

Natural disasters also shed light on broader historical changes often deemed unconnected to calamity. Much of this research has focused on the modern era, but scholars are increasingly setting their sights on earlier periods. In early-modern Europe alone, research on disasters has contributed new interpretations of the emergence of witchcraft trials, the rise of Enlightened absolutism, and evolving interpretations of humanity's relationship with nature.⁷ Disasters can be "totalizing" experiences, affecting

⁶ Fred Krüger, Greg Bankoff, Benedikt Orłowski, and Terry Cannon, eds., *Cultures and Disasters: Understanding Cultural Framings in Disaster Risk Reduction* (New York: Routledge, 2014). Rasmus Dahlberg, Olivier Rubin, and Morten Thanning Vendelø, eds., *Disaster Research: Multidisciplinary and International Perspectives* (London: Routledge, 2016). Bernd Rieken, "Nordsee ist Mordsee": *Sturmfluten und ihre Bedeutung für die Mentalitätsgeschichte der Friesen* (Münster: Waxmann Verlag, 2005). Marco Folin and Monica Preti, *Wounded Cities: The Representation of Urban Disasters in European Art (14th–20th Centuries)* (Leiden: Brill, 2015). Monica Juneja and Gerrit Jasper Schenk, eds., *Disaster as Image: Iconographies and Media Strategies Across Europe and Asia* (Regensburg: Verlag Schnell & Steiner, 2014).

⁷ Wolfgang Behringer, "Climatic Change and Witch-Hunting: The Impact of the Little Ice Age on Mentalities," *Climatic Change* 43, no. 1 (1999): 335–51. Behringer's thesis remains contested. Fredrik Charpentier Ljungqvist, Andrea Seim, and Heli Huhtamaa, "Climate and Society in European History," *Wiley Interdisciplinary Reviews: Climate Change* 12, no. 2 (2021): e691. Timothy D. Walker, "Enlightened Absolutism and the

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all aspects of social structure and its relations to the environment.⁸ Disasters, thus, offer scholars remarkable opportunities to open new inroads into well-trodden historical themes. Using disasters as a lens to explore broader social, cultural, and environmental change has become a hallmark of historical disaster research.

This book explores the historical experience of calamities to better understand their origins and meaning, just as it uses disasters to interpret an important historical transition – the decline of the Dutch Republic.⁹ Between the last decades of the seventeenth century and the first half of the next, the Dutch Republic experienced a series of dramatic, destructive, and interconnected disasters. At the same time, the Dutch reckoned with the growing realization that their Golden Age of prosperity, security, and virtue was waning. Disasters and decline were connected, and this book explores their relationship. The Dutch had spent centuries developing social, economic, and technological systems to manage and exploit their dynamic rivers, coastlines, and landscapes. By the eighteenth century, each were changing in important ways. The disasters of the early eighteenth century were products of these transformations. Dutch perception and response to natural disasters also changed as the limits of their control grew increasingly defined. These responses, I argue, reinforced, transformed, and challenged Dutch interpretations of decline.

These twin approaches in disaster history – the one focusing on disasters as subjects, the other using disasters as tools to evaluate perceptions of social and environmental change – rarely intersect. To bridge these approaches, this book turns to environmental history. Many early, now classic studies reshaped our understanding of disasters in history, from

Lisbon Earthquake: Asserting State Dominance over Religious Sites and the Church in Eighteenth-Century Portugal,” *Eighteenth-Century Studies* 48, no. 3 (2015): 307–28. Cindy Ermus, “The Spanish Plague that Never Was: Crisis and Exploitation in Cádiz during the Peste of Provence,” *Eighteenth-Century Studies* 49, no. 2 (2016): 167–93. Michael Kempe, “Noah’s Flood: The Genesis Story and Natural Disasters in Early Modern Times,” *Environment and History* 9, no. 2 (2003): 151–71. Alessa Johns, ed., *Dreadful Visitations: Confronting Natural Catastrophe in the Age of Enlightenment* (New York: Routledge, 1999).

⁸ Anthony Oliver-Smith, “‘What Is a Disaster?’: Anthropological Perspectives on a Persistent Question,” in *The Angry Earth: Disaster in Anthropological Perspective*, eds. Anthony Oliver-Smith and Susanna Hoffman (London: Routledge, 1999), 20.

⁹ Contemporaries referred to the Dutch Republic by several names, including the “Republic,” “the Netherlands,” and “the United Provinces.” This book retains those conventions.

the Columbian encounter to the Dust Bowl.¹⁰ The contributions of the field to historical disaster scholarship have only deepened in recent decades. The depth and consistency of engagement result from their close correspondence. Core themes in historical disaster scholarship parallel the central preoccupations of environmental history, whether reconstructing past social and physical environments, interrogating the social and economic systems that reorganized those environments, or exploring the ways that perception, ideas, and values informed those relationships.¹¹ Their cross-pollination has proved mutually beneficial as both fields have grown and matured.

They are also different in key ways. “Natural disasters” are increasingly understood to be social phenomena that reflect the characteristics of societies more than physical environmental shocks.¹² This explains why natural hazards often produce wildly uneven consequences for affected communities. Foregrounding unequal conditions of risk and opportunity revolutionized our understanding of disasters by re-centering attention on the social conditions that produce, exacerbate, and mitigate calamity. Perhaps as a result, however, “nature” is often a less-than-dynamic feature of disaster scholarship. Environmental history offers a hybrid approach that counterbalances this tendency.¹³ Environmental histories of flooding, for instance, have explored the relationships between environmental phenomena, such as recurrent extreme events and long-term patterns in climate or coastal erosion, but also social conditions, including land ownership and settlement, industrial transformation of coasts or riverscapes, and civic or religious interpretations of environmental

¹⁰ Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Greenwood Publishing Group, 1972). Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (Oxford: Oxford University Press, 1979). Christof Mauch, “Introduction,” in *Natural Disasters, Cultural Responses: Case Studies toward a Global Environmental History*, eds. Christof Mauch and Christian Pfister (New York: Lexington Books, 2009), 5–6.

¹¹ Donald Worster, “Transformations of the Earth: Toward an Agroecological Perspective in History,” *The Journal of American History* 76, no. 4 (1990): 1087–106.

¹² Kenneth Hewitt, “The Idea of Calamity in a Technocratic Age,” in *Interpretations of Calamity: From the Viewpoint of Human Ecology*, ed. Kenneth Hewitt (Boston: Allen & Unwin, 1983), 25. Terry Cannon, “Vulnerability Analysis and the Explanation of ‘Natural Disasters,’” in *Disasters, Development and Environment*, ed. Ann Varley (Chichester: John Wiley and Sons, 1994), 13–30.

¹³ Paul S. Sutter, “The World with Us: The State of American Environmental History,” *Journal of American History* 100, no. 1 (2013): 94–119.

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change.¹⁴ Natural disasters emerged from these mutually reinforcing social and environmental changes and often influenced them in turn. The implications of this approach beyond the history of disaster are equally wide reaching. Environmental history cut its teeth reinterpreting historical causation and rewriting familiar historical narratives. Environmental histories of disaster present the same opportunities.

I.1 DISASTER AND THE INTERPRETATION OF HISTORY

The decline of the Dutch Republic is an historical narrative ripe for reinterpretation. Dutch decline in the eighteenth century was measured against its Golden Age, a period that roughly spanned the previous century. The Netherlands during the seventeenth century had been a vibrant center of global trade, a hub of empire, and the entrepôt of Europe.¹⁵ It was during the Golden Age that the Dutch birthed the West (WIC) and East India Trading Companies (VOC), and Amsterdam emerged as a nexus for the exchange of information, goods, and capital and nurtured what some scholars consider the first “modern economy.”¹⁶ Dutch society was oligarchic, pluralistic, and strongly

¹⁴ Greg Bankoff, “Constructing Vulnerability: The Historical, Natural and Social Generation of Flooding in Metropolitan Manila,” *Disasters* 27, no. 3 (2003): 224–38. Tim Soens, “Flood Security in the Medieval and Early Modern North Sea Area: A Question of Entitlement?,” *Environment and History* 19, no. 2 (2013): 209–32. Stéphane Castonguay, “The Production of Flood as Natural Catastrophe: Extreme Events and the Construction of Vulnerability in the Drainage Basin of the St. Francis River (Quebec), Mid-Nineteenth to Mid-Twentieth Century,” *Environmental History* 12, no. 4 (2007): 820–44. John Emrys Morgan, “Understanding Flooding in Early Modern England,” *Journal of Historical Geography* 50 (2015): 37–50. Grace Karskens, “Floods and Flood-Mindedness in Early Colonial Australia,” *Environmental History* 21, no. 2 (2016): 315–42. James A. Galloway, “Coastal Flooding and Socioeconomic Change in Eastern England in the Later Middle Ages,” *Environment and History* 19, no. 2 (2013): 173–207. Piet van Cruyningen, “Sharing the Cost of Dike Maintenance in the South-Western Netherlands: Comparing ‘Calamitous Polders’ in Three ‘States,’ 1715–1795,” *Environment and History* 23, no. 3 (2017): 363–83.

¹⁵ David Onnekink and Gijs Rommelse, *The Dutch in the Early Modern World: A History of a Global Power* (Cambridge: Cambridge University Press, 2019).

¹⁶ Oscar Gelderblom, Abe De Jong, and Joost Jonker, “The Formative Years of the Modern Corporation: The Dutch East India Company VOC, 1602–1623,” *The Journal of Economic History* 73, no. 4 (2013): 1050–76. Clé Lesger, *The Rise of the Amsterdam Market and Information Exchange: Merchants, Commercial Expansion and Change in the Spatial Economy of the Low Countries, c. 1550–1630* (Surrey: Ashgate, 2006). Jan de Vries and Ad van der Woude, *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500–1815* (Cambridge: Cambridge University Press, 1997).

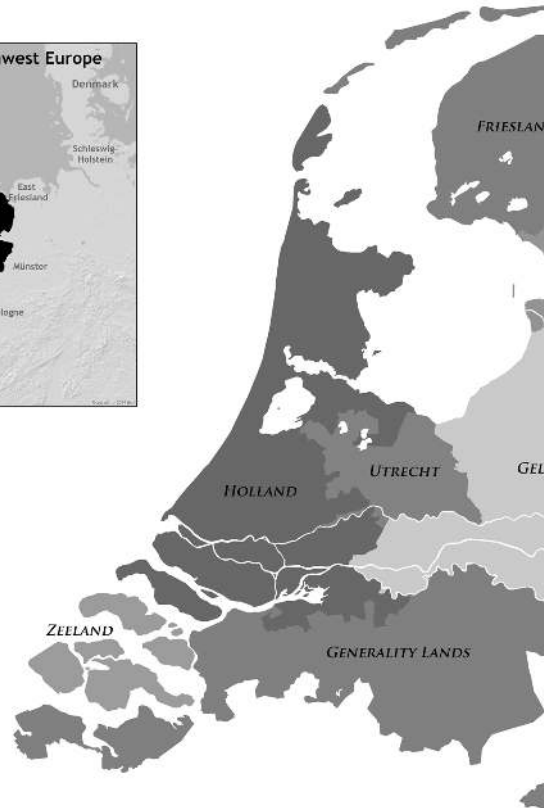
divided in politics and religion, but it nevertheless nurtured luminaries in European art, science, and philosophy. This was the era of Rembrandt and Vermeer, Van Leeuwenhoek and Huygens, Spinoza and the renowned printing culture that fostered Descartes, Bayle, and Locke. The Republic, whose borders largely correspond to the modern Netherlands, was a unique and powerful geopolitical entity in the early-modern world. In an age of state centralization, the Republic was less a single country than a union of seven largely sovereign provinces. Each exhibited stark differences in urbanization, economic development, and political interest (with Holland by far the wealthiest, most populous, and powerful), yet the Dutch Republic proved remarkably stable and adept at exerting its influence in Europe and around the globe¹⁷ (Figure I.1).

The very existence of the Republic was perhaps its greatest and most surprising accomplishment. After defeating the Spanish Empire in an eighty-year-long revolt, this loose confederacy of provinces, born of necessity, bordered by superior military rivals and seemingly at odds with its own amphibious geography, remained a dominant European power for over a century. In an era defined by the adverse climatic conditions of the Little Ice Age and a “seventeenth-century crisis” that featured widespread conflict, economic dislocation, demographic stagnation, and political instability across much of Europe and the globe, the Dutch appeared the great European exception.¹⁸ Indeed, Dutch success was both perplexing and enviable to their neighbors. “There grows nothing in Holland,” one anonymous observer declared, “yet there is the wealth of the

¹⁷ Maarten Prak, *The Dutch Republic in the Seventeenth Century: The Golden Age* (New York: Cambridge University Press, 2005). Oscar Gelderblom, ed., *The Political Economy of the Dutch Republic* (Surrey: Ashgate, 2016).

¹⁸ Jan de Vries, *The Economy of Europe in an Age of Crisis, 1600–1750* (Cambridge: Cambridge University Press, 1976), 1–29. Niels Steensgaard, “The Seventeenth-Century Crisis,” in *The General Crisis of the Seventeenth Century*, eds. Geoffrey and Lesley M. Smith Parker (London: Routledge, 1985), 26–56. Dagomar Degroot, *The Frigid Golden Age: Climate Change, The Little Ice Age, and the Dutch Republic, 1560–1720* (Cambridge: Cambridge University Press, 2018). Ivo Schöffer, “Did Holland’s Golden Age Coincide with a Period of Crisis?,” in *The General Crisis of the Seventeenth Century*, eds. Geoffrey and Lesley M. Smith Parker (London: Routledge, 1985), 83–109. The extra-European implications of this phenomenon have been explored in Geoffrey Parker, *Global Crisis: War, Climate Change and Catastrophe in the Seventeenth Century* (New Haven, CT: Yale University Press, 2013). Sam White, *A Cold Welcome: The Little Ice Age and Europe’s Encounter with North America* (Cambridge: Harvard University Press, 2017). Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire* (Cambridge: Cambridge University Press, 2011).

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FIGURE 1.1 The United Provinces of the Netherlands in 1710. The Dutch Republic consisted of Holland, Zeeland, Utrecht, and Gelderland. The Estates General controlled several additional provinces: Groningen, Overijssel, and Friesland. Provincial boundaries adapted from Dr. O. W. A. Boonstra (2007). NLGis shapefiles. DANSHOLAND 1677.

world.”¹⁹ The country had flourished amidst social, religious, political, and environmental upheaval, which made its reversal of fortune all the more striking.

By the dawn of the eighteenth century, the Dutch Golden Age of wealth, power, and prestige appeared to be waning. The Republic remained among the wealthiest states in Europe, but core sectors of its economy experienced relative, if not absolute, decline. Between 1650 and 1750, Dutch agriculture endured a prolonged recession, the Dutch herding fishery collapsed, and industry and urbanization flatlined. Dutch primacy in overseas trade likewise diminished. After 1713, the Dutch no longer ranked in the top tier of geopolitical powers in Europe. By the last decades of the eighteenth century, contemporaries in the Republic and abroad widely described Dutch decline in universalizing language. In the words of eminent political historian E. H. Kossmann, decline “was thought to be total, on all levels, in all human endeavor – moral, economic, social, cultural, political.”²⁰ This characterization remains influential today.

The origins and meaning of Dutch decline have provoked sustained debate since the eighteenth century.²¹ Its enduring appeal as an historical question speaks to the complexity and significance of the subject. Some contemporaries pointed to the decay of Dutch morality and civic virtue. Others highlighted mercantilist trade policies, an inefficient tax system overwhelmed by foreign wars, or a general conservatism born of past prosperity. Nineteenth-century historians wrote disparagingly of the previous century’s decadence and stagnation and termed the era the Periwig Period (*Pruikentijd*).²² Named after the French fashion of wearing powdered wigs, it evoked an atmosphere of indulgent malaise. Historians employed the term well into the twentieth century. No less a figure than cultural historian Johan Huizinga still described the “collapse

¹⁹ *The Dutch Drawn to Life* (London: Tho. Johnson and H. Marsh, 1664), introduction.

²⁰ E. H. Kossmann, “The Dutch Republic in the Eighteenth Century,” in *The Dutch Republic in the Eighteenth Century: Decline, Enlightenment, and Revolution*, eds. Margaret C. Jacob and Wijnand W. Mijnhardt (Ithaca, NY: Cornell University Press, 1992), 28.

²¹ Modern interest in decline was stimulated by Johannes de Vries, *De economische achteruitgang der Republiek in de achttiende eeuw* (Leiden: Stenfert Kroese, 1968). De Vries’s arguments find some earlier grounding in J. G. Van Dillen, “Omstandigheden en psychische factoren in de economische geschiedenis van Nederland,” in *Mensen en achtergronden*, ed. J. G. Van Dillen (Groningen: J. B. Wolters, 1964), 53–79.

²² Wyger R. E. Velema, *Republicans: Essays on Eighteenth-Century Dutch Political Thought* (Leiden: Brill, 2007).

of Dutch culture in the eighteenth century” in 1941. With more than a touch of irony, Huizinga termed the eighteenth century the true “golden age” because “wood and steel, pitch and tar, colour and ink, pluck and piety, fire and imagination” more aptly described the dynamism of the seventeenth century.²³

Recent interpretations of decline vary, and explanations range from geopolitical competition and protectionism to structural changes in the socioeconomic fabric of Dutch society. Most economic historians maintain nuanced positions that contrast with earlier historians’ breathless proclamations of universal, national decay. The trajectory of decline varied over time and manifested differently by region, city, and sector of the economy. The deurbanization of densely populated parts of coastal Holland, for instance, was among the most dramatic consequences of this change. Leiden, formerly a center of textile production with 70,000 inhabitants in the last quarter of the seventeenth century, dropped to half that number by the third quarter of the eighteenth. Other areas of the Republic, especially its more thinly populated rural regions, experienced less of this economic and social tumult. Even in the aggregate, the Dutch Republic remained perhaps the wealthiest country in Europe with per-capita incomes well in excess of its rivals. The Republic certainly experienced a loss in geopolitical stature and economic power, but that decline was most apparent when compared to the growing influence of competitors such as England and France.²⁴

²³ Johan H. Huizinga, *Dutch Civilisation in the Seventeenth Century: And Other Essays* (New York: Harper & Row, 1969), 100, 104.

²⁴ Herman Diedriks, “Economic Decline and the Urban Elite in Eighteenth-Century Dutch Towns: A Review Essay,” *Urban History Yearbook* 16 (1989): 78–81. De Vries and Van der Woude, *First Modern*, 52–5. Jonathan Israel, *The Dutch Republic: Its Rise, Greatness, and Fall, 1477–1806* (New York: Oxford University Press, 1995), 1007. J. L. van Zanden, “De economie van Holland in de periode 1650–1805: Groei of achteruitgang? Een overzicht van bronnen, problemen en resultaten,” *BMGN: Low Countries Historical Review* 102, no.4 (1987): 562–609. J. C. Riley, “The Dutch Economy after 1650: Decline or Growth?,” *Journal of European Economic History* 13 (1984): 521–69. Jan de Vries, “The Decline and Rise of the Dutch Economy, 1675–1900,” in *Technique, Spirit, and Form in the Making of the Modern Economies: Essays in Honor of William N. Parker*, eds. Gary R. Saxonhouse and Gavin Wright (London: JAI Press, 1984), 149–89. Jonathan Israel, *Dutch Primacy in World Trade, 1585–1740* (New York: Oxford University Press, 1989), 392. Maarten Prak and J. L. van Zanden, *Nederland en het poldermodel: Sociaal-economische geschiedenis van Nederland, 1000–2000* (Amsterdam: Bert Bakker, 2013), 165. Patrick O’Brien, “Mercantilism and Imperialism in the Rise and Decline of the Dutch and British Economies, 1585–1815,” *De Economist* 148, no. 4 (2000): 469–501. W. Frijhoff, J. Kloek, and M. Spies, *Dutch Culture in a European Perspective: 1800, Blueprints for*