

*Marianne S. Wokeck*

## **Weighing the Risks of Relocation in the Face of Crises: How German-speaking Migrants Forged Transatlantic Pathways in the 18th Century**

The crisis of 1816–17 occurred near the end of the long 18th century—a label that marks significant change close to but not at the turn of the century. As Hans-Jürgen Grabbe recently summarized: with the beginning of the 1820s, the patterns of travel, finance, and trade established in the 1700s for migrants from German-speaking areas of Central Europe to reach first British North America and then the United States shifted significantly and paved the way for different kinds of networks across the Atlantic and into the interior of the expanding United States. This brought with it different forms of communication, transportation, and banking that affected the characteristics and flow of subsequent mass migrations in the 19th century.<sup>1</sup> If the flight from German-speaking lands during the 1816–17 crisis marks the end point of earlier patterns, the question addressed here is “how did those patterns get started?”, “how did they develop throughout the 18th century?”, more fundamentally, “why did people relocate?” and then more specifically “why did German-speakers relocate across the Atlantic?”

The answers to those questions are interdependent, and highlight various parts of a complex whole. The broad outlines of the migration of German-speakers across the Atlantic are well known.<sup>2</sup> From the many, disparate records that survived scattered and unevenly we know that it was common, if not accepted for people in Europe to move: short-term as well as long-term; short distances and also far away; temporarily, often at a certain age, and permanently; alone and in groups; boys and men as well as girls and women; in reaction to adversity and in hopes of improved circumstances; responding to recruitment and making migration decisions individually and independently;

with capital and dependent on help along the way; often on foot and also by boat and carriage.<sup>3</sup> The directional flows of population movements in central Europe were sometimes north but predominantly east. In the 18th century, heading first north and then facing west was the exception, about ten percent of all long-distances moves, and those moves depended always on third-party transportation in order to cross the Atlantic, a feature that contributed not only significantly to the cost but also to the largely permanent nature of such relocation in the age of sail.

Historians have had a lively debate about the size of the migration of German speakers to the British North American colonies and the young United States—important in a culture that takes pride in Americans' ethnic background and in superlatives. More important, however, is to remember that the number of sojourners to the New World was large in absolute terms, more than 100,000 over the course of the 18th century, as well as in proportion to North America's population of European descent, the first sizeable influx of foreigners from outside Great Britain—readily identified as outsiders by their language and culture. There is little debate about the shape of the migration wave. Its beginnings in the decades around the turn to the 18th century—initially small but quickly increasing—reached an impressive peak in the middle of the century, and decreased somewhat thereafter with fluctuations around a lower trend, determined in part by the availability of shipping across the Atlantic. (More migration in peace times than during European conflicts and the war of the American Revolution). As to the character of the flow of German-speaking migrants across the Atlantic the substantial proportion of families in addition to the more typical young, single men among people on the move was of far-reaching significance because of the demographic and cultural impact on American society and those who followed later in their footsteps.

Research about the communication and transportations networks that enabled German speaking migrants to relocate has contributed significantly to our understanding about how the passenger trade developed and became routinized and specialized. What had started out as occasional connections along transportation routes mainly between Rotterdam and Philadelphia grew into an increasingly diversified set of networks that reflected developments in transatlantic transportation, communication, trade, and credit, firmly embedded in the context within which England expanded its role and ambition as an imperial power based on naval might.<sup>4</sup>

With the fairly recent shift from largely nationally-focused historical narratives to intensive engagement with Atlantic history the perspectives from which historians approach migration have also changed. The German perspective has traditionally emphasized *emigration* (*Auswanderung*), implying

release, sometimes flight, and thereby loss, when compared with those who stayed; the American perspective typically has paid attention to immigration (Einwanderung), with interest on the newcomers and their integration into those communities already in place. A more holistic focus on the effects of migration on localities from which people leave as well as on those to which they move promises better understanding of the reasons for relocating, the success or failure of such decision and the impact on the communities that lose or gain population.<sup>5</sup> Focus on the migrants in their roles as emigrants and also immigrants, provides dynamic links between the places and people they left and those to which they moved and with whom they connected.

The more we can learn how emigration (and outmigration) affected the local labor and marriage markets, for example, and also resulted in a redistribution of capital and movable assets among those who remained in place, the better we can understand the impact of emigration on economic and cultural developments more generally. Similarly, the influx of newcomers into a community or region offers insight into ways in which human capital and other assets affected the use of land, property holdings and the labour market thereby shaping socio-economic developments. The interplay of personal stories that can be traced in the records and patterns of the networks that link them allows for (re)constructing the complex web of relationships and circumstances that figured into the decision-making processes of moving across the Atlantic and the consequences that resulted from such relocation.

Any delineation of the arc that spanned the transatlantic migration of German speakers over the course of the long 18th century has to make a case for its beginning. Just as the end point was clearly indicated during the flight that accompanied the Tambora climate crisis, so it began under similar climatic triggers more than 100 years before. The mass migration of 1709 marks the point at which German-Atlantic migration was redefined from the pattern of the previous generation, and allowed for sustaining as well as scaling the westward migration flow. The shift from promising refuge for religious minorities to also offering a potential strategy for pursuing opportunity when faced with adversity was critical.<sup>6</sup> Addressing the pivot point of 1709 first provides an initial example of how climate adversity can illuminate the argument that migration can be viewed as an adaptation to vulnerability more generally—a strategy adopted again in 1816/17.

## **Early Climatic Responses**

Information about America was readily available to the reading public as well as illiterate audiences in German-speaking lands for more than a generation before 1709. Many of the descriptions of far-away colonies such as Wil-

liam Penn's advertisement for Pennsylvania and the published or otherwise circulated accounts of immigrants settled in those places were associated with behaviour suitable for outsiders, namely people who did not fit into the established order at home, which included most prominently religious dissenters.<sup>7</sup> Emigration offered those sectarian seekers a viable option, sometimes the only possible reaction to adversity, and it was in that context that they cast their need or desire to leave oppressive circumstances in biblical language.

Emigration thus became exodus as well as a justification to escape decadent and doomed Germany and, on the positive side, to pursue the promise of Canaan. Francis Daniel Pastorius and Daniel Falckner in their writings from and about Pennsylvania are outspoken on that last point, setting up an interpretative framework for their respective decisions to remove to Penn's colony that allowed others to adopt similar reasoning, too. Ministers, teachers, and other local leaders were complicit in this framing of motives in terms of biblical metaphors because there is evidence that they re-told the printed migration accounts to those who could not read and that they used their sermons to comment publically on the applicability and timeliness of those biblical stories, thereby not only lending credence and legitimacy to the widely circulating testimonies from emigrants but also providing members of their parishes and communities with a language describing their plight that was more likely to elicit compassion and charity from authorities and people along the way. Put differently, the emigrants from territories in south-western Germany had learned how to describe their own reasons for leaving in empathetic ways well before Daniel Defoe, motivated by political considerations, characterized the 1709 migrants as "poor Palatine Protestants."

If emigrants from the Rhine lands and beyond in 1709 articulated their motives for leaving in biblical terms, the climate, in particular consequences of destructive climate events after the turn to the 18th century, played a significant, if not publicly articulated role in their decision to pursue perceived opportunities for a better life across the Atlantic. The harsh winter of 1708 affected harvests negatively and thereby threatened crises in terms of hunger, high prices, and indebtedness—climate events thus marking the mass emigration in 1709 and also the flight in 1816–17.<sup>8</sup> Re-consideration of migration from a climatically more astute perspective focuses on two areas. The first one is conceptual, adapting ideas from modern policy makers charged with planning to avoid disaster because of violent climate events. The second one pays different attention to the decision to migrate and the structures in place to channel migration.

Incidences of social unrest, reactions to crises, and interest in forms and effectiveness of government draw attention to measuring living standards and economic growth and development.. The variability of prices of food staples,

like grain, bread, and wine, allowed not only the plotting of movements locally, regionally, and nationally but serve also to explore further the complex relationships among many factors that affected the production, availability, and distribution of foodstuffs. In the past, harvest failures and credit shortages, in combination or out of sync, were common, often systemic, and caused hardships that rendered a large proportion of the population vulnerable to deprivation, curtailed expectations and hope for making a decent living, and left parents with few prospects of providing for their children.

The vagaries of weather and devastation by nature were blamed for and identified as reasons for failing crops and low returns, which have led historians to explore the ways and degrees to which climate and agricultural output were aligned—often in comparison with wages—for meaningful indications of the ability with which families could endure hard times. As a result, there is a wealth of information based on contemporary observations about the weather and from records of the market place and government with respect to prices, especially those sensitive to changes in temperature and precipitation. For the 18th century, the fluctuations in climate in German-speaking territories are well established, albeit with local or regional variations that may well differ from the aggregated information about countries and Europe as a whole.<sup>9</sup>

Geographers and other climate scientists as well as economists and governments have framed their attention to climate differently. Detailing the climate record and studying how climate systems work has yielded much fascinating data and intriguing interpretations of the interdependencies of oceans, wind, atmosphere, solar cycles, and other structures and processes. They introduced in their discussions of weather variability the concept of vulnerability as an analytical tool for describing states of “susceptibility to harm, powerlessness, and marginality of both physical and social systems.” In this view vulnerability of social groups as well as individuals is not a negative indicator of poverty but exposure to sudden or slow-onset hazards in the face of which reaction or action draws on local customs, knowledge and, and belief systems.

One recent effort to construct a vulnerability index has raised questions and offered ideas suitable for revisiting the manner in which historians have viewed and explained emigration from German-speaking territories in the 18th century.<sup>10</sup> The approach of mapping vulnerability to climate change, and the regional variability of this, links sensitivity to hazards to the capacity to adapt.<sup>11</sup> This approach can help to assess how climate and weather affected migration in the Rhine lands. Starting from the premise that the effectiveness of society’s adaptive capacity is paramount for how climate events translate into human and economic consequences, migration is specifically included in

the broad category of adaption planning.<sup>12</sup> The concept of adaptive capacity as component of a local or regional map of climate vulnerability raises the question of whether emigration from particular places can serve as a proxy for the sensitivity with which communities, households, and individuals react to weather-related hazards or anticipate hardships as consequences of harvest failures and subsequent economic crises. Inversely, it can also show the extent to which migration is diffused within a community/region as an adaptive strategy. Assessing vulnerability as a function of exposure to climate variability, sensitivity to the impacts of that exposure, and ability to apply methods of adaptation permits comparison across space and time.<sup>13</sup> With this approach “exposure” is understood as the chance that assets and livelihood will be affected by weather variability risk and “sensitivity” as the susceptibility of assets and livelihoods exposed to risk.<sup>14</sup> Consequently, “adaptive actions” are adjustments in assets, livelihood, behaviours, technologies, or policies that address risks from on-going or future hazards in that they confer private benefits by safeguarding lives and livelihoods. “Adaptive capacity” indicates the ability to reduce vulnerability associated with variable weather.<sup>15</sup>

With a focus on migration as adaptive action in response to climate it is critical to underscore the variability of hazards according to local and regional geography compared with large-scale or global climate events.<sup>16</sup> Before the Tambora crisis in the early 19th century, longitudinal climatic evidence for 18th-century Europe shows considerable but not extreme fluctuations around a fairly narrowly trending band of average temperatures and rainfall. In the contemporary literature and borne out by measurements of the extreme cold in the first decade of the century and the early 1740s and also the Laki volcanic eruption in 1783 stand out as notable, disruptive climate events, yet they are very differently aligned with migration to North America.<sup>17</sup> The mass exodus of 1709 was not matched a generation later, when emigration to the British colonies reached a significant high in 1738, nor almost 80 years later, when knowledge about the New World and opportunities for relocating westward across the Atlantic to North America abounded, but a generation later still another very significant spike in migration to the United States occurred in 1816–17. Critically, both 1709 and 1816/17 coincided with unofficial recruiting efforts for transport to North America, which in both instances ostensibly offered transportation ‘for free’.<sup>18</sup>

The difference between those varying kinds of reaction calls for further exploration to better determine the threshold of hardship and risk to people’s livelihoods from exposure to devastating weather that is associated with emigration as an identifiable coping strategy, and what factors—such as promoted access to migration—allow such customary strategies to manifest. Other modes of adapting to damaging weather and a more discriminating

examination of emigration from a particular place seems warranted in order to determine the nature of the emigration as well as the specific direction, or directions, of such movement. Put differently, if the level of migration from traditional areas of outmigration did not change substantially, was the lack of transatlantic relocation a sign that emigrants chose to turn elsewhere, or not to turn away at all—changes quite possible when issues such as the American War for Independence brought accompanying difficulties for securing transportation across the ocean?

In the age of big data and GIS, historians may be able to determine whether and, if so, to what degree areas with high numbers of emigrants at certain times show alignment with measured impact of extreme weather events or consequences. It may be possible to identify and examine localities with regard to comparable agricultural and economic characteristics but different migration behavior, especially in terms of the direction toward which emigrants moved—east or west. Similarly, historians may learn more about the reasons for a particular directional pull when examining localities from which emigrants moved in comparable numbers at the same time but that were part of very different regions agriculturally and economically. Comparison of places that is sensitive to geographical and climatic variability as well as the ebb and flow of emigration to destinations in Europe and across the Atlantic is likely to suggest not only the relative impact of weather hazards and their various consequences but also point to those factors in the emigration decision that are not weather related. Moreover, such a comparative approach may provide better insight into the range of adaptive strategies—among them relocation—in response to temporary or long-term difficulties in “making a decent living” or “being able to provide for one’s family and children’s future.” Such potential fine-tuning of reasons for and circumstances under which emigration is considered or becomes an action is by no means a call to return to a more detailed cataloguing of the “push” factors in a dichotomous approach to understanding emigration. On the contrary, the greater awareness of the effects weather had under certain circumstances encourages further exploration of how acceptance of relocation as a coping strategy is linked to factors on which next steps depend after the decision was made.

The weather, price, wage, and population information available for 18th-century German territories may not yield enough data points to construct regionally differentiated maps of long-distance emigration in different directions to answer some of the questions about migration as an adaptive strategy to weather. Yet careful selection of some localities in certain regions may go some way toward a better understanding of the complexity with which people whose wealth, income, and livelihoods depended to a large degree directly or indirectly on agriculture and who were therefore vulnerable to changes in

weather, devised strategies for dealing with weather-related or induced adversities that included long-distance migration. Moreover, careful attention to the impact of the variability of weather is also likely to offer further insight into those instances and circumstances in which other vulnerabilities affected migration decisions.

Determining when to relocate and in which direction to set out depended on other, contributing factors. Among them ranked variously and different for each emigrant personal networks that were built on trust and support, options for transport to distant places—east as well as west—, increasingly more and more reliable information about the countries and rulers that invited immigrants, and the perception of better opportunities than those anticipated at home. With that review and understanding of relocation to far-away places as an indicator for resilience in the face of vulnerability, the emigration from German territories in the 18th century turns into illuminating instances in the long history of delineating and detailing how people whose lives and livelihoods are exposed to risks that come with socio-economic insecurity and instability, find hope and ways to new beginnings far away from home.

Exploring migration more fully as a measure of adaptability to adversity, real or perceived, suggests a broader research strategy that builds on a better understanding of the demographic and socioeconomic circumstances in particular localities and, if possible, regions, based on “big data,” in order to examine in greater detail the range of responses that translated not only in the decision to migrate but that also affected the timing of the move and its direction. In an age in which community, especially a person’s place in it, played a critical role in shaping outlook and behaviour and in which transactional relationships were personal and depended on trust the influence of networks—kin, neighbours, co-religionists—cannot be overemphasized. Accepting the enormous risk of emigration as a strategy for some people in certain situations as “private truths” is a basic prerequisite for emigration to play a significant role at all.<sup>19</sup> And yet without ways for financing the relocation, transportation, and knowledge of and connection to the new place, in this case the New World, potential decisions about emigration could not become real actions. The promise of a more holistic approach lies in the further inquiry into the dynamic interplay between the more general framework within which people made their living and evaluated their current lives and future prospects and the factors that shaped the personal decision-making.

Mindful of this approach, the significance of the 1709 mass migration lies primarily in the broad acknowledgement by ordinary people for the first time that seeking relief in America from hard times at home presented an acceptable option or, put differently in the terms of social scientists and economists, an adaptation to vulnerability, especially since migrants perceived the



financing of this move as free. Moreover, mass migration—signalling not only a new phase in the perception of migration but also in the organization of the migration process—served as stimulus for the entrepreneurial dynamic that created networks of people with various interests in promoting settlements in the American colonies and that made the trade in migrants profitable for small as well as large-scale operators over the course of the 18th century.<sup>20</sup>

As a result, emigrants learned to become immigrants and to redefine who they were as they crossed boundaries and manoeuvred among strangers in foreign lands. And those whom they encountered along the way developed roles and practices aligned with the support and services for those migrants, ranging in intent or outcome from charity to exploitation. Evidence of scheming of various sorts and to different ends can be found in advertisements and advice literature by speculators of all sorts and their agents; in the letters from immigrants and the stories told by newlanders; and in the many encounters with unfamiliar persons en route, ranging from boatmen on the Rhine to innkeepers upon debarkation in the American port of arrival. Rather than weighing the relative good or bad of newlanders and speculators and con men more generally recognizing and exploring the adaptive duality of the migration agents' role in manoeuvring between different cultures—that of the migrants and that of lands through which they had to travel—enriches our understanding how people could be made to believe the promise of a better new life faraway. (As well as remaining captivated by that promise after they left the familiarity of their homelands.)

There is a growing and increasingly sophisticated literature about the networks of agents, boatmen, captains, and shippers who played important roles in channelling the migration from the German-speaking lands along the Rhine and beyond.<sup>21</sup> Similarly, our knowledge has improved about the links forged by communication and credit on which transportation to ports in Europe, across the Atlantic, and to a broadening and deepening web of destinations in North America depended, thereby providing better insight into the interactions among personal business, private enterprises, and governments' plans and projects on both sides of the ocean. The specialization of the German migrant trade that developed over the course of the 18th century was a small but fully integrated part of the political and commercial linkages in the growing British Empire and the increasingly international interactions among Europeans.<sup>22</sup> Within that much larger imperial and globalized context, the trade in people on the move first offered a model for comparable migration networks originating in Ireland and Scotland, and then provided important information and experience to those who adapted—disrupted in current entrepreneurial terms—the fundamentals of organizing and profiting from the system of transatlantic relocation to the vastly and rapidly expand-

ing United States under the dramatically changed circumstances of the mid-19th century.

As important as it is to understand the structural elements of the trade with German-speaking migrants in the 18th century and their interdependence in the context of imperialism and globalization, the character of personal relationships across the Atlantic constitutes a requisite component without which the migration could not have been sustained or scaled over more than three generations. In this respect the pioneering generation, that is, those sectarians who left and settled mostly in the Delaware valley after the 1710s, established and maintained transatlantic networks among former neighbors that were critical in two important ways: the networks were personal and largely built on trust derived from shared values, and they had a strong commitment to and practice of philanthropy. As a result, early immigrants to Pennsylvania not only fared well after relocation but also shared their experience and positive assessment of their new circumstances with kin and coreligionists—word that also reached neighbors and others. In some cases such word was meant, in others interpreted as an invitation to follow in the footsteps of those pioneers. In effect early, successful immigrants took on the role of sponsors to those who came later and whose travel debts they were willing to assume in return for labor in households, farms, and shops.

Building on this personal practice of informal investment in emigrants, who undertook the transatlantic move with the promise to pay the transportation costs they owed upon arrival in the colonies, and also on the long-standing custom of transporting indentured servants and convicts from Great Britain to the Caribbean islands and North America, enterprising merchants, captains, and agents variously transformed what had largely been private transactions into business deals for profit. In many instances the developing trade with passengers and redemptioners was small but at times and in the hands of some large and well-connected merchants the scale of operations increased significantly.<sup>23</sup> In both cases success depended on the willingness and ability of already established former immigrants to invest in newcomers, most commonly matching masters and servants along lines of shared or familiar background, as evident in religion, language, and culture. The interdependence of continued, personal connections across the Atlantic, albeit increasingly mediated over the generations, and the business model that made overseas relocation affordable for emigrants of limited means created self-generating dynamics by which German-speaking emigrants could consider turning west in hopes of improving their lives even as circumstances in their home lands and in the New World changed.

Once the decision to relocate across the Atlantic was made, all such German-speaking migrants shared the fate common to those who leave home,

namely in search of defining an identity that is no longer referenced and rooted in the familiar past and traditions of one's place of origin but that is calculated by strangers along the journey and typecast by earlier arrivals, foreigners, at the immigrant's new destination. In the negotiations along the road and upon arrival a "cross-roads" occurs where strangers meet, strange goods are sold, and linguistic invention takes place.<sup>24</sup> The importance of language (bilingualism and multilingualism) is paramount in finding voice and identity, acceptance first and integration later—critical elements of the American experience, if not dream, described by Maxine Hong Kingston in the following way: "The immigrant project is not merely to learn English but to infuse the local tongue with one's own inflection" (to take the immigrant accent and making it part of America . . . the experience of unmaking an old world and re-describing its parts for his or her own purposes, the [immigrant] must suspect that the creole creation is an artifice and subject to the same re-imagining that allowed it in the first place.<sup>25</sup>

The impact of the large-scale emigration of 1709 was far-reaching. The sudden and broad population movement demonstrated that relocation in reaction to adversity, typically combined with certain opportunities and incentives, was a choice not only for dissenters but also for ordinary people—occurring sporadically in various territories throughout the 18th century and giving particular shape to the flow and composition of the migration of German speakers to the American colonies. It also forced territorial lords in the greater Rhine lands to reevaluate their population policies—efforts that met with varying success of restricting or easing the emigration of particularly defined groups of subjects and that are well documented in the official records of the various principalities but not systematically examined. It also gave rise to small and large-scale entrepreneurial opportunities in providing services for German-speaking migrants on their journey from the Rhine lands to North America and, possibly most importantly, it created transatlantic networks of kin, fellow countrymen, and coreligionists that provided both framework and dynamic for the self-generating forces that fuelled the German migration for the long 18th century.

*Indiana University-Purdue University Indianapolis  
Indianapolis, Indiana*

## Notes

<sup>1</sup> Hans Jürgen Grabbe 'The Phasing out of 18th-Century Patterns of German Migration to the United States after 1817,' *American Studies Journal* [online], 62 (2017): 1.

<sup>2</sup> The following summary is based on Marianne S. Wokeck, *Trade in Strangers: The Beginnings of Mass Migration to North America* (University Park, PA, The Pennsylvania State University, 2017).

sity Press, 1999), the findings of which have been added to and refined in the past two decades by several scholars, including significantly contributors to this volume: James Boyd; Andrew Zonderman.

<sup>3</sup> See in this volume the details that arise in many contemporary documents discussed by Konstantin Huber 'Serial sources in excess'.

<sup>4</sup> See Wokeck, *Trade*, 63-72 on the original incidences and maturation of the trade.

<sup>5</sup> See Tara Zahra, *The Great Departure: Mass Migration from Eastern Europe and the Making of the Free World* (New York, W. W. Norton, 2016), for an exploration of these questions in central-east European migration.

<sup>6</sup> See Marianne S. Wokeck, 'Rethinking the significance of the 1709 mass migration', in Jan Stievermann and Oliver Scheiding, eds., *A peculiar mixture: German language cultures and identities in eighteenth-century North America* (University Park, PA, 2013), 24, 36. On 1709 generally, Phillip Otterness, *Becoming German: The 1709 Palatine Migration to New York* (Ithaca, Cornell University Press, 2004).

<sup>7</sup> See Rosalind Beiler, 'Dissenting religious communication networks and European migration, 1660–1710', in Bernard Bailyn and Patricia L. Denault, eds., *Soundings in Atlantic History: latent structures and intellectual currents, 1500–1830* (Cambridge, MA, Harvard University Press, 2009), 220-36.

<sup>8</sup> Wilhelm Abel, *Massenarmut und Hungerkrisen im vorindustriellen Europa* (Hamburg, Paul Parey, 1974); also Wilhelm Abel, *Agricultural Fluctuations in Europe* (transl. of 3rd ed.) (London, Methuen, 1980), are two of the classics that have described and analyzed weather and climate affect socioeconomic circumstances. A recent study also reflects that theme: Daniel Kraemer, "Menschen grasten nun mit dem Vieh" *Die letzte grosse Hungerkrise der Schweiz 1816/17*, Wirtschafts-, Sozial- und Umweltgeschichte (WSU) 4 (Basel: Schwabe Verlag, 2015), ISBN e-book 978-3-7965-3447-8. The literature is large with many examples from across Europe. Carlo Casty, 'Temperatures and Precipitation Variability in the European Alps since 1500', *International Journal of Climatology* 25.14 (2005): 1855-80, is just one recent example.

<sup>9</sup> For a global perspective, see David D. Zhang, et al., "Global Climate Change, War, Population Decline in Recent Human History," *Proceedings of the National Academy of Sciences of the United States of America* 104.49 (2007): 19214-19, Figure 1, <<http://www.pnas.org/content/104/49/19214.full>> (accessed 6 December 2016); also The Discovery of Global Warming, "The Modern Temperature Trend," graphs, <<http://history.aip.org/climate/index.htm> - contents> (accessed 6 December 2016); for air temperature in central England since 1659 <<http://www.climate4you.com/CentralEnglandTemperatureSince1659.htm>> (accessed 6 December 2016). See also Wolfgang Behringer, *A Cultural History of Climate* (Cambridge, Polity Press, 2010), 110, and also with a cultural dimension Hans von Storch and Nico Stehr, 'Anthropogenic Climate Change: A Reason for Concern Since the 18th Century and Earlier', *Georg. Ann. Swedish Society for Anthropology and Geography*, 88 A:2, 2006, 107-13. For Swiss data see C. Pfister, 'Monthly Temperature and Precipitation in Central Europe 1525–1979: Quantifying Documentary Evidence on Weather and Its Effects', in Raymond. S. Bradley and Philip D. Jones, eds., *Climate since A.D. 1500* (London, Routledge, 1995), 118-42, Figure 6.4 and especially the reference to CLIMHIST-CH, a weather chronology based on the CLIMHIST databank, p.131.

<sup>10</sup> Rasmus Heltberg and Misha Bonch-Osmolovskij, 'Mapping Vulnerability to Climate Change', Policy Research Working Paper 5554, The World Bank, Sustainable Development Network, Social Development Unit, January 2011.

<sup>11</sup> In the more recent literature about climate the distinction is made between "hazards" as natural and "disasters" primarily as the result of human actions. See, for example, Dorothea Hilhorst and Greg Bankoff, 'Introduction: Mapping Vulnerability', in Greg Bankoff, Georg Frerks, and Dorothea Hilhorst, eds., *Mapping Vulnerability: Disasters, Development & People*

*Weighing the Risks of Relocation in the Face of Crises*

(London, Earthscan, 2004), 2.

<sup>12</sup> Heltberg and Bonch-Osmolovskij, 'Mapping Vulnerability', 2.

<sup>13</sup> Heltberg and Bonch-Osmolovskij, 'Mapping Vulnerability', 3.

<sup>14</sup> *Ibid.*, 4.

<sup>15</sup> *Ibid.*, 4-5.

<sup>16</sup> For indicators other than temperatures and rainfall, namely dendroclimatic evidence and dust veil data, see, K. R. Briffa and F. H. Schweingruber, 'Recent Dendroclimatic Evidence of northern and central European Summer Temperatures'; and R. S. Bradley and P. D. Jones, 'Records of Explosive Volcanic Eruptions over the Last 500 Years,' both in Bradley and Jones, eds., *Climate*, 366-92; 606-79.

<sup>17</sup> About the Laki eruption, see <<http://www.climate4you.com/ClimateAndHistory1700-1799.htm>>

<sup>18</sup> On 1709 pamphleteering, see William O'Reilly, 'Working for the Crown: German Migrants and Britain's Commercial Success in the Early Eighteenth-Century American Colonies,' *Journal of Modern European History* 15.1 (2017): 130-52; on 1816-17 recruitment, James Boyd, 'The Rhine Exodus of 1816/17 in the Developing German Atlantic World' *The Historical Journal* 59.1 (2016): 99-123.

<sup>19</sup> Timur Kuran, *Public Lies, Private Truths* (Cambridge, MA, Harvard University Press, 1997).

<sup>20</sup> See O'Reilly, 'Working for the Crown', also William O'Reilly, 'Strangers Come to Devour the Land: Changing Views of Foreign Migrants in Early Eighteenth-Century England', *Journal of Early Modern History* 21.3 (2016): 153-87.

<sup>21</sup> For the 1816-17 period, Boyd, 'Exodus'.

<sup>22</sup> See Zonderman, this volume.

<sup>23</sup> See Wokeck, *Trade*.

<sup>24</sup> Lewis Hyde, *Trickster Makes This World: Mischief, Myth, and Art* (New York, Farrar, Straus and Giroux, 2010), 299.

<sup>25</sup> Quoted in *ibid.*, 310.

