
States Make War But Wars Also Break States¹



Geoffrey Parker

Abstract

An unprecedented spate of wars and revolutions took place around the world in the mid-seventeenth century. Many contemporaries, followed by many historians, have argued that the former caused the latter; few have considered other factors. This essay seeks to clarify the issues at the heart of the “General Crisis Debate” among early modern historians by examining evidence from around the world, including newly available data on global climatic change. It concludes, first, that only a synergy between natural and man-made disasters produced state-breakdown; and, second, that “coping skills” critically affected the impact of these disasters.

To ensure that Franklin Roosevelt never forgot the human costs of the Second World War, General George C. Marshall “saw to it that the President was reminded weekly of casualties, with the losses listed in vivid colors. It was essential,” Marshall later declared, “to remember the sacrifices. Because it is easy to get hardened to them.” The General also took more personal steps “to remember

1. I thank Alice Conklin, Kate Epstein, and Leif Torkelsen for help in formulating the argument of my Marshall Lecture, delivered at the Society for Military History/American Historical Association Annual Meeting in Atlanta, Georgia, on 6 January 2007. I also thank them, as well as Bruce Vandervort, Albert J. Beveridge III (former CEO of the George C. Marshall Foundation) and Mrs. Beveridge, and the late Larry Bland, for advice on preparing my lecture for publication. Taguchi Kojiro and Matthew Keith provided vital help with Chinese and Japanese sources. Most of the data deployed in this essay comes from my study *The Global Crisis: Climate, War and Collapse in the Seventeenth-Century World* (New Haven, Conn., and London: Yale University Press, 2010).

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the sacrifices.” In 1944 he made a pilgrimage to a “field of 7,000 graves” near the Anzio beachhead to find the body of his stepson, Lieutenant Allen Brown. Marshall then tracked down survivors of the young man’s unit so that he could “identify the scene of Allen’s last action” and also managed to fly over the exact spot where his stepson had perished three weeks before.² A decade later, upon receiving the Nobel Peace Prize, General Marshall returned to the theme of casualties.

I know a great deal of the horrors and tragedies of war. Today, as chairman of the American Battle Monuments Commission, it is my duty to supervise the construction and maintenance of military cemeteries in many countries overseas, particularly in Western Europe. The cost of war in human lives is constantly spread before me, written neatly in many ledgers whose columns are gravestones . . . Almost daily I hear from the wives, or mothers, or families of the fallen. The tragedy of the aftermath is almost constantly before me.³

General Marshall believed firmly in the importance of military history, especially when written by those who “know a great deal of the horrors and tragedies of war.” I share his conviction: the military historians whom I most admire are almost all veterans. Major Michael Howard was twice wounded and won the Military Cross in Italy before writing the books and articles that have made him the Dean of our Guild.⁴ Colonel John F. Guilmartin, who won a Silver Star with one oak leaf cluster in Vietnam, completed his Princeton Ph.D. in between two tours of combat duty in Vietnam and, after the second, published *Gunpowder and Galleys*, an early masterpiece of “the new military history.”⁵ Regimental Sergeant Major Robert Rush served in the 22nd Infantry Regiment and as a Ranger, winning the Legion of Merit with oak leaf cluster before writing

2. Forrest C. Pogue, *George C. Marshall: Organizer of Victory, 1943–1945* (New York: Viking, 1973), xiv (quoting “one of his last recorded interviews”) and 404–5 (visiting Allen Brown’s grave). I thank Kate Epstein for bringing these references to my attention. The Marshall Foundation appointed Dr. Pogue to write the official history of the general; the American Military Institute, forerunner of our Society, elected him its president.

3. http://nobelprize.org/nobel_prizes/peace/laureates/1953/marshall-lecture.html (accessed 15 September 2009).

4. See Michael E. Howard, *Captain Professor. The Memoirs of Sir Michael Howard* (London: Continuum, 2006), part I; and Brian Holden Reid, “Michael Howard and the Evolution of Modern War Studies,” *Journal of Military History* 73 (2009): 869–904.

5. John F. Guilmartin, *Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century* (London: Cambridge University Press, 1974; repr., London: Conway Maritime Press, 2003). Colonel Guilmartin holds the Silver Star with one oak leaf cluster, Legion of Merit, Meritorious Service Medal with one cluster, Air Force Medal with five clusters, Commendation Medal with one cluster, Humanitarian Service Medal, National Defense Service Medal, Expeditionary Service Medal, Vietnam Service Medal, Vietnamese Gallantry Cross with Palm, and Vietnam Service Medal.

Hell in Hürtgen Forest, one of the best monographs of military history to appear in the last decade.⁶ Captain Günther Rothenberg prepared for his eminent academic career by serving in three different armies (British, U.S., and Israeli) on three continents, winning multiple decorations.⁷ Major Azar Gat spent six years in the Israeli army before producing a stunning series of monographs on military thought and action.⁸ Captain Charles Carlton served five years in Britain's Territorial Army before writing his classic *Going to the Wars: The experience of the British Civil Wars*.

The personal familiarity of such eminent historians with “the horrors and tragedies of war” not only helps to shape their professional writing: it also helps to shape military history as a field of study. As long as we can draw strength and inspiration from these practitioners, we need not fear for the resilience of our discipline. But must all military historians have practiced what they preach? And if so, does every sort of military experience “count”? In his *Decline and Fall of the Roman Empire*, written in the 1780s, Edward Gibbon “permits the reader to smile at the advantages which the historian of the Roman Empire derived from the captain of the Hampshire grenadiers,” in which Gibbon served for two and one-half years. Two centuries later, Captain Charles Carlton permitted the reader to smile a little more when he suggested that writing about war without ever having seen combat

6. Robert S. Rush, *Hell in Hürtgen Forest: The Ordeal and Triumph of an American Infantry Regiment* (Lawrence: University Press of Kansas, 2001). Rush, an advisee of Joe Guilmartin, remarked, “When I talked with General Ruggles [executive officer, 22nd, in the Hürtgen] after he had read my penultimate draft of the combat action, he told me that it was only then that all the pieces of the battle came together.” He found that “perceptions of what was happening at the time were different than perceptions of others who were also there. Every day melds into the next and it isn't until later that you really realize what went on.” (E-mail to the author, 7 November 2006.)

7. Günther E. Rothenberg joined the British Army in 1941 and served in Egypt, Italy, and Austria in the Service and Intelligence Corps for the rest of World War II. He also undertook a number of missions to connect with partisan groups in Yugoslavia, receiving the Distinguished Conduct Medal and the Medal of Merit. He then served in U.S. Intelligence as a civilian in Austria, before returning to fight in the Israeli Defense Force during the War of Independence as a weapons instructor and company commander. In 1949 he migrated to the United States, and for the next six years served in the U.S. Air Force Intelligence Branch, which included service in the Korean War. At the same time he began his academic studies. These led in 1958 to his Ph.D. from the University of Illinois. Günther Rothenberg died in 2004. (I thank Frederick E. Schneid for verifying these data for me.)

8. Azar Gat, an advisee of Michael Howard, served for six years in the Israeli Defense Force: “the three years which are mandatory in Israel, and another three, also mandatory on account of my being an officer working in his profession, which was history. . . . In fact, I already arrived in the army almost fully formed as a military history enthusiast and with a BA in history. So the army did not change much, though the staff college naturally exposed me to a lot of interesting stuff. It was the Israeli experience in general that probably had the greater effect.” (E-mail to the author, 14 October 2006.)

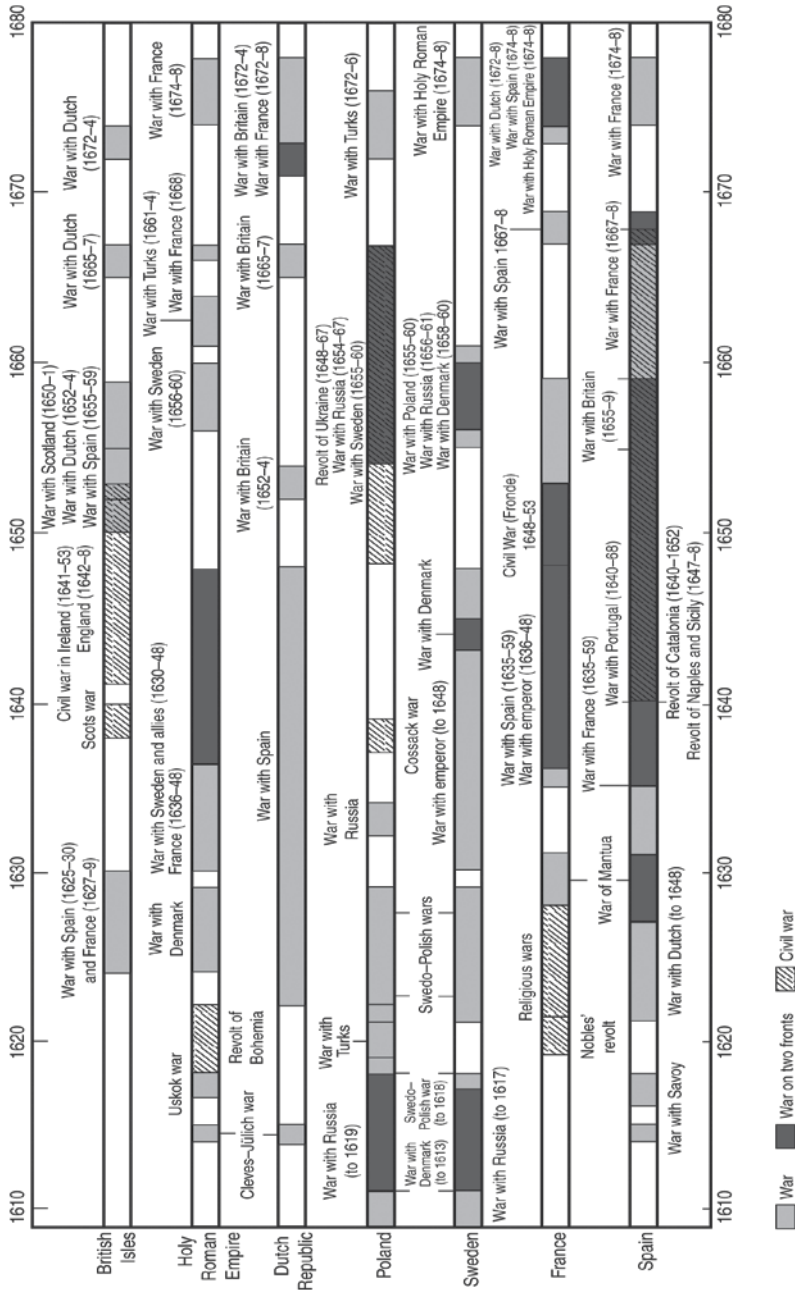
resembled “a life-long celibate trying to draft a sex manual.”⁹ Sir John Keegan also reflected on this matter in the first chapter of *The Face of Battle*. Although he had spent most of his career lecturing to officers at the Royal Military College, Sandhurst, he confessed that “I have not been in a battle; not near one, nor heard one from afar, nor seen the aftermath.” And, he continued, “I grow increasingly convinced that I have very little idea of what a battle can be like.”¹⁰ Keegan nevertheless went on to write a masterpiece on the subject because military historians, whether or not they have “been in a battle,” are no different from other species of historians: personal experience, however hard-earned, can only form *part* of the tool kit we use to dissect the Past. To believe otherwise would be a sad prospect for a Briton who decided to study Spanish history, for a commoner from Nottingham who wanted to write a biography of a Habsburg king, and for a civilian born in the mid-twentieth century who sought to understand the wars of the mid-seventeenth century.

The historical record reveals only two entire years without a war between the states of Europe in the seventeenth century: 1670 and 1682. In the six decades between 1618 and 1678, Poland was at peace for only twenty-seven years, the Dutch Republic for only fourteen, France for only eleven, and Spain for only three (see illustration). Beyond Europe, the Chinese and Mughal empires fought wars continuously between 1618 and 1678, while the Ottoman Empire enjoyed only ten years of peace. Jack S. Levy, an eminent political scientist, considered the sixteenth and seventeenth centuries “the most warlike in terms of the proportion of years of war under way (95 per cent), the frequency of war (nearly one every three years), and the average yearly duration, extent, and magnitude of war.” The global “Conflict Catalogue” compiled by Peter Brecke, another eminent political scientist, shows that, on average, wars around the world lasted longer in the seventeenth century than at any time since 1400 (when his survey begins). War had thus become the norm for resolving both domestic and international problems throughout most of the Northern Hemisphere—and contemporaries knew it. In 1641 Fulvio Testi, an Italian warrior and man of letters, wrote: “This is the century of the soldiers.” That same year the English philosopher Thomas Hobbes concluded that “man’s natural state, before they came together into society, was war; and not simply war, but the war of every man against every man.”¹¹

9. Edward Gibbon, *The History of the Decline and Fall of the Roman Empire*, ed. Alexander Chalmers (London, 1837), vi; Charles Carlton, *Going to the Wars. The experience of the British Civil Wars 1638–1651* (London: Routledge, 1992), 5.

10. John Keegan, *The Face of Battle: A study of Agincourt, Waterloo and the Somme* (New York: Viking, 1976), 13.

11. Jack S. Levy, *War in the modern great power system, 1495–1975* (Lexington: University of Kentucky Press, 1983), 139–41; Peter Brecke, “Violent Conflicts 1400 A.D. to the Present in Different Regions of the World,” reprinted in Geoffrey Parker, “Crisis and Catastrophe: the Global Crisis of the Seventeenth Century Reconsidered,” *American Historical Review* 113 (2008): 1052–79, at p. 1057; *Lettere di Fulvio Testi*, ed. M. L. Doglio, 3 vols. (Bari: Laterza, 1967), 3:204, to Francesco Montecuccoli, January 1641; Thomas Hobbes, *On the citizen*, ed. and trans. R. Tuck and M. Silverthorne (*De cive*, 1641; Cambridge: Cambridge University Press, 1998), 29.



War and peace in Europe, 1610-1680

Frequency of wars in Europe, 1610-80. The concentration of conflicts in the 1640s stands out, although the decades before and after also saw numerous conflicts—many of them involving individual states in multiple wars.

The mid-seventeenth century witnessed not only more wars around the world than any previous or subsequent period, but also more state-breakdowns—a phenomenon that historians have called “the General Crisis.” Ming China, the most populous state in the world, collapsed in 1644; large parts of the Spanish Monarchy, the first global empire in history, rebelled (Catalonia and Portugal in 1640; Brazil, Angola, and South Asia in 1641; Sicily and Naples in 1647); so did the entire Stuart Monarchy (Scotland in 1638, Ireland in 1641, England in 1642, followed by its North American colonies); the Polish Commonwealth, the largest state in Europe, disintegrated in 1655. In the year 1648, rebellions engulfed Russia (the largest state in the world) and France (the most populous state in Europe), while in Istanbul, irate subjects strangled Sultan Ibrahim, and in London, King Charles I went on trial for treason. He was executed early the next year.¹²

Many contemporaries saw the unparalleled frequency, extent, and duration of wars as the direct cause of the unparalleled number of state-breakdowns, and many historians agree with them. But although in several cases the two phenomena were clearly related, in others the link seems either weak or indirect. Let us consider the contrasting examples of Germany and Scotland. When, in 1962, the regional government of Hessen sent out a questionnaire asking respondents to rank the “seven greatest catastrophes” ever suffered by Germany, the Thirty Years’ War topped the list—ahead of the Black Death, defeat in World War II, and the Third Reich.¹³ It is easy to understand why: the loss and displacement of people between 1618 and 1648 was proportionately greater than in either of the World Wars, the material and cultural devastation caused were almost as great, and full recovery took far longer. Yet the period saw no permanent breakdown or dissolution of any of the 1,000 or so states that Germany then contained. The Thirty Years’ War certainly *exported* chaos—contributing to economic dislocation, popular revolts, and constitutional crises in neighboring Denmark, Sweden, Switzerland, and the Dutch Republic—but every one of the German states that fought in the war survived it. Scotland, by contrast, had been at peace for almost a decade when Charles I and his archbishop of Canterbury, William Laud, enjoined the use of a new liturgy. Archie the Fool, the Scots jester who entertained the Caroline court with his droll remarks, immediately foresaw the consequences: on hearing of the decision, Archie turned to Laud and asked “Who’s a Fool now?”¹⁴ The riots that greeted the first attempt to use Laud’s Liturgy a few weeks later, in July 1637, began a decade of civil war and revolution that ended Charles’s rule in Scotland and later also in Ireland, England, and England’s American colonies.

12. Parker, “Crisis and Catastrophe,” 1053–56, maps and briefly describes these events.

13. *Zwischen Alltag und Katastrophe. Der Dreissigjährige Krieg*, ed. Benigna von Krusenstjern and Hans Medick (Göttingen, 1999), 34 (order of catastrophes preserved).

14. John Rushworth, *Historical collections or private passages of state, weighty matters in law, remarkable proceedings in five parliaments, beginning the sixteenth year of King James, anno 1618*, 6 vols. (London, 1659–1722), 2:470–71.

So if thirty years of fighting failed to destroy a single state in Germany, while the Scottish Revolution began during a decade of peace, then war can be neither a necessary nor a sufficient cause of the General Crisis. What are historians missing? In the 1740s, the French philosopher Voltaire addressed this question in his *Essay on the customs and character of nations*. Having described the murder of the Ottoman Sultan Ibrahim a century before, Voltaire observed that:

This unfortunate time for Ibrahim was unfortunate for all monarchs. The crown of the Holy Roman Empire was unsettled by the famous Thirty Years' War. Civil war devastated France and forced the mother of Louis XIV to flee with her children from her capital. In London, Charles I was condemned to death by his own subjects. Philip IV, king of Spain, having lost almost all his possessions in Asia, also lost Portugal.

Voltaire, the first writer to recognize the global nature of the General Crisis, continued with a review of the near-contemporaneous revolts in China, Morocco, and India, concluding that "Three things exercise a constant influence over the minds of men: the weather, government and religion." This trio, he assured his readers, offered "the only way to explain the enigma of this world."¹⁵

The experience of both Germany and Scotland confirms Voltaire's stress on "government and religion" in causing state-breakdown, but what about the weather, the first element in his telegraphic trinity? Recent research has revealed that three major climatic aberrations occurred in the mid-seventeenth century. First, an almost unparalleled series of major volcanic explosions between 1638 and 1643 threw tons of sulfates into the stratosphere, where they reflected some of the sun's energy back into space. Second, solar energy received on earth diminished not only because of the volcanic dust veils but also because sunspots virtually vanished: more sunspots appear in a single year now than appeared in the entire period 1643 to 1715. These two unrelated natural phenomena both produced global cooling. They also either caused or coincided with an unparalleled number of episodes of El Niño, which produces prolonged droughts in some areas. At present, the world experiences two El Niños every decade, but seven occurred between 1640 and 1661—two between 1640 and 1642 and two more between 1647 and 1650.

Although contemporaries remained unaware of these vectors of climate change, many of them noted the unusual frequency and intensity of both cold and drought.¹⁶ Thus New England's colonists complained bitterly as they experienced a landmark winter in 1641–42. John Winthrop, Governor of the Massachusetts Bay Colony, noted in his Journal that "The frost was so great and continual this winter that all the Bay was frozen over, so much and so long, as the like, by the Indians' relation, had not been so these forty years. . . . To the southward also the frost was

15. F. M. A. de Voltaire, *Essai sur les moeurs et l'esprit des nations*, 2 vols. (written 1740–1; published 1756; Paris: Pléiade, 1963), 2:756–57, 794, 806.

16. Parker, "Climate and catastrophe," 1060–64, reviewed the explanations advanced by contemporaries.

as great and the snow as deep, and at Virginia itself the great [Chesapeake] bay was much of it frozen over.”¹⁷ In Japan, when Enomoto Yazaemon (a merchant and minor official living just north of Tokyo) wrote his memoirs, he remembered the unique conditions on New Year’s Day 1641 when “ice lay in the fields one foot deep. From that time, I observed seven snowfalls until the spring.” Enomoto also remembered that “the corpses of those who had starved to death filled the streets while the peasants, artisans and merchants who begged for food were numerous.” A chronicler in Shanghai, writing in April 1642, recorded that “since the New Year [31 January], it has been cold and it has rained frequently. . . . The people are dying in great numbers for lack of food.”¹⁸ In Europe, in 1641–42 Scandinavia experienced the coldest winter *ever* recorded; in the Alps, fields, farmsteads, and even whole villages disappeared as glaciers advanced to their maximum extent, while in Macedonia, “there was so much rain and snow that many workers died through the great cold.”¹⁹

Summers as well as winters were unusually cold in these years. Perhaps the most striking evidence of this appears in the diary kept by a soldier serving in central Germany during *August* 1640: “at this time there was such a great cold that we almost froze to death in our quarters. On the road, three people did freeze to death: a cavalryman, a woman and a boy.”²⁰ In the Northern Hemisphere as a whole, 1641 was the third coldest summer recorded over the past six centuries, 1643 was the tenth coldest, and 1642 was the twenty-eighth coldest. Mean temperatures around the globe remained at least one degree Celsius lower (and sometimes two or three degrees lower) than today, leading historians and climatologists alike to call the period “The Little Ice Age.”

The 1640s also saw many prolonged droughts. The lack of rain in the western United States, combined with unusually low temperatures, significantly stunted the growth of plants. No rain fell in the valley of Mexico between spring and

17. *The Journal of John Winthrop 1630–1649*, ed. R. S. Dunn, J. Savage, and L. Yeandle (Cambridge, Mass.: Harvard University Press, 1996), 368, 384, and 387. Of course, to claim that unpleasant weather is “the worst in living memory” is only human, and farmers in all times and all places are profound pessimists, yet subsequent research by climatologists has confirmed Winthrop’s impressions. The English colonies did indeed experience a “landmark winter” in 1641–42: it was the second coldest in a century.

18. *Enomoto Yazaemon Oboegaki* [Memoranda written by Enomoto Yazaemon], ed. Ono Mizuo (Tokyo, 2001), 35, 137; William S. Atwell, “Volcanism and Short-Term Climatic Change in East Asian and World History, c. 1200–1699,” *Journal of World History* 12 (2001): 29–98, at pp. 67–68, quoting the memoir of Ye Shaoyuan.

19. *Proceedings of the International Symposium on the Little Ice Age Climate*, ed. Takehiko Mikami (Tokyo, 1992), 6–9; E. Le Roy Ladurie, *Histoire humaine et comparée du climat. I. Canicules et glaciers (XIIIe–XVIIIe siècle)* (Paris: Fayard, 2004), 298–303; *Conseils et mémoires de Synadinos, prêtre de Serrès en Macédoine (XVIIe siècle)*, ed. Paolo Oderico (Paris: SEVPEN, 1996), 163, 169.

20. *Ein Söldnerleben im Dreissigjährigen Krieg. Eine Quelle zur Sozialgeschichte*, ed. Jan Peters (Berlin, 1993), 166. (The diarist, Peter Hagendorf, made this entry in Neustadt-an-der-Saale on 7 August 1640. I thank David Parrott for this reference.)

October 1641, and lack of rain the following summer raised the price of maize, the staple crop, to famine levels: in both years the clergy of Mexico City took the “Virgen de los Remedios” on procession to solicit God’s intervention before everyone died. Across the Pacific, in the Indonesian archipelago, the longest drought recorded during the past four centuries began in 1643; North China experienced the single driest year recorded during the last five centuries in 1640; while Central China experienced its second driest year in two centuries in 1641, with a drought so severe in Shandong Province that for the only time on record the Grand Canal dried up for lack of rain.²¹ Turning to North Africa, both the Nile and Lake Chad fell to their lowest recorded levels between 1640 and 1643; while much of West Africa suffered droughts of great intensity in 1639–43. In Europe, Catalonia experienced a drought in spring 1640 so intense that the authorities declared a special holiday to enable the entire population to make a pilgrimage to a local shrine and pray for rain—one of only four such occasions recorded in five centuries.²² In Scotland, finally, the same year that saw the riots against “Laud’s Liturgy” (1637) was the driest in two decades, and the next year, which saw open defiance of the king, was the driest in a century. Parts of Scotland experienced the worst sustained drought in a millennium from 1636 until 1649, when food of all sorts became so scarce that “the like had never been seen in the kingdom before, . . . since it was a nation.”²³

Could sudden climate change, and in particular intense cold and prolonged drought, have been the common denominator that caused the unprecedented wave of both wars and state-breakdowns, with peaks that coincided with the El Niño clusters of 1640–42 and 1647–50? To the skeptic, a fall of one or two degrees Celsius in mean temperatures at the equator may seem insignificant: but that is to think in linear terms, ignoring the fact that some changes progress geometrically, not arithmetically. In the Northern Hemisphere, home to the majority of humankind (and scene of all the major wars and state-breakdowns of the mid-seventeenth century), two factors intensify the impact of overall temperature changes in a non-linear fashion.

- First, solar cooling reduces temperatures at northerly latitudes by five to ten times as much as at the equator, in part because increased snow cover and sea-ice reflect more of the sun’s rays back into space. Thus any significant

21. Sato Taketoshi, *Chukogu saigaishi nenpyo* (Tokyo, 1993), 243–44 (listing natural disasters recorded in the *Mingshi*, compiled from Gazetteers, one of which recorded the drying up of the Grand Canal in Shandong); and Song Zhenghai, *Zhongguo gudai zhong da ziran zaibai beiyichang nianbiao* (Guangzhou, 1992), data for 1641 in categories 4-7/9.

22. Parker, “Crisis and catastrophe,” 1066–69, described the extreme climatic events of 1640–42.

23. *The historical works of Sir James Balfour of Denmylne and Kinnaird*, ed. James Haig, 3 vols. (Edinburgh, 1825), 3:432–33; Andy Baker et al., “Northwest Scotland Stalagmite and Climate Reconstruction Data,” IGBP PAGES/World Data Center A for Paleoclimatology Data Contribution Series #2000-011. NOAA/NGDC Paleoclimatology Program, Boulder, Colorado.

extension of the polar icecaps and glaciers would further reduce temperatures in northern Europe, northern Asia, and North America.²⁴

• Second, any fall in *mean* temperatures inevitably conceals a greater frequency of severe climatic events such as flash floods, freak storms, and prolonged droughts, as well as abnormal (and abnormally long) cold spells. All of them destroyed or decimated the crops on which humankind depends for its survival.

A recent “model” of the global climate in the seventeenth century shows significantly colder weather in precisely the areas that experienced both the most intense wars and the most spectacular state-breakdowns: Ming China, Britain, and the Iberian and Italian peninsulas.²⁵

How can historians calibrate abnormal cold and droughts with wars and revolutions in the 1640s (or at any other time)? We must not paint bull’s eyes around bullet holes and argue that since only climatic aberrations seem capable of causing simultaneous upheavals around the globe, therefore those aberrations “must” have caused the upheavals. An examination of the uniquely detailed surviving sources concerning the Irish rebellion of 1641 and its aftermath allows us to see exactly how the correlations worked.

In Ireland, as in other parts of the world, the extreme weather of the El Niño years 1640 and 1641 created widespread food shortages. Moreover, since farm produce formed the kingdom’s principal export, trade atrophied. In Ulster, government policies intensified the impact of this natural disaster because King Charles assembled an army in the province, ready to sail to Scotland and defeat his rebels there. Since no boats could be found to transport the 10,000 troops raised, they remained billeted in the Province and, according to a correspondent in Belfast, by May 1641 the troops’ demands for food and lodging had rendered the local population “so much impoverished that they can no longer subsist.” The inhabitants of the town, he continued, “have spent their whole year’s provision and have not wherewith to furnish themselves with necessary victuals to maintain them and their families.” Meanwhile, in the countryside, land rents fell by half. These events pitted the native Catholic population against the Scottish and English immigrants who had settled in new towns and in “plantations” (lands granted to the British newcomers, sometimes after confiscation from the native Irish) in the struggle to survive. According to one Catholic Ulster farmer, many joined the rebels only “after the husbandry failed.”²⁶

24. D. T. Shindell et al., “Solar forcing of regional climate change during the Maunder Minimum,” *Science* 194 (7 December 2001): 2149–52 (I thank Martha Peach for this reference).

25. D. Rind and J. Overpeck, “Hypothesized causes of decade-to-century scale climate variability: climate model results,” *Quaternary Science Reviews* 12 (1993): 357–74, diagram on p. 365. This study concerned the 1680s and so did not consider the numerous volcanic eruptions of the 1640s that would have further reduced global temperatures.

26. Raymond Gillespie, “Destabilizing Ulster,” in *Ulster 1641. Aspects of the rising*, ed. Brian Mac Cuarta, 2nd ed. (Belfast: I.I.S., 1997), 107–21 (quotation from p. 111, Edward Chichester

In spring 1641 King Charles exacerbated these tensions by suggesting that if the Irish Catholics provided enough money to make him independent of his opponents in England, he would relax the laws that barred Catholics from holding public office, and he would create no more “plantations”: a package of concessions known as “the Graces.” Fearing the consequences of a deal between the king and his Catholic subjects, Ireland’s Protestant elite decide to make common cause with Charles’s opponents in England to preserve the status quo and thus prevent the Catholic majority from receiving constitutional protection. Their action provoked several frustrated Irish Catholics to form a conspiracy to seize power: one group under Conor Lord Maguire would take Dublin castle, the government’s headquarters and arsenal, while another led by Sir Phelim O’Neill captured all Protestant strongholds in Ulster. Conspirators elsewhere would follow suit. They agreed to act in unison on 23 October 1641 and then use their new position of strength to insist on enactment of “the Graces.” Late on the night of 22 October Owen Connolly, one of the conspirators, betrayed the plot, and the government at once arrested Maguire and many other leaders, thus retaining control of Dublin and its castle, but they were too late to prevent Catholics elsewhere from seizing local Protestant strongholds.

Many now exploited the confusion caused by these dramatic events to settle old scores. Over 2,500 Protestant men and 600 women who survived the uprising gave detailed evidence concerning the harm or loss they or their friends and family had suffered. Many gave their sworn “depositions” within a few weeks of the events they described. Their combined testimony covers almost 20,000 manuscript pages.²⁷ One deponent from County Down related how he had watched a Catholic run his Protestant neighbor through with his sword, exclaiming “that will make an end of him, that he shall never write a *mittimus* [an arrest warrant] to send me to Down gaol again.” Another deponent described how the Reverend Thomas Trafford, “being wounded, called for a surgeon; whereupon one of the rebels answered him ‘I will be your surgeon’ and immediately killed him.”²⁸ But most of the Protestant victims of the uprising did not die in face-to-face slayings

to Ormond, May 1641); deposition of Donald McDonnell, Ms 838/30-1, Trinity College, Dublin [hereafter TCD].

27. A three-year project to transcribe and digitize all the depositions, currently available only in the library of Trinity College, Dublin, is under way: “Massacres, Myths and Memory—the 1641 Depositions Digitisation Project.” Further information available at <http://www.tcd.ie/funding-priorities/priority/wisdom/deposition.php> (accessed 29 September 2009). Meanwhile, see the brilliant short description of Aidan Clarke, “The 1641 depositions,” in *Treasures of the Library: Trinity College Dublin*, ed. Peter Fox (Dublin: Royal Irish Academy, 1986), 111–22. On p. 113 Clarke estimated that one-fifth of all depositions mentioned settlers who died through privation and one-fifth recorded people who died by violence. His subsequent research, however, suggests both that more than half of all Ulster depositions reported killings, and that the weather killed more settlers than did the rebels (personal communications to the author, July 2004 and September 2005).

28. Deposition of Captain Thomas Clerke, Ms 837/117, TCD; Mary Hickson, *Ireland in the seventeenth century*, 2 vols. (repr., London, 1994), 2:346–48, deposition of Ruth Martin, 16 March 1643.

like this; instead they perished because their Catholic neighbors drove them from their homes and stripped them of their clothes.

Turning men, women, and children out naked during the late autumn in Ireland would of course normally cause distress, discomfort, and, occasionally, death from exposure, but the late autumn of 1641 in Ireland was not normal. Survivors emphasized that the rebellion had occurred “in depth of winter, yea a more bitter winter than was of some years before or since seen in Ireland,” and many of the individual “depositions” made by Protestant survivors mentioned frost and snow.²⁹ The widow of Thomas Aleyne, from Longford, reported how he was stripped and beaten before “in frost and snow they kept him three days in prison.” Many Protestants in County Cavan were evicted, stripped, and left to find their way to Dublin: a death march on which “many perished by famine and cold, traveling naked through frost and snow.” Even in Ireland’s deep south, Edward Butler almost died as he fled to Waterford “being that cold and snowy day.”³⁰ The combination of human and natural causes killed even more Protestants in Ulster. To take three examples from County Armagh: one group of Catholics in Kilmore crowded their Protestant neighbors into a thatched cottage which they then set on fire, leaving the few survivors “in the snow for dead,” while another group set the local Protestants “in the stocks in frost and snow” until they revealed where they had hidden their money. At Newry, Catholic neighbors robbed the tailor Thomas Richardson of all his possessions and turned him and “his wife and five small children” out of their house. Although they “gathered some poor clothes, or begged them,” and managed to escape, they were soon “again stripped of all their clothes.” That night, Richardson later recalled, while

Flying away for safety naked in the frost and snow, one poor daughter of his, seeing him and her mother grieve and cry for their misery, in the way of comforting them said she was not cold, nor did cry, although [immediately] after, she died of cold and want. And the first night this deponent and his wife, creeping for shelter into a poor [shack], were glad to lie upon their little children, to keep them from dying of cold.³¹

29. Harleian Ms. 5,999/29v, British Library, London, “Discourse” on the causes, course, and consequences of the 1641 rebellion by Henry Jones and others. Because England and Ireland used the Julian Calendar throughout the seventeenth century, events recorded as happening in late October 1641 “Old Style” actually occurred in early November by our current reckoning (the Gregorian Calendar)—but still frost and snow are virtually unknown in Ireland at that time of year. It was indeed a “more bitter winter” than any other on record. In this article, all British and Irish dates are given according to the “Old Style” then in use.

30. Deposition of Isabel Aleyne, 20 August 1642, Ms 817/180, TCD; *A contemporary history of Affairs in Ireland from 1641 to 1652*, ed. John T. Gilbert, 6 vols. (Dublin, 1879–80), 1:481 (a “Relation” of proceedings in Cavan); Hickson, *Ireland*, 2:66, deposition of Edward Butler, 26 February 1653.

31. Hickson, *Ireland*, 1:285–86, deposition of Margaret Phillis, 15 March 1643; deposition of Jane Grace, 3 September 1642, 836/52, TCD; Hickson, *Ireland*, 1:312, deposition of Thomas Richardson, 30 January 1643.

The testimony of survivors of the revolt of 1641 mentioned deaths from frost and snow—in a country that seldom sees frost and snow—more frequently than deaths from violence: the Little Ice Age at least doubled the number of Protestants who died as a result of the rebellion. This is a fact of capital importance because of the feedback loop that exists between atrocity and revenge. Since the desire for revenge usually corresponds to the scale of the atrocity, doubling the number who perished in 1641 significantly increased the calls for vengeance.

Were these casualties of the General Crisis painting bull's eyes around bullet holes? Admittedly, the deponents came from every social class (farmers, clerics, artisans, servants, and laborers) and over one-fifth were women (a remarkably high proportion for an early modern European source), but all belonged to the Protestant minority, and all were angry and embittered. They had no interest in providing an impartial record of the impact of war and climate change for the benefit of future historians: instead, they gave their testimony in the hope of securing redress and, if possible, revenge at some future date.

At the suggestion of Dr. Henry Jones, a cleric captured by the rebels and used by them as an intermediary, the Dublin government appointed a commission of nine Protestant ministers, including Jones, on 22 December 1641 (exactly two months after the rebellion began) to take down depositions concerning crimes that involved property, later expanded to include crimes against persons (a revealing chronology). The commissioners evidently used a questionnaire to harmonize the testimony of those who voluntarily shared their experiences, they asked additional questions of their fellow clerics, and they issued each deponent with a certificate of loss. They also made haste to publicize what they heard. In March 1642 Jones went to London where, acting as “agent and attorney” for “all our distressed brethren clergy of Ireland, their wives and children, widows and orphans,” he presented to a stunned English House of Commons a *Remonstrance* that included lurid extracts from almost eighty depositions. These he also published in an inflammatory pamphlet entitled *A remonstrance of divers remarkable passages concerning the church and kingdome of Ireland*.³²

Shamed and shaken, the English Parliament offered 2.5 million acres of land, to be confiscated from the rebels, as security to those who lent money to raise troops to defend the Protestant cause in Ireland. This, combined with assistance from Scotland, sufficed to keep a civil war going until 1649, when Oliver Cromwell led a well-equipped army to restore English control and exact revenge. Propaganda, which had played a prominent part in raising money for the venture, now also affected the conduct of the campaign. Thus after his troops had taken

32. Henry Jones, *A remonstrance of divers remarkable passages concerning the church and kingdome of Ireland, recommended by letters from the Right Honourable the Lords Justices, and Counsell of Ireland, and presented by Henry Jones Doctor in Divinity, and agent for the ministers of the Gospel in that kingdom, to the Honourable House of Commons in England* (London, 1642), 80 pages containing 78 depositions (of the 637 then available: I thank Aidan Clarke for this total). See also Aidan Clarke's essay on Henry Jones in the online *Oxford Dictionary of National Biography*.

and sacked the town of Drogheda, killing some 2,500 soldiers and 1,000 civilians, Cromwell explicitly justified the atrocity as revenge for the massacres of 1641: his soldiers, he averred, implemented “a righteous judgement of God upon these barbarous wretches, who have imbrued their hands in so much innocent blood.”³³ Meanwhile, in England, Parliament published another polemic by Henry Jones, provocatively entitled *Abstract of some cruel massacres of the Protestants and English in Ireland*, which contained further inflammatory selections from the “depositions.” The pamphlet aimed to overcome any “aptness to lenity” towards Ireland among its readers—and in this it succeeded. One horrified correspondent of a London newspaper claimed that “the only way to save [Ireland] is to destroy it,” while another looked forward to seeing all the Irish fall “on their knees and make way for the doing Justice upon the bloody part of them that Englishmen may once more live in peace in Ireland.”³⁴

In 1652 the English Parliament passed “An Act for the settling of Ireland,” that condemned to loss of life and land several hundred “notorious rebels,” all those involved in the 1641 uprising, and also “all and every Jesuit, priest” and other Catholic cleric “that have in any way advised, counselled, promoted, continued, countenanced, ayded, assisted or abetted . . . the rebellion or war in Ireland, or any of the murthers or massacres, robberies or violences committed against the Protestants.” The Act further deprived Irish landowners of at least a portion of their property unless they could demonstrate “constant good affection to the interest of the Commonwealth of England” since 1641—a definition that presumed all of them guilty unless they could prove their innocence.³⁵ The “depositions” now came into their own: a systematic county-by-county index facilitated the identification of those involved in the rebellion and enabled the English regime to deprive over 44,000 Catholics of their homes and lands. Some 5 million acres of farmland changed hands, so that whereas before the uprising Catholics owned about 60 percent of the island’s cultivable land, by 1660 they owned only 20 percent. The rest passed into hands of the victors, laying the foundation for a “Protestant

33. *The writings and speeches of Oliver Cromwell*, 3 vols., ed. W. C. Abbott (Cambridge, Mass.: Harvard University Press, 1937–47), 2:127, Cromwell to William Lenthall, Speaker of the English House of Commons, 17 September 1649. See *ibid.*, 140–43, for Cromwell’s similar justification of the sack of Wexford one month later.

34. Karl S. Bottigheimer, *English money and Irish Land: the “Adventurers” in the Cromwellian settlement of Ireland* (Oxford: Oxford University Press, 1971), 127–28, Irish commissioners to the Rump, 5 May 1652; Derek Hirst, “The English Republic and the meaning of Britain,” *Journal of Modern History* 66 (1994): 451–86, at p. 454, quoting two weekly newspapers from spring 1652. The former anticipated the memorable (and equally implausible) statement attributed by the journalist Peter Arnett to a U.S. officer during the Vietnam War: “It was necessary to destroy the place in order to save it.”

35. *Acts and Ordinances of the Interregnum, 1642–1660*, ed. Charles H. Firth and Robert S. Rait, 3 vols. (London: HMSO, 1911), 2:598–603, “Act for the settlement of Ireland,” 12 August 1652. Catholics who failed the loyalty test lost one-third of their lands, and had to relocate beyond the Shannon; Protestants lost one-fifth of their lands but could retain the rest intact.

Ascendancy” that would last throughout Ireland until the twentieth century and still continues in Ulster.³⁶

The Irish rebellion thus confirms Voltaire’s telegraphic trinity: the origins of the catastrophe included the weather (in the shape of the Little Ice Age), government (in the shape of both the troops billeted on Ulster and the dispute over the “Graces”), and religion (in the shape of the lethal reservoir of hatred that divided Catholics and Protestants). But this explanation, too, remains inadequate: although the trio of structural forces offers a necessary and sufficient *cause* for the subsequent state-breakdown in Ireland, it cannot fully explain either its *course* or its *consequences*. To understand these, historians must consider contingency, intransigence, and above all the fatal synergy that can develop between human and natural phenomena.

The betrayal of the Dublin plot late on 22 October offers a striking example of the role of contingency (or “chance,” if you will) in the course of state-breakdown. When Owen Connolly first arrived to tell his story to a Protestant magistrate, he was so drunk that the latter “gave at first very little credit to so improbable and broken a [story], delivered by an unknown, mean man, well advanced in his drink.” The magistrate therefore sent him away. Only when Connolly made a second attempt later that same night, “being in better temper” (viz. less “advanced in his drink”), did he find “more belief for his then less distracted story.”³⁷ So only at the eleventh hour did the government capture the leaders of the plot and secure Dublin castle—but in doing so they deprived the rebellion of coherence and direction. It was the arrest of Lord Maguire and his associates that opened the way to the wanton acts of violence, cruelty, and revenge recorded so vividly in the “depositions.”

The prominent role of Dr. Henry Jones in turning a tragedy into a catastrophe offers another example of contingency: what if he had been killed by his captors, instead of being sent by them to Dublin as an intermediary (while the rebels held his family hostage)? His personal experience empowered him to speak in the name of all victims of the rebellion when he suggested to the government “that the anxieties of his fellow refugees about future restitution or compensation should be allayed by the compilation of a systematic record of losses resulting from the rising.” Taking down the depositions and claims of the dispossessed convinced Jones “that the rising was part of a continuing, papally directed, international conspiracy, the work of Antichrist; and its object, he explained to the English House of Commons in March 1642, was ‘the utter extirpation of the reformed

36. Bottigheimer, *English money and Irish Land*, 140. For further detail, see the later chapters of Nicholas Canny, *Making Ireland British, 1500–1650* (Oxford: Oxford University Press, 2001), especially the maps on pp. 479 and 504.

37. *History of the Irish Confederation and the war in Ireland* by Richard Bellings, ed. John T. Gilbert, 7 vols. (Dublin, 1882–91), 1:8–9; and Gilbert, *Contemporary history*, 1:353–54, examination of Connolly, 22 October 1641. See also the sanitized account of the “discovery” of the plot in Historical Manuscript Commission, *Ormonde Manuscripts*, new series, vol. 2 (London, 1901), 1–3, Lords Justices to earl of Leicester, 25 October 1641.

religion and the professors of it.”³⁸ He therefore continued to collect depositions, to publicize highlights from them in his pamphlets, and finally to deploy the evidence he had collected against those suspected of involvement in the revolt. The massive redistribution of Catholic land in the 1650s would have been impossible without the collection of incriminating evidence proposed and undertaken by Henry Jones.

Similar intransigence by others also played a crucial role in both provoking and prolonging the rebellions and wars of the mid-seventeenth century. Remaining within the Stuart Monarchy, in 1642 King Charles swore “that no extremity or misfortune shall make me yield” to those who had rebelled against him, “for I will either be a glorious king or a patient martyr,” and even repeated defeats in battle left him unshakably convinced that “God will not suffer rebels and traitors to prosper, or [my] cause to be overthrown.” Just after his catastrophic defeat at the battle of Naseby, the king declared that a “composition” with his opponents “at this time is nothing else but a submission, which, by the grace of God, I am resolved against, whatever it cost me; for I know my obligation to be, both in conscience and honour, neither to abandon God’s cause, injure my successors, or forsake my friends.”³⁹ Similar intransigence by the king’s friends, like Archbishop Laud, as well as by his enemies, like Oliver Cromwell, created the climate in which both war and revolution could flourish.

Yet none of these factors, by themselves, caused (or could have caused) the depopulation and dismemberment of Catholic Ireland: a catastrophe of that magnitude required a *synergy* between natural disasters (not just the unusual “frost and snow” of the Little Ice Age but also a run of harvest failures and a plague epidemic) and man-made disasters (above all war and intransigence). “About the year 1652 and 1653,” wrote one of the English officers appointed to govern Ireland, several failed harvests (which doubled the price of wheat) and a prolonged plague epidemic following a decade of civil war “had so swept away whole counties” that “a man might travel twenty or thirty miles and not see a living creature” except for “very aged men with women and children” whose skin was “black like an oven because of the terrible famine.” A Gaelic poet writing at the same time agreed:

This was the war that finished Ireland,
And beggared thousands.
Famine and plague ran together.

38. Clarke, “Henry Jones,” quoting Jones, *A Remonstrance*. Jones narrated his capture, release, and final escape in Jones, *The beginning and progress of the rebellion in the county of Cavan* (London, 1642.)

39. Gilbert Burnet, *The memoirs of lives and actions of James and William, dukes of Hamilton* (1677; reprinted Oxford, 1852), 70–71, Charles to the duke of Hamilton, December 1642; James O. Halliwell, *Letters of the Kings of England*, 2 vols. (London, 1846), 2:383–84, Charles to Prince Rupert, 31 July 1645.

In all, the rebellion that began on 23 October 1641 may have diminished Ireland's population by one-fifth, as well as reducing land in Catholic ownership by two-thirds.⁴⁰

The same fatal synergy between natural and man-made disasters afflicted other areas at this time. In France, ravaged simultaneously by civil war (the "Fronde"), famine, and disease, Abbess Angélique Arnauld at Port-Royale near Paris lamented in 1654 that "a third of the world has died." To explain this assertion, she singled out the war: "The miseries of our France are such that there are now only few working men, since almost all those in the countryside ravaged by the war are dead, and the rest have enlisted and gone to the wars."⁴¹ Three years earlier Thomas Hobbes, who had taken refuge in Paris from the Civil Wars that ravaged Britain and Ireland, and now found himself caught up in the Fronde rebellion, also blamed the disasters of his day on war:

There is [now] no place for industry because the fruit thereof is uncertain, and consequently no culture of the earth; no navigation, nor use of the commodities that may be imported by sea; no commodious building; . . . no arts; no letters; no society. And, *which is worst of all, continual fear and danger of violent death*; and the life of man, solitary, poor, nasty, brutish and short.⁴²

And indeed the surviving parish registers from the Île-de-France, where both Arnauld and Hobbes wrote, show that they lived through the worst demographic crisis of the entire Ancien Régime, during which (according to a modern demographic study) "almost a quarter of the population vanished in a single year."⁴³

Survivors of the "General Crisis" like Arnauld and Hobbes had three principal reasons for believing that war posed the greatest threat to their well-being: its unpredictability, its ubiquity, and its longevity. In the 1630s a popular verse play written in the Low Countries stressed the unpredictability of the horrors that war could bring. A farmer described how disaster struck just as he and his family sat down for a meal together:

It was Wednesday, at dinner time,
When Mansfeld's soldiers came.
They had no warrant for lodgings or food,
But at our hearth they began

40. Pádraig Lenihan, "War and population, 1649–1652," *Irish economic and social history* 24 (1999): 1–21; see pp. 8 (quoting Colonel Richard Lawrence, *The interest of England in the Irish transplantation stated* [London, 1655]); 1 (quoting Seán Ó Conaill, "Tuireamh na hÉireann," a Gaelic poem written between 1655 and 1659); and 20–21 (population).

41. *Lettres de la reverende mère Marie Angélique Arnauld*, 3 vols. (Utrecht, 1741–42), 2:432–33, to the queen of Poland, 28 January 1654.

42. Thomas Hobbes, *Leviathan, or the matter, forme, and power of a common-wealth, ecclesiastical and civil*, ed. R. Tuck (London, 1651; Cambridge: Cambridge University Press, 1996), 89.

43. Jean Jacquart, "La Fronde des Princes dans la région parisienne et ses conséquences matérielles," *Revue d'histoire moderne et contemporaine* 7 (1960): 257–90, at p. 283.

To steal and to sack,
 Not saying a word, neither “to the death” nor “on guard,”
 Competing to see who could take the most.

The farmer went on relate how, as the soldiers looted everything, they murdered his father when he tried to resist, then raped his sister, and finally set fire to the farm. Only the smoke allowed him to escape certain death.⁴⁴ Whenever and wherever early modern armies fought, insecurity became a way of life for civilians. More than half of the seventy printed accounts written by those involved in the Thirty Years’ War reported flight from their homes at least once to avoid approaching troops. Shoemaker Hans Heberle, who lived in a village near Ulm, fled to the safety of the fortified city thirty times between 1631 and 1648. Pastor Lorenz Ludolf and his parishioners in Hessen fled their homes for eighteen weeks in 1646 and again in 1647 and 1648 when their region became a war zone. Kaspar Preis, a farmer near Fulda, wrote in his diary that “We were so afraid and panicky that even a rustling leaf drove us out . . . There were times when for long periods we didn’t dare sleep in our homes at night.”⁴⁵

Many other contemporaries stressed the ubiquity of war. Martin Opitz, later Germany’s poet laureate, captured this fear in his verse epic of 1621, “Consolation in the adversity of war”:

The trees stand no more;
 The gardens are desolate.
 The sickle and the plough are now a sharp blade . . .
 Is there nowhere that war cannot come
 So that we can live there without fear or flight?

As time passed, the numbing longevity of war also caused demoralization. In Württemberg (southwest Germany), Johann Valentin Andreä, a Lutheran minister and scholar, noted in 1638 that of his 1,046 communicants a decade earlier, barely one-third remained: “Just in the last five years, 518 of them have been killed by various misfortunes.” A peasant family’s diary from neighboring Swabia, written in 1647, reflected even deeper despair:

They say the terrible war is now over, but there is still no sign of a peace. Everywhere there is envy, hatred and greed: that’s what the war has taught us. . . . We live like animals, eating bark and grass. No one could imagine that anything like this could happen to us. Many people say there is no God.⁴⁶

44. *Quatre Dialogues de Paysans (1631–1636)*, ed. J. Haust (Liège: Vaillant-Carmanne, 1939), 67–68, from “Lentre-jeu de Paysans,” a short play printed in Liège circa 1635. I thank Myron Gutmann for drawing it to my attention.

45. Quotations from Geoff Mortimer, *Eyewitness accounts of the Thirty Years War 1618–1648* (London: Palgrave, 2002), 172–73.

46. “Trostgedichte” (1621), in Martin Opitz, *Gesammelte Werke. Kritische Ausgabe*, 2 vols., ed. G. Schulz-Behrend (Stuttgart, 1968), 1:194; Bible from Gerstetten, Swabia, quoted in J. Kuczynski, *Geschichte des Alltags des deutschen Volkes. I: 1600–50* (Berlin, 1981), 117; *Johann Valentin Andreä: ein schwäbischer Pfarrer im dreissigjährigen Krieg*, ed. P. Antony and H. Christmann (Hildesheim, 1970), 128.

Unfortunately for this family, and for millions like them, the Thirty Years' War had another year to run. Of the German civilians whose personal experiences during the Thirty Years' War have subsequently appeared in print, three-quarters reported that troops plundered their community; half recorded the death of people they knew at the hands of soldiers; and one-fifth recorded being personally assaulted by troops. Like General Marshall three centuries later, these German eye-witnesses could all say that "Almost daily I hear from the wives, or mothers, or families of the fallen. The tragedy of the aftermath is almost constantly before me."

The first generation of analysts who looked back at the mid-seventeenth crisis likewise identified war as the dominant cause of the catastrophe. In 1683 ex-Queen Christina of Sweden confided to her journal that "In the present century, there is neither peace nor war: the whole world is at arms, mutually threatening, gripped by fear of each other. Nobody does what they would or could do. No one knows who has lost or who has won, but everyone knows that the world lives in fear without knowing of whom or why."⁴⁷ Twenty years later, as Richard Gough researched the history of his village, Middle (Shropshire, England), the harm caused by the Civil War still struck him as exceptional. He found that twenty-one men had left to fight in the English Civil War, of whom only seven returned. "And if so many died from Middle," Gough noted, "we may reasonably guess that many thousands died in England in that war." He was right. Charles Carlton's careful analysis of 645 "military incidents" recorded in England and Wales between 1642 and 1660 revealed a total of 80,000 deaths in action. Moreover, if the experience of Middle was typical, we must regard this mortality as a minimum, because of the fourteen villagers who left to fight in the civil wars and never returned, only six died in battle. One more perished in a brawl over plunder, another was hanged for horse theft, and the other six disappeared without trace. Some no doubt succumbed to war-related diseases (such as typhoid, revealingly known as "camp fever"), or suffered war-induced accidents (such as freezing to death on sentry duty or the careless handling of a weapon), but whatever their fate, and wherever their unmarked graves, their families never saw them again.⁴⁸

What right have historians to discount such certitude among contemporaries, including many eye-witnesses, that war formed the most important (if not the only) cause of the General Crisis? In his 1980 monograph *War and rural life in the early modern Low Countries*, still the best attempt so far to assess the relative impact of natural and man-made disasters on an early modern society (the lower Maasland), Myron Gutmann considered why contemporaries tended to assign greater causal weight to war than to weather. "While there is a considerable literature of climatic

47. Marie-Louise Rodén, "The crisis of the seventeenth century: the Nordic perspective," in *Early modern Europe: from crisis to stability*, ed. Philip Benedict and Myron P. Gutmann (Newark: University of Delaware Press, 2005), 100, quoting from Christina's "Ouvrage de loisir."

48. Richard Gough, *The history of Myddle*, ed. D. Hey (written 1700–1702; Harmondsworth, U.K.: Penguin, 1981), 71–72. Carlton, *Going to the Wars*, chap. 9, estimates the number of dead and wounded and provides a host of moving individual examples.

lament and amazement," he noted, "it is not nearly as emotional or as extensive as that pertaining to war. There are no novels about hot or rainy summers to equal [Grimmelshausen's] *Simplicissimus*, there are no paintings of floods or hailstorms to equal Callot's *Misères de la Guerre*" engravings.⁴⁹ Nevertheless, natural disasters played a crucial role in creating the overall catastrophe. Gutmann concluded that the collapse of society observed in the Maasland during the General Crisis arose from a synergy between natural and man-made disasters. "Seldom did the effects of bad weather last more than two years without some recovery," he wrote, while "epidemics and bad weather might produce a year or two of difficulties, and a few years of recovery; but they could not turn around [a] region's generally favorable economic and demographic climate." By contrast, Gutmann continued, "*people suffered most when war combined with bad weather sufficiently severe to reduce agricultural production. Their farms ceased to be productive. The price of food skyrocketed. People died in greater numbers and reproduced themselves at reduced rates.*"⁵⁰

Data from many other areas support Gutmann's model. In 1638 Philip Vincent, a peripatetic English pastor who had visited Massachusetts and Guyana as well as much of Europe, published a graphic illustrated description of the combined impact of human and natural catastrophes entitled *The lamentations of Germany. Wherein, as in a glass, we may behold her miserable condition and read the woefull effects of sin, illustrated by pictures, the more to affect the reader*. Vincent distinguished between the scale of devastation before and after 1631: "Before the king of Sweden's coming," he claimed, the war "had consumed no less than 100,000 [lives]. If that be true, what has it done since? How many millions have miserably perished?" Nevertheless, *The lamentations* placed the damage done by the war within a wider context. The plundering troops, Vincent argued, had ruined agricultural production indirectly as well as directly because without farm animals plowing became difficult (although some men harnessed themselves to both plough and harrow), and without seed corn there could be no harvest the following year. So "there is now no other abode but some camp, no other plough to follow, no other employment but the war . . . No tilling of the land, no breeding of cattle; for if they should, the next year the soldiers devour it." Vincent exaggerated only slightly: of over 800 surviving German parish registers, all but five recorded a significant mortality crisis between 1632 and 1637 due to the ravages of famine, plague, and war.⁵¹

49. Myron P. Gutmann, *War and rural life in the early modern Low Countries* (Princeton, N.J.: Princeton University Press, 1980), 199. Of course one can find exceptions, such as the depictions of snow-scenes and natural catastrophes by Dutch artists but, even so, depictions of war far outnumber them—no doubt because weather was seen as (at best) something that could not be controlled or (at worst) a sign of divine displeasure, whereas war exemplified human wickedness and folly.

50. *Ibid.*, italics added. Gutmann was one of the first modern historians to devote serious attention to the impact of the weather on a specific region: see his data on "extreme events" in Maasland at pp. 81–82 and 211–30.

51. Philip Vincent, *The Lamentations of Germany* (London, 1638), 26 and 33 (my thanks to Jill Bepko for help in identifying this work); E. A. Eckhart, *The structure of plagues and pestilences*

Several German writers also blamed nature as well as war for the misery in which they lived. Thus although Pastor Ludolf in Hessen meticulously recorded in his Parish Register the damage done by soldiers crossing through the region, he also noted that

The little that we could sow in the winter Anno [16]40, and also the summer crop [of 1641] was all eaten by mice, so we did not harvest much. One went to the fields to cut, and the grain was stripped away so bare that one could not tell what kind of—or even if—grain had been planted there . . . Anno 1642, all the misery continued just as bad as in the previous year, so that the despair pressed all the harder.⁵²

Others focused on disease. Near Ulm, shoemaker Hans Heberle buried his stepmother, a brother, four sisters, and three children and noted the death of “many thousand people” during a plague epidemic. Near Lake Constance, cloth merchant turned military supplier Hans Conrad Lang lamented that “there have been so many deaths that the like of it has never been heard in human history.” In Hessen, as they reviewed the starvation, extreme weather, epidemics, and human cruelty they had endured, Pastor Minck stated that “our descendants will never believe what miseries we have suffered” while his neighbor Pastor Ludolf sighed that “Whoever has not himself seen and lived through such circumstances cannot believe what I note here.”⁵³

Yet even the testimony of eye-witnesses who recognized that a synergy of human and natural causes had created the mid-seventeenth century crisis remains of only limited value to historians because the authors stayed in the same region, sometimes in the same village. They therefore could neither see nor describe how other communities responded to the same challenges. In a path-breaking article of 1980, the same year that Gutmann’s book appeared, the late Andrew Appleby reminded historians that often “[t]he crucial variable” in coping with early modern climate change was “not the weather but the ability to adapt to the weather.”⁵⁴ Just so, in coping with early modern war, often the crucial variable was not the

in early modern Europe: Central Europe, 1560–1640 (Basel: Karger, 1996), 150; Quentin Outram, “The socio-economic relations of warfare and the military mortality crises of the Thirty Years’ War,” *Medical History* 45 (2001): 151–84.

52. John C. Theibault, “The rhetoric of death and destruction in the Thirty Years War,” *Journal of Social History* 27/2 (1993): 271–90, at p. 283 (parish registers entry by Pastor Lorenz Ludolf of Reichensachsen, Hessen-Kassel).

53. Mortimer, *Eyewitness accounts, 77–78*, quoting Heberle and Lang, and 185, quoting Minck, from near Darmstadt; Theibault, “The rhetoric,” 271, quoting Ludolf. Full-text versions of four previously unpublished diaries written by eye-witnesses of the Thirty Years’ War in Thuringia are now available online at <http://www.mdsz.thulb.uni-jena.de/sz/index.php> (accessed 29 September 2009.) The project makes available 2,636 pages of text, in which 2,603 persons, 985 places, and 993 “events” appear (each one explained in hypertext references).

54. Andrew B. Appleby, “Epidemics and famine in the Little Ice Age,” *Journal of Interdisciplinary History* 10 (1980): 643–63, at p. 663.

presence of soldiers but the ability to adapt to the presence of soldiers. A full understanding of the seventeenth-century crisis requires historians to assess the impact of catastrophe on each state and each community, and to explain why their individual responses differed.

On the local level, the proximity of a granary, a monastery, or an “improving landlord” could save one community from extinction while its neighbors perished; the proximity of a road frequently used by armies could spell destruction. But perhaps the most important variable arose from the prevailing political structure. To borrow a metaphor from physics, each state has its own boiling point, and as a catastrophe “heats” its component parts, so it destabilizes the underlying social and political structures. War and climate change proved so destabilizing in the early modern world because they possessed a unique capacity to “heat” those components, and so render the state unstable. Just as different physical substances have different boiling points, however, so too do different states; and the “boiling point” was particularly low in those political organisms known as “composite states,” comprising a core territory linked to others, often far distant, through formal contracts that specified rights as well as obligations.⁵⁵

The Stuart and Spanish Monarchies were both “composite states,” and in each of them rebellion not only began in peripheral areas attached relatively recently to the core territory but also inspired “copy cat” revolts in other peripheral areas ruled by the same sovereign. On hearing of the revolt of the Catalans against Philip IV in June 1640, James Howell, who had lived in Spain, immediately predicted that “the sparkles of this fire will fly further, either to Portugal, or to Sicily and Italy; all which countries, I observed, the Spaniard holds, as one would do a wolf, by the ear.” Portugal fulfilled Howell’s prediction six months later; Sicily and Naples followed suit in 1647. As he defended Catalonia against Philip IV’s armies, the French agent Bernard Duplessis-Besançon made the same connection: Portugal, he opined, “would never have dared revolt without the example of Catalonia, fearing that it would be rapidly overwhelmed if it joined in so dangerous a dance alone.” Likewise, on hearing in 1647 that rioting had broken out in many towns of Andalucía and that “Sicily was on the brink of being lost,” a phlegmatic minister of Philip IV observed that “In a Monarchy that comprises many kingdoms, widely separated, the first one that rebels takes a great risk because the rest can easily suppress it; but the second takes much less risk; and from then onwards any others can try it without fear.”⁵⁶ Likewise, when in 1645 James Howell wondered

55. I owe this point, and the metaphor, to Leif Torkelsen.

56. James Howell, *Epistolae Ho-ellianae or familiar letters*, vol. 1, ed. J. Jacobs (London, 1650; London, 1890), 420–21, written between June and December 1640 (the date given—3 March 1638—cannot be correct); Archives du Ministère des Affaires Étrangères, Paris, Correspondance Politique Espagne: Supplément 3/240v-1, Duplessis-Besançon, “Première négociation des françois en Catholagne”; *Colección de Documentos Inéditos para la Historia de España*, 112 vols. (Madrid, 1842–95), 88:313, count of Peñaranda, chief negotiator at Münster, to the marquis of Caracena, governor of Milan, 27 June 1647.

“upon whom to lay the blame” for the outbreak of the Civil War in England, he too focused on the example set by successful rebellions elsewhere. The Irish Catholic uprising of 1641, he asserted, was “the womb of our miseries,” but then he embarked on an appropriately composite metaphor:

They have administered fuel enough, and too much, to this fire, but it was first kindled in Scotland. The Puritans there were the womb of it; though I must tell you withall, the loins that begot this centaur were the Puritans here in England. If the flint and steel had not struck fire in England, the tinder had never took fire in Scotland, nor had the flame ever gone over into Ireland to increase the fire.⁵⁷

The outbreak of the rebellions noted by Howell, Duplessis-Besançon, and others on the periphery of composite states, rather than at the core, may seem paradoxical because in both the Spanish and the Stuart Monarchies, global cooling, failed harvests, and lethal epidemics affected the core just as much as the periphery. Indeed their cores often endured more intense government pressure—England and Castile paid far more in taxes than any peripheral territories. Yet England rebelled last and Castile did not rebel at all. The explanation lies in the fact that (to retain the same metaphor) the core in each composite state was more “stable,” with a higher “boiling point” than other areas. Above all, the core of each state often escaped the worst consequences of war, and thus the full synergy between human and natural disasters. Thus, although the village of Middle contributed soldiers and taxes to King Charles’s wars, and also suffered from extreme weather, poor harvests, and high food prices, unlike Ulster and Catalonia it remained safe from the devastation of war. Its people were neither robbed nor raped; no troops burnt their property or brought disease; they even escaped billeting. By contrast, at a time of poor harvests, the need to feed garrisons as well as the local population oppressed peripheral areas like Ulster and Catalonia, even before enemy troops wrought their devastation. These pressures generated confrontations between regional elites and the central government, in which the former appealed to constitutional guarantees and the latter to emergency conditions. Thus in 1639, after four years of war with France the count-duke of Olivares, Philip IV’s chief minister in Madrid, became exasperated by the Catalans’ insistence that he respect their laws (called “Constitutions”) and exclaimed: “By now I am nearly at my wits’ end; but I say, and I shall still be saying on my deathbed, that if the Constitutions do not allow this, then the Devil take the Constitutions.” Olivares never seems to have realized that riding roughshod over the Catalans’ legal safeguards was almost certain to turn intransigence into revolt.⁵⁸

57. [James Howell], *A discourse discovering some mysteries of our new state . . . shewing the rise and progresse of England’s unhappinesse, ab anno illo infortunato 1641* (Oxford, 1645), 15.

58. J. H. Elliott, *The Revolt of the Catalans: A study in the decline of Spain* (Cambridge: Cambridge University Press, 1963), 374–75. Olivares to Santa Coloma, viceroy of Catalonia, 7 October 1639. The revolt began in June 1640.

If we are “to remember the sacrifices” of those who lived during eras of catastrophe, such as the 1640s or the 1940s, as General Marshall urged, we need to understand exactly why those catastrophes happened. This essay suggests a chain of causation that was neither simple nor uniform, and it flies in the face of the “parsimonious explanations” favored by social scientists. But no mono-causal answer is possible to the question “Why did a world crisis occur in the mid-seventeenth century”—just as no mono-causal answer is possible to other complex historical questions such as “How did the Allies win World War II” (the subject of Paul Kennedy’s Marshall lecture). Military factors form an essential element in the answer to each question, but they form only one of those elements. A *wave* of state-breakdowns stemmed from more than war, more even than war waged on an unprecedented scale. That is why Bruce D. Porter’s celebrated epigram that “States make war, but war also makes states” needs an important modification: at times when natural and human forces combine to create catastrophe, when states make war then war also breaks states; and to understand how this happens, historians must learn from climatologists, economists, and political scientists as well as from those who “know a great deal of the horrors and tragedies of war.”⁵⁹

59. Bruce D. Porter, *War and the rise of the state* (New York: Free Press, 1994), 1.

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