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## Global Water Crisis and National Security

Societies and civilizations formed around rivers and lakes or near other sources of fresh water. Where no permanent supply existed, entire societies grew as nomadic cultures that followed the seasonal patterns of rain. Water is the most plentiful natural resource on the planet. Over two-thirds of the earth is covered by water, more than 97 percent of it found in the oceans. According to water statistics compiled by the United Nations (UN), however, the total usable supply of fresh water amounts to less than 1 percent.<sup>1</sup>

Unlike other natural resources such as oil, water is infinitely renewable, but the supply remains finite. As demands increase, the competition for water intensifies, not only among nation-states but also within countries. Even the United States is not exempt from this phenomenon, as reflected by the following headlines: “Atlanta’s Water War Is First in a Gathering Flood,” “Vegas Goes to War over Water,” “River Pumping Proposal Sparks North Jersey Water War,” “Fees and Anger Rise in California Water War,” and “Water War with Mexico Looms in Southwest.”<sup>2</sup> Fortunately, as noted by the UN Development Programme, we “resolve water disputes in courts of law. But across much of [Africa and] the developing world competition for water is intensifying at an alarming rate, giving rise to intense—and sometimes violent—conflict.”<sup>3</sup> Due to the demand for water in most parts of the world, rivers, lakes, and aquifers have become vital to a nation’s security and, thus, a motive for war. Already “over 1.4 billion people currently live in river basins where the use of water exceeds minimum recharge levels, leading to the desiccation of rivers and depletion of groundwater. . . . The number of countries in shared basins—145, account[s] for more than 90% of the world’s population. More than 30 countries are located entirely within trans-boundary basins.”<sup>4</sup>

The report *Global Water Security: Intelligence Community Assessment* predicts that “a number of countries (or regions within countries) are already experiencing

high ‘water stress.’ . . . Such areas include the western United States, northern Africa, southern Africa, the Middle East, Australia and parts of south Asia and China.” Moreover, “as water shortages become more acute beyond the next 10 years, water in shared basins will increasingly be used as leverage; the use of water as a weapon or to further terrorist objectives also will become more likely beyond 10 years.”<sup>5</sup>

In the twenty-first century, the global water crisis has already claimed more lives through disease than have wars, insurgencies, and terrorism. More people die each year from drinking dirty water than from all the world’s natural disasters.<sup>6</sup> Each year, unclean water and poor sanitation contribute to the death of about 1.5 million children from diarrhea.<sup>7</sup> The economic devastation generated by this crisis is unequaled by the aftermath associated with violent conflicts. Clearly, this phenomenon should figure among the acute challenges to national security strategy or occupy an equal or more prominent footing with transnational terrorism, criminal organizations, the proliferation of nuclear weapons, and the spread of deadly technologies.

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#### Notes

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3. United Nations Development Programme, *Human Development Report 2006: Beyond Scarcity; Power, Poverty and the Global Water Crisis* (New York: United Nations Development Programme, 2006), 17, <http://hdr.undp.org/en/media/HDR06-complete.pdf>.
4. *Ibid.*, 24, 205.
5. Office of the Director of National Intelligence, *Global Water Security: Intelligence Community Assessment*, ICA 2012-08 (Washington, DC: Office of the Director of National Intelligence, 2 February 2012), 2, 3, <http://www.fas.org/irp/nc/water.pdf>. “This report—requested by the Department of State—is designed to answer the question: How will water problems (shortages, poor water quality, or floods) impact US national security interests over the next 30 years? . . . The Defense Intelligence Agency (DIA) was the principal drafter with contributions from NGA, CIA, State/INR, and DOE” (“Scope Note” preceding page i).
6. “A Global Crisis,” Living Water International, accessed 2 August 2012, <http://www.water.cc/water-crisis/>.
7. United Nations Children’s Fund and World Health Organization, *Diarrhoea: Why Children Are Still Dying and What Can Be Done* (New York and Geneva: UNICEF/WHO, 2009), 1, 2, [http://whqlibdoc.who.int/publications/2009/9789241598415\\_eng.pdf](http://whqlibdoc.who.int/publications/2009/9789241598415_eng.pdf).

# Of Climate Change and Crystal Balls

## The Future Consequences of Climate Change in Africa

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TODD G. SMITH, JD

KAIBA WHITE

Climate change is a novel problem. Never before has the human species had the capacity to alter the planet's basic life-sustaining functions in as fundamental a way as it does now. Given its geographic location and the low adaptive capacity of many of its governments and economic systems, Africa—the continent that has contributed least to human-induced alteration of the global climate—is

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perhaps the region most vulnerable to climate change. However, model projections of the physical effects of climate change in Africa remain highly uncertain, particularly at the national and subnational spatial scales at which political processes operate. Because of Africa's almost complete dependence upon rain-fed agriculture, the uncertainty of future precipitation patterns raises special concern.<sup>1</sup>

Against this backdrop of great social vulnerability and physical climate uncertainty, political scientists and the policy community have begun to explore the potential security consequences of climate change, describing it as a "stressor" or "threat multiplier" with the potential to contribute to conflict and state failure.<sup>2</sup> Since most of political science concerns itself with explaining the past rather than predicting the future, scholars have looked to historic data on rainfall variability, disasters, temperature change, and human migration (all expected effects of climate change) to try to get traction on the causal connections between climate phenomena and security outcomes.

Such an approach assumes climatic "stationarity" (discussed below), a concept necessarily rejected by analysts of climate impacts as a guide to future outcomes. Two complementary approaches used by this community include deterministic climate forecasts generated by complex physical models and plausible "if-then" scenarios of future climate conditions upon which a range of plausible impacts scenarios can be developed. Some political scientists have begun adopting similar approaches to assessing the broader security implications of climate change; however, uncertainties in the underlying climate projections remain, and a mismatch exists between the spatial and temporal scales of available climate change projections and the questions posed by political scientists.

Using Africa as a regional focus, this article attempts to reconcile the scientific community's approach to analyzing the effects of climate change

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with the emerging approaches in political science for assessing the future security consequences of such change. It presents georeferenced maps of subnational climate vulnerability in Africa, using past exposure to climate-related hazards, population density, household and community resilience, and governance as well as political violence. The article couples this approach with projections of future climate change, employing an ensemble of five general circulation models and suggesting that maps of chronic vulnerability which incorporate a variety of indicators provide a helpful advance for international relations scholars. Specifically, such maps are less reliant on heroic assumptions about changes in political and economic systems than either forecasting or scenario analysis.

The article's first section summarizes what we know about climate change, and the second what we know about climate change in Africa. The third section discusses the limits of three strategies that political scientists have used to understand the significance of future climate change: historical analogues, forecasting, and scenario analysis. The fourth section presents our approach, based on georeferenced maps of subnational climate vulnerability in Africa. By incorporating maps of future climate change from general circulation models, we build on our previous work that used historic incidence of climate-related hazards and a variety of indicators of population density, household and community resilience, and governance and political violence.

### What We Know about Climate Change

For the purposes of this article, three important aspects of our knowledge of global climate change are important, including challenges to the notion of stationarity, the uncertainty of climate projections, and the importance of changes in the incidence of extreme weather events.

#### *Stationarity Is Dead*

For most of human existence, climate determined where and how we lived. Homo sapiens emerged sometime within the past half million years, during the great Ice Age that had gripped the earth for the previous two million years.<sup>3</sup> Our species has mostly known a cold existence, punctuated by geologically brief warm periods (interglacials) every 100,000 years. Until a few

thousand years ago, humans were perpetual nomads, moving and adapting their simple lives to dramatic climatic variations that occurred over decades to millennia. Then came the “Long Summer,” the current warm interglacial that geologists call the Holocene. At 12,000 years and counting, the Holocene has lasted longer than most of the previous interglacials, and humans have capitalized on this extended period of global warmth.<sup>4</sup>

During the Holocene, the global average temperature has varied little, and there is no evidence that the earth as a whole has been warmer than today during this time.<sup>5</sup> The sea level rose rapidly for thousands of years as the last glaciation ended and then stabilized between 7,000 and 3,000 years ago, offering permanent seaside locations to build fishing ports and trading centers that would become great cities.<sup>6</sup> Atmospheric circulation settled into consistent patterns that created breadbaskets where glaciers once stood. After more than 100,000 years of nomadism, humans began to put down roots. Within a few millennia, we transformed from nomads to modern industrialists.

Our modern societies are fortresses of security from the elements, and our survival strategy now calls for withstanding the weather in all its fury rather than retreating to more comfortable climes. The modern systems we have constructed to provide personal and economic security are largely based on the past century of experience with the weather, a period of relative calm. We have forgotten the millennia of dramatic climate variability that our more mobile ancestors survived. The climate we have known for the past century is the ideal one for our modern society precisely because we have invested in optimizing social systems to it.<sup>7</sup> Our great cities are near sea level; we produce our food in the breadbaskets; and we have designed our building codes, water utilities, and power plants to resist familiar weather extremes. As sea levels change, as atmospheric circulations shift, and as climate extremes intensify, society as it now exists is no longer optimized for the climate. For this reason, and as a guide to decision making about climate-sensitive systems, water and climate specialists recently declared in *Science* magazine that “stationarity is dead.”<sup>8</sup>

Stationarity assumes that the range of climate conditions for a given area occurs within a static envelope of variability defined by past extremes. However, climate change means that future climate averages and extremes will differ from those in the past. The past, therefore, is likely to be a poor indicator of how climate risks may interact with social factors to determine

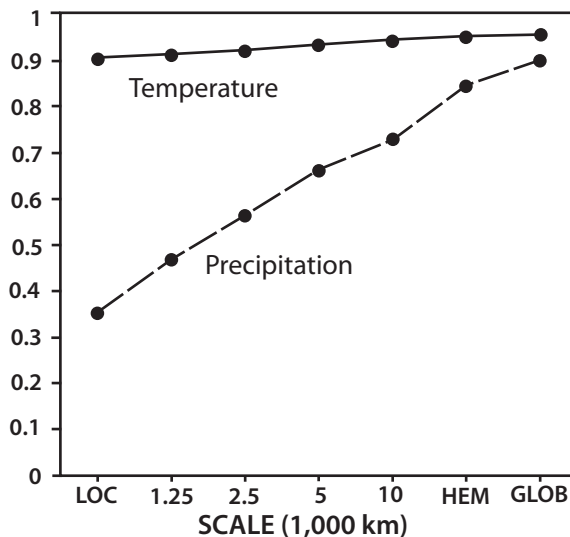


future risk of social instability, conflict, and state failure. Analysts of climate impacts necessarily reject stationarity as a guide to future outcomes.

### *Uncertainty of Climate Projections*

Although global climate models do a good job of mimicking the magnitude and gross spatial distribution of observed global temperature change on sub-continental to global scales, their performance is not as good for precipitation, and agreement among models erodes as spatial scales become smaller (fig. 1).<sup>9</sup> Moreover, they may systematically underestimate the responsiveness of various components of the climate system to the warming that has occurred so far.<sup>10</sup> Some aspects of climate that are changing more rapidly than models project include the rise of globally averaged sea level, loss of Arctic sea ice, intensification of precipitation, poleward expansion of the dry tropics, and loss of land-based ice from mountain glaciers and the Greenland and Antarctic ice sheets.<sup>11</sup>

Several sources of uncertainty in model projections have been summarized in detail previously.<sup>12</sup> First, the amount of greenhouse gases that



**Figure 1. Relative agreement among models at different spatial scales among 21 global climate models used in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report.** (Adapted from Gerald A. Meehl et al., "Global Climate Projections," in *Climate Change 2007: The Physical Science Basis; Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. S. Solomon et al. [Cambridge, UK: Cambridge University Press, 2007], 806, fig. 10.27, <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter10.pdf>. Note that LOC = local scale; HEM = hemisphere scale; and GLOB= global scale.)

humans will emit into the atmosphere in the future is unknown. Climate analysts have developed socioeconomic scenarios based on plausible alternative futures, but these are essentially elaborate guesses about what the future might hold—it is not possible to ascribe probability to any scenario (though business-as-usual scenarios appear likely for some years to come). Changes in other future climate forcings also remain unknown. The amounts of light-shading particles and methane in the atmosphere, volcanic eruptions, and changes in solar activity are unpredictable. Large differences in greenhouse gas emissions and other climate forcings among socioeconomic scenarios account for much of the spread in model projections.<sup>13</sup>

“Response uncertainty,” another important contributor to uncertainty in model projections, refers to disagreement among models resulting from “the limited knowledge of how the climate system will react” to a given emissions scenario.<sup>14</sup> The IPCC’s fourth assessment report (AR4) employed around 20 global climate models in its projections of future climate. For a given climate-forcing scenario (i.e., a given amount of greenhouse gas emissions, solar activity, etc.), the intermodel spread among projections from 1990 to 2100 for any given emissions scenario is on the order of 2°C (i.e., the difference between the two models producing the lowest and highest projections). Considering that the G-8 (Group of Eight) has agreed on the aspirational goal of stabilizing the climate at not more than 2°C above the average preindustrial global temperature, an uncertainty range of about 2°C is significant. The quantified uncertainty range for model projections is simply based on the spread among different climate models across a range of emissions scenarios. Combining emissions uncertainty and response uncertainty produces a full uncertainty range for projected warming to 2100 of 1.1–6.4°C, with a “likely” range of 1.8–4°C.<sup>15</sup> The fifth assessment, scheduled for completion in 2013/2014, may well amplify the range of expected uncertainty since its models will include natural carbon cycle feedbacks in response to human-induced warming.

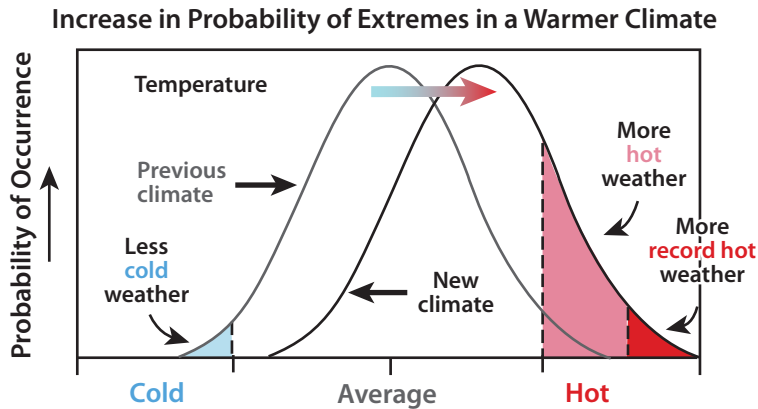
The phrase “full uncertainty range” is a misnomer since emissions and physical model response are not the only factors contributing to uncertainty. Another aspect of scientific uncertainty that has not been fully explored—equilibrium climate sensitivity—quantifies the amount of warming that would result from a doubling of the amount of carbon dioxide (CO<sub>2</sub>) in the atmosphere. The best estimate is about 3°C, but it could be as low as 1°C—

or it could be more than 10°C; the correct value “likely” lies within the range of 2.0–4.5°C and is “very likely” larger than 1.5°C.<sup>16</sup> All of the IPCC models calculate climate sensitivity internally. Consequently, it is not possible to use these models to perform a true risk analysis in which, for any given model, one varies the climate sensitivity to see what would happen to any or all climate variables.

Another form of uncertainty not included in projection ranges—“model structural uncertainty”—covers a host of unknown processes that may simply be missing from the models.<sup>17</sup> For example, some potential amplifying (positive) or dampening (negative) feedbacks are too poorly understood for inclusion in models. Take for example the potential release of billions of tons of CO<sub>2</sub> and methane from frozen soils (permafrost) in the Arctic.<sup>18</sup> As the planet warms, these soils begin to thaw, releasing additional greenhouse gases to the atmosphere and amplifying the warming trend.<sup>19</sup> At present, we cannot predict how much and how quickly they will release their stores of carbon. Another positive feedback not completely integrated into models involves the potential for plants and oceans to take up less CO<sub>2</sub> from the atmosphere in a warmer world. Negative feedbacks may also be missing from models, but the climate system appears particularly endowed with positive feedbacks, which entails heightened risk from a security assessment perspective.<sup>20</sup>

### ***Climate Extremes—Not Averages—Responsible for Most Damage***

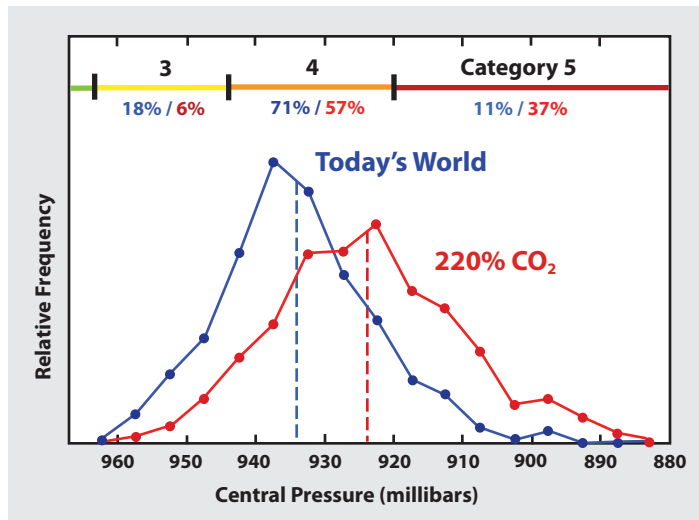
Changes in average global temperature are useful to scientists who study the physics of the global climate system, but they are virtually useless for understanding effects on the local climate. Although changes in local average climate conditions are important, rare, intense weather events cause most local damage. A general feature of climate projections is that global warming causes local extremes to increase more than local averages. For example, the amount of precipitation in the heaviest rain events increases more than the annual average precipitation.<sup>21</sup> If the frequency distribution of a local climate variable (e.g., daily high temperature or daily precipitation) were normally distributed, a one-standard-deviation increase in the average would increase the frequency of an extreme event (i.e., an upper-five-percentile event) that happens only once in 40 years to every six years. Moreover, the new one-in-40-year event would be more intense (fig. 2).<sup>22</sup>



**Figure 2. Simplified depiction of the changes in temperature in a warming world.** (Reprinted from Thomas R. Karl et al., eds., *Weather and Climate Extremes in a Changing Climate: Regions of Focus; North America, Hawaii, Caribbean, and U.S. Pacific Islands*, Synthesis and Assessment Product 3.3, Report by the US Climate Change Science Program and the Subcommittee on Global Change Research [Washington, DC: US Climate Change Science Program, June 2008], 19, <http://downloads.climate-science.gov/sap/sap3-3/sap3-3-final-all.pdf>.)

For example, model experiments by Thomas Knutson and Robert Tuleya found that the most intense categories of hurricanes (categories four and five) became more frequent while weaker categories became less frequent in a modeled world with 750 parts per million (ppm) atmospheric  $\text{CO}_2$  (fig. 3).<sup>23</sup> Knutson summarizes the findings of these and related studies as follows:

- Anthropogenic warming by the end of the 21st century will likely cause hurricanes globally to be more intense on average (by 2 to 11% according to model projections for an IPCC A1B scenario). This change would imply an even larger percentage increase in the destructive potential per storm, assuming no reduction in storm size.
- There are better than even odds that anthropogenic warming over the next century will lead to an increase in the numbers of very intense hurricanes in some basins—an increase that would be substantially larger in percentage terms than the 2–11% increase in the average storm intensity. This increase in intense storm numbers is projected despite a likely decrease (or little change) in the global numbers of all tropical storms.
- Anthropogenic warming by the end of the 21st century will likely cause hurricanes to have substantially higher rainfall rates than present-day hurricanes, with a model-projected increase of about 20% for rainfall rates averaged within about 100 km of the storm center.<sup>24</sup>



**Figure 3. Frequency distributions of hurricane intensities from a climate model under “present-day” (i.e., around 1990) CO<sub>2</sub> concentrations (about 350 ppm) and under CO<sub>2</sub> increased by 220 percent (about 770 ppm).** (Adapted from Thomas R. Karl et al., eds., *Weather and Climate Extremes in a Changing Climate: Regions of Focus; North America, Hawaii, Caribbean, and U.S. Pacific Islands*, Synthesis and Assessment Product 3.3, Report by the US Climate Change Science Program and the Subcommittee on Global Change Research [Washington, DC: US Climate Change Science Program, June 2008], 107, <http://downloads.climate-science.gov/sap/sap3-3/sap3-3-final-all.pdf>.)

## What We Know about Climate Change in Africa

Climate impacts analysts broadly agree that “Africa is likely to be the continent most vulnerable to climate change.”<sup>25</sup> Low adaptive capacity, weak governments and institutions, rapid population growth, widespread water stress, prevalence of malaria and diarrheal diseases, reliance on rain-fed agriculture, a large fraction of economic productivity occurring in climate-sensitive sectors, and the climate change that has already occurred combine to make African societies very vulnerable to climate change.<sup>26</sup> The African continent warmed by about 1°C over the past century, and it is clear that human-induced climate change is well under way there, as in most other parts of the world. However, several common misconceptions about climate change in Africa limit a full understanding of the problem:

- Like other low-latitude regions of the earth, Africa has warmed less than more northern latitudes, including Europe and the Arctic. However, natural and human systems in Africa are adapted to a relatively

small range of historical climate variability compared to more northerly locations. Consequently, those systems are likely to be sensitive to small changes in temperature and precipitation.<sup>27</sup>

- Africa has so many problems not directly caused by climate change that the latter can seem unimportant. However, it has the potential to exacerbate many of Africa's more traditional, high-priority problems, including insecurity regarding disease, water, and food.<sup>28</sup>
- Though often ignored, drivers of climate change other than greenhouse gases are important in much of the developing world. These include aerosols from burning wood, dung, and coal that alter atmospheric hydrology and block incoming solar radiation, thus changing the land-surface hydrology. From the standpoint of the effects on climate as well as preventing and adapting to them, these drivers of climate change are as significant as greenhouse gases and contribute strongly to current climate trends in Africa and Asia—much more so than in Europe and the Americas.<sup>29</sup>
- Unlike the situation for other continents with more developed economies, very little climate data exists for Africa.<sup>30</sup> As a result, some important climate trends in Africa have been attributed primarily to local changes in land cover but are more likely linked to large-scale climate phenomena, such as human-induced global warming and related changes in sea-surface temperatures in the North Atlantic or Indian oceans. Several scientific studies link drought intensification in the western and eastern Sahel and in southern Africa to human-induced warming of the Indian Ocean.<sup>31</sup> In another example, the rapid loss of glacier mass from Mount Kilimanjaro's ancient ice cap in recent decades has often been attributed to extensive deforestation around the mountain's base.<sup>32</sup> However, research by Thomas Mölg and colleagues found that deforestation could account for less than 20 percent of Kilimanjaro's ice loss.<sup>33</sup> The authors argue that changes in large-scale climate dynamics remain the best explanation for alpine glacier wasting both on Kilimanjaro and globally.
- Climate data for Africa are particularly sparse in terms of observed impacts. One can mistake the lack of data for a paucity of climate-

driven effects but should take care not to confuse the lack of detection for the absence of impacts.<sup>34</sup>

Several of Africa's key vulnerabilities to climate change lie in the areas of food security (agriculture, grazing, and fisheries), water availability, health, and coastal zones.<sup>35</sup> The IPCC also identified several systems and sectors typical of, but not specific to, Africa as "especially affected" by climate change: Mediterranean-type ecosystems, tropical rain forests, coastal mangroves and salt marshes, coral reefs, water resources in the dry tropics, lowland agricultural systems, low-lying coastal systems, and human health in populations with little adaptive capacity. No wonder, then, that the IPCC describes Africa generally and its heavily populated river deltas as regions especially affected by climate change.<sup>36</sup>

### ***Food Security***

According to the IPCC, "Sub-Saharan Africa is . . . currently highly vulnerable to food insecurity. . . Drought conditions, flooding and pest outbreaks are some of the current stressors on food security that may be influenced by future climate change."<sup>37</sup> Africa already struggles with food insecurity and depends heavily upon rain-fed agriculture. Although projections indicate that the main crop-producing region of Africa will receive increased average annual rainfall as a result of global warming, year-to-year temperature, precipitation, and drought extremes will likely increase as well, resulting in more variable crop yields. Elevated flooding and storm intensity together with longer and severer periods of drought are likely as larger amounts of precipitation fall in fewer, more intense events.<sup>38</sup> Higher temperatures alone will likely reduce crop productivity in Africa, even in areas with sufficient rainfall.<sup>39</sup> At low latitudes, crops already grow near or above their temperature optima, and further warming in the absence of adaptive changes to cropping systems would reduce their growth. Similarly, milk and meat production are expected to decline with further warming due to increased heat stress on livestock. Barring adaptation, decreased agricultural production will not only increase hunger but also reduce the incomes of crop and livestock producers and raise food prices, further boosting the threat of hunger.<sup>40</sup>

In 2007 the IPCC's AR4 stated that "in some [African] countries, yields from rain-fed agriculture could be reduced by up to 50%. Agricultural production, including access to food, in many African countries is projected

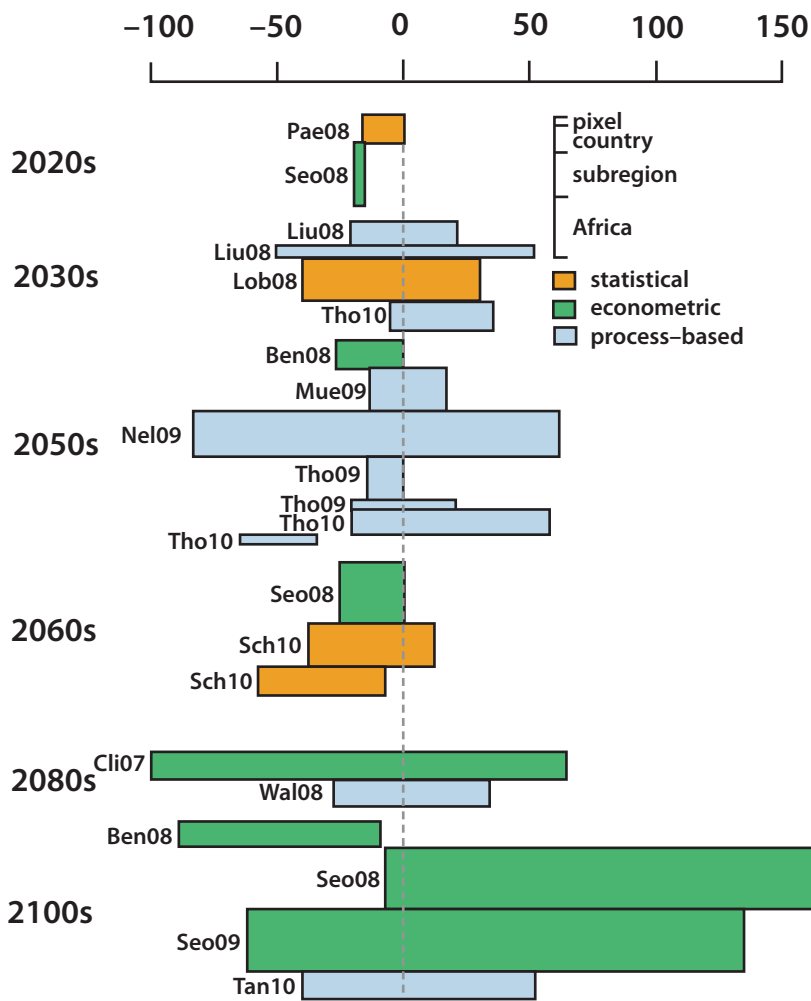
to be severely compromised.”<sup>41</sup> Although weak evidence supported this conclusion at the time, several recent peer-reviewed studies provide stringent support for the general notion that African crop yields face substantial risk due to climate change.<sup>42</sup>

The European Union’s ClimateCost study used IPCC climate projections to drive the ClimateCrop model to estimate country-level crop productivity changes in 2080 for maize, wheat, and rice.<sup>43</sup> Under a “business-as-usual” climate change scenario in which greenhouse gas concentrations rise to 712 ppm carbon dioxide equivalent (CO<sub>2</sub>e) in 2080, model output showed net declines in crop yield of 17–42 percent in 30 African countries. The largest declines occurred in northern Africa, the Sahel, the Horn of Africa, and southern Africa. For those 30 countries, optimization of both water and fertilizer inputs (i.e., adaptation) reduced the average yield decline from 24 percent to 7 percent. In the absence of adaptation, a lower greenhouse gas concentration (498 ppm CO<sub>2</sub>e in 2080) reduced the average loss from 24 percent to 10 percent. Combining adaptation with the lower greenhouse gas concentration lowered the average loss to 2 percent.

The threat of climate change to Africa’s agriculture is not relegated to the distant future. Growing seasons have already become shorter in the Sahel, lowering crop yields.<sup>44</sup> A recent climatological study concluded that “late 20th-century anthropogenic Indian Ocean warming has probably already produced societally dangerous climate change by creating drought and social disruption in some of the world’s most fragile food economies” in eastern and southern Africa. According to the study’s lead author, Chris Funk, “rainfall declines, combined with tremendous levels of rural poverty and vulnerability, produce undernourishment, malnutrition, child stunting and social disruption, hindering progress towards Millennium Development Goals.”<sup>45</sup>

Other studies confirm substantial risks to African food security from climate change early this century. Available projections of climate change risks to African agriculture are relatively insensitive to time in the future, with agricultural productivity changes of plus or minus 50 percent possible by the 2030s (fig. 4). Because of this high sensitivity and large range of uncertainty, Christoph Müller and colleagues suggest that “guidance for policy can best be drawn from a risk management perspective, studying specifically the probability of high-impact scenarios.”<sup>46</sup> Attention to the





**Figure 4. Various published projections of relative (percentage) changes in African agriculture from present conditions.** (Reprinted from Christoph Müller et al., "Climate Change Risks for African Agriculture," *Proceedings of the National Academy of Sciences*, 28 February 2011, 2, <http://www.pnas.org/content/early/2011/02/23/1015078108.full.pdf>.)

*Note:* The width of each bar is proportional to the spatial scale covered by each projection, and colors represent different assessment methods, as shown in the legend. See Müller et al. for source studies noted in the figure.

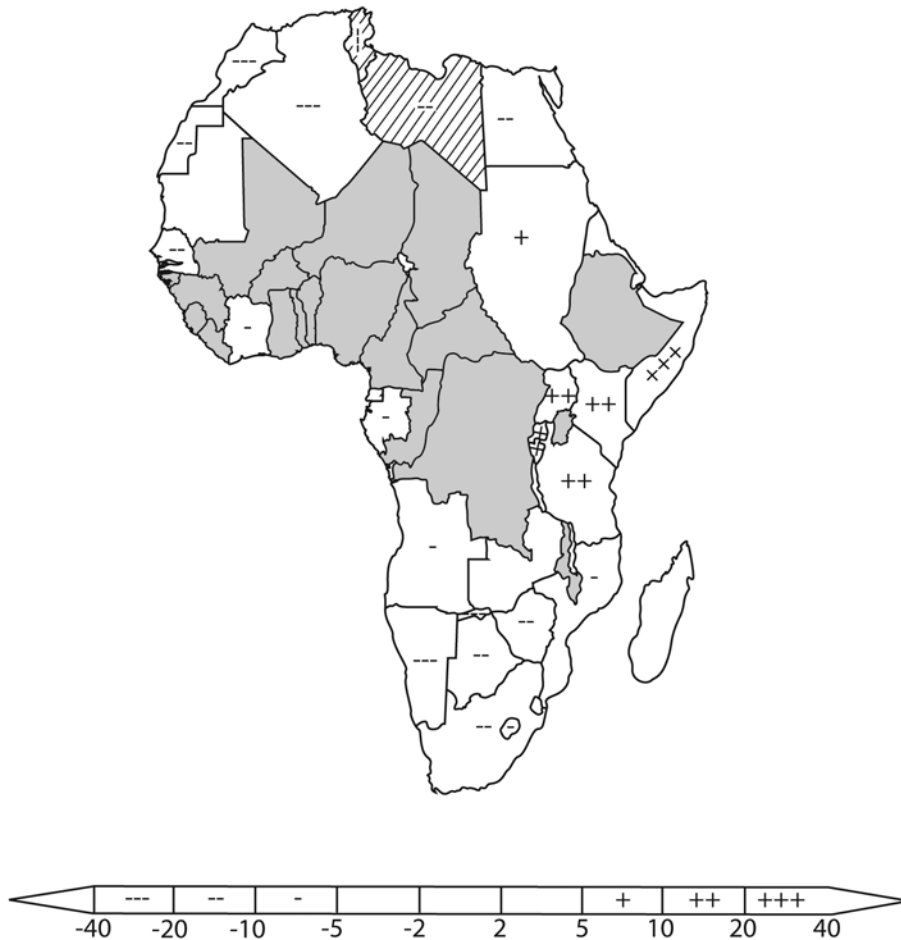
full range of uncertainty is essential if we wish to understand how serious the risk of food insecurity might be for African societies due to near-term climate change. Thomas Hertel, Marshall Burke, and David Lobell found much larger climate change effects on food prices and poverty by 2030 than did previous studies that focused only on central tendencies or medium-impact scenarios.<sup>47</sup>

A large fraction of Africans rely on fish as their primary source of protein, and fisheries serve as a major source of income to coastal communities as well as those situated around inland lakes.<sup>48</sup> The number of fish caught is declining already as a result of overfishing, pollution, and other stresses that degrade aquatic systems. Hence, small changes in climate that alter aquatic ecosystems will likely have a deleterious effect on protein supply and income in Africa. In fact, climate change has already been linked to a well-documented decrease in the ecological productivity of Lake Tanganyika.<sup>49</sup> Once again, the effects of climate change are not limited to the distant future.

### *Other Impacts*

**Water availability and flooding.** By 2050, northern, southern, and parts of western Africa will likely see moderate to extreme decreases in stream flow (runoff) (fig. 5).<sup>50</sup> The area of southern Africa experiencing water shortages could increase from 9 percent today to 29 percent by 2050. Reduced flow is projected for the Nile River, which supplies water for the irrigation of virtually all crops in Egypt and its neighbors. One should bear in mind that 2050 is an arbitrary marker—not the beginning of problems. Crop irrigation experiences disruption when the Nile water flow drops by 20 percent, a condition that has a 50 percent chance of becoming persistent by 2020.<sup>51</sup> The IPCC projects that water stress will affect 75 to 250 million Africans by 2020.<sup>52</sup>

Eastern Africa could see moderate to extreme increases in stream flow by 2050 (fig. 5). Greater precipitation could lead to more wet-season flooding without enhancing dry-season water availability because of expectations that the added rainfall will occur during the monsoon. Events such as the severe flooding in Mozambique in 2000 could become more common. Tropical glaciers of east Africa are retreating rapidly and probably will disappear by the middle of the century.<sup>53</sup> These glaciers have been present since the last ice age, and east African civilization has developed around the water resources they provide. Loss of these



**Figure 5. Projected percentage change in annual runoff in 2050 relative to the 1900–1970 average (median value from 12 climate models).** (Updated from P. C. D. Milly et al., “Stationarity Is Dead: Whither Water Management?,” *Science* 319, no. 5863 [1 February 2008]: 574.) A plus or minus sign indicates areas where more than two-thirds of the models agreed about the direction of change; shading indicates that fewer than two-thirds agreed; hatching indicates that more than nine-tenths of the models agreed. Minus signs indicate decreases, and plus signs indicate increases.

resources over the next few decades will have serious implications for the sustainability of east African societies. The more abundant seasonal monsoon rainfall anticipated for this region will prove useful only if it is captured and stored in reservoirs, a process requiring expensive, adaptive measures.

**Health.** Climate-sensitive diseases are likely to respond to climate change and may already be doing so. Malaria, cholera, and meningitis—major diseases in Africa—represent the main causes of mortality induced

by climate change in Africa during the year 2000, as estimated by the World Health Organization. According to this estimation, Africa already has the highest rate of such mortality in the world, with sub-Saharan Africa the hardest hit.<sup>54</sup> By 2030, diarrheal diseases could increase by an additional 10 percent as a result of climate change.<sup>55</sup> Evidence links a current resurgence of malaria in east Africa with climate change although sparse data makes it difficult to separate various drivers of the disease.<sup>56</sup>

**Coastal impacts.** Africa has many densely populated agricultural deltas and coastal megacities. A rise in sea level, saltwater intrusion into freshwater supplies, and intensified coastal storms with higher storm surges probably will affect coastal Africa in the coming decades. Almost certainly, current models significantly underestimate a future rise in sea level.<sup>57</sup> Experts generally consider plausible a rise of one meter or more by the end of this century.<sup>58</sup> However, approximations of consequent damage and loss of life as well as associated increases in the height of storm surges use lower model-generated estimates of a rise in sea level, systematically biasing these estimates to the low side. One such estimate includes 0.5 to 17 percent of the total population of Africa's coastal countries at risk of damage, with economic damages of 6 to 54 percent of gross domestic product by the end of the twenty-first century.<sup>59</sup> By 2050, permanent flooding would cost Guinea 17 to 30 percent of its rice fields, assuming current projections for sea level rise and no adaptation. Given the high probability of systematically underestimating a rise in sea level, favoring the upper end of these estimated ranges seems reasonable.<sup>60</sup>

### Analogues, Forecasts, and Scenarios in Climate Security

From these diverse and still only partially understood physical consequences of climate change, scholars seek to understand the likely effects on human health and livelihoods. Social scientists and policy analysts attempt to assess the potential security consequences of climate change, focusing mostly on the likelihood of armed conflict. They try to evaluate the security dimension by employing a variety of strategies, including historical analogues, forecasting, and scenario analysis. Although the use of historical analogues is most clearly suited to traditional empirical research in the discipline of political science, it may have limited utility in examining the future consequences of climate change. Forecasting models and scenario analysis

have less standing in the discipline but are attractive in that they directly address the limits of historically based research for novel problems. However, as this section notes, they too have their pitfalls.

### *Analogues*

Political scientists, largely through quantitative studies, take the anticipated effects of climate change (such as drought, rainfall variability, disasters, temperature changes, and migration) and look for historical analogues to find correlations between those climate indicators and the onset of violent conflict, including forms of social strife such as riots and strikes. They also explore a variety of causal mechanisms by which climate effects might give rise to security outcomes and the empirical support for them. These scholars ask such important questions as whether scarcity, abundance, or variability of resource supply act as drivers of conflict and inquire about the role played by extreme weather events and the movement of environmental migrants in sparking conflict.<sup>61</sup>

Given the tendency in the policy and advocacy community to link climate change and security outcomes through conjecture and anecdotes—often regarded as environmental determinism—the rigor of these quantitative studies is important.<sup>62</sup> However, most of them can do little more than use the past and present as a guide to the future. Though optimistic about the potential for more rigorous research on the causal connections between climate and security, Ragnhild Nordås and Nils Petter Gleditsch conclude that “unfortunately, the precision in conflict prediction remains at the stage where meteorology was decades ago: the best prediction for tomorrow’s weather was the weather today.”<sup>63</sup> That said, past exposure to droughts, floods, and other climate-related hazards may not be a good guide to future climate outcomes, as indicated by our earlier discussion of nonstationarity.<sup>64</sup> As Halvard Buhaug, Ole Theisen, and Gleditsch note in their capable summary of the state of the empirical literature on climate and conflict, “Since rapid climate change is still mostly a feature of the future, empirical research of historical associations (or lack thereof) may be of limited value.”<sup>65</sup>

The effects of climate change have historical antecedents, but the uncertainty surrounding the physical effects of climate change, particularly in Africa, makes it difficult to extrapolate the social and political effects and security outcomes of interest, including but not limited to conflict. Those

challenges have not stopped a number of scholars from trying—some more convincingly than others.

### *Forecasting/Projections*

The discipline of political science largely concentrates on the explanation of past events, employing prediction and projection more sparingly, although there are some prominent examples. Models of US presidential elections, for instance, have sought predictive power using a few key variables.<sup>66</sup> Bruce Bueno de Mesquita is renowned for generating predictions of international political developments for private clients, using somewhat proprietary models.<sup>67</sup>

In the climate security arena, a couple of studies have attempted to make more precise projections of future implications based on historical analogues. We group these studies under the label of forecasting/projections, recognizing that scenario analysis, discussed below, is also sometimes bundled under the broader label of forecasting.<sup>68</sup> Here, we reference forecasting in a narrower sense to encompass quantitative models of the future. One finds at least two notable examples of such work in the climate security arena.

First, in a special issue of the journal *Political Geography* in 2007, Cullen Hendrix and Sarah Glaser, like their peers, use historical analogues—rainfall totals and rainfall change from the previous year—to determine whether or not those variables historically have been correlated with the onset of violent conflict in sub-Saharan Africa. The implication is that if climate change leads to alterations in total rainfall and/or rainfall variability (and those have been found to be correlated with the onset of violent conflict), then climate change would make violent conflict more likely. However, they found statistical support only for their “trigger” variable of rainfall change correlating with conflict onset in the period 1981–2002 rather than their “trend” variable of rainfall totals. Hendrix and Glaser extended their research by using climate models to ascertain the direction of future inter-annual rainfall variability as well as projected trends in long-run rainfall by the end of the twenty-first century. Recognizing that their findings might reflect the particular operationalization of rainfall variability, they conclude that “our inability to detect widespread significant trends in rainfall triggers does not suggest a future increase in civil conflict in Sub-Saharan Africa resulting from our measure of interannual rainfall variability.”<sup>69</sup> In their

article, they merely seek to understand the potential direction of future change; unlike other approaches discussed below, they shy away from estimating the magnitude of effects on the future incidence of armed conflict.

As we note in the section on vulnerability assessments and Africa, below, this nonfinding may arise from Hendrix and Glaser's use of annual rather than seasonal rainfall data as well as the idiosyncrasies of the particular global circulation model they employ from the National Center for Atmospheric Research, which may be less accurate for Africa and possess less region-specific spatial resolution than desirable. Their work points to the challenges of extrapolating from uncertain physical models of climate change the future security consequences of such change, even in a general sense of an up-or-down indicator in the incidence of conflict. In this case, their conservative judgment that they could not find strong patterns of future inter-annual rainfall variability reflects an appreciation of the uncertainties in the physical models of climate change as well as conflict models.

Other scholars have issued more specific quantitative projections of the incidence of future conflict resulting from climate change. For example, in their econometric work on temperature and conflict incidence/onset in sub-Saharan Africa, Marshall Burke and colleagues find a correlation between historic increases in temperature and conflict incidence/onset over the period 1981–2002. Using projections of future temperature increases, the authors calculate that the subcontinent would experience a 54 percent rise in armed conflict by 2030 under their model specifications. They then suggest if the death rate of future civil wars is the same as that of historic civil wars, the conflict-specific mortality from these future conflicts would amount to a cumulative 393,000 battle deaths by 2030. In so doing, they make a number of assumptions about future states of the world in terms of nonclimatic indicators known to contribute to conflict, such as regime type and economic dynamics—namely that per capita economic growth and democratization increase linearly at the same rate as during the period 1981–2002.<sup>70</sup> Future rates of civil war mortality may depart dramatically from historic rates, and democratization and economic growth may not change as uniformly as the authors project.

Although one can question the likeliness of these assumptions, scholars have registered other criticisms about the approach with respect to their argument, the historical evidence, and the correlation between temperature

change and the onset of civil war. As Buhaug argues, the findings may not be robust to alternative specifications of the statistical model. Extending the model beyond the study's time frame would likely yield different results since the number of conflicts in Africa declined after 1999 (with a temporary and slight uptick after 2005). In addition, the model includes few of the political and economic controls that the wider field of armed conflict typically employs, such as inflation, measures of ethnic political marginalization, rough terrain, and distance from the capital city—factors that might confirm or refute the explanation by Burke and others of the causal link between climate change and conflict. Moreover, the authors attribute the connection to the effects of agriculture on economic welfare, but the causal chain from temperature increase to declining agricultural yields to economic decline to conflict onset remains fuzzy.<sup>71</sup> A stronger defense of the argument would examine some country cases in their data set to show that the implicit causal chain actually reflects a series of events that precipitated conflict.<sup>72</sup> Although predictive models for security outcomes remain an aspirational goal, the uncertainties of climate models, coupled with the poorly understood nature of the security consequences that could emanate from them, make the sorts of projections by Burke and others more difficult to defend.

### *Scenarios*

Though sometimes grouped under the broader rubric of forecasting, scenario analysis offers an alternative approach for anticipating the future security consequences of climate change. Scenarios are narratives of a plausible future sequence of events, based on a set of assumptions. Typically employed to force decision makers in a corporate or policy setting to prepare for unexpected surprises that might not follow from current trends, they seem especially helpful for problems characterized by high uncertainty. Unlike forecasting and projection models, scenario analysis depends much less on numbers, relying more on expert opinion about the most plausible possibilities for future states of the world. Given a narrative and set of assumptions, participants in a scenario-planning exercise typically explore questions about the driving forces that could have gotten them to that stage, how well their institution is designed to cope with such a situation, and what structural changes in the organization and broader policy environment might make the institution more responsive to this and other problems. In other set-



tings, the participants themselves generate scenarios. For example, different groups—often four of them—frequently receive derivatives of a single scenario, with alterations in the assumptions, leading to disparate sequences of events. The participants are asked to suspend their disbelief about the nature of the assumptions and simply react to the scenario they have before them, as if it could have happened.<sup>73</sup>

Scenarios have limited acceptance in political science but wider acceptance in the business community. They are ubiquitous in the climate science realm, where projections of future climate change are predicated upon different assumptions about economic growth and greenhouse gas emissions over the course of the twenty-first century. In the climate security community, scenarios have some limited application, particularly in the policy world. In a widely cited piece commissioned by the Defense Department's Office of Net Assessment, Peter Schwartz and Doug Randall try to assess the consequences for US national security in the event of abrupt climate change. Scientists consider this class of phenomena low-probability events that could possibly occur to switch off or slow down circulation of the Gulf Stream and induce the onset of another ice age, accompanied by likely plummeting of European temperatures.<sup>74</sup>

Jay Gullledge, one of the authors of this article, participated in another effort by the Center for a New American Security and the Center for Strategic and International Studies that examined three future scenarios to assess the security consequences of expected or severe climate change by 2040 or catastrophic climate change by 2100. In that study, "plausibility" rather than "probability" made a scenario worth considering: "Given the uncertainty in calculating climate change, and the fact that existing estimates may be biased low at this time, plausibility is an important measure of future impacts. Under this umbrella of plausibility, potential changes that the IPCC or other assessments may characterize as improbable are considered plausible here if significant uncertainty persists regarding their probability."<sup>75</sup> The National Intelligence Council's 2020 Project provides a third application to the climate security arena, specifying four future states of the world, several of which had to do with climate change and energy systems.<sup>76</sup>

Scenario analysis supplies an important corrective to overreliance on contemporary states of the world for information and guidance about the

future. Purposively identifying potential surprises and thinking through the consequences of unlikely events can help decision makers prepare for rare, unlikely events. However, as George Wright and Paul Goodwin point out, a scenario may not actually shake people out of current mind-sets but merely reinforce them. Moreover, scenarios may fixate the minds of participants on those situations to make them appear more likely than they actually are.<sup>77</sup> Moreover, as Josh Busby, another of the authors of this article, has pointed out, scenarios that rely on the most uncertain and least likely effects of climate change to build a case for security connections may prove less useful than studies that take conservative estimates of the most probable consequences of climate change. If one can identify clear connections between climate change and security outcomes using restrictive assumptions when critics still question the basic science of the problem, then the question becomes a matter of whether it is better to overstate or understate the significance of a problem.<sup>78</sup> In terms of assessing the probable security consequences of climate change, ways of judging the quality of competing narratives remain unclear. Having taken part in a number of scenario exercises, we have found that participants often have trouble suspending their disbelief and spend much of the time questioning the likelihood that we will end up in the scenario's state of the world.

### Vulnerability Assessments and Africa

Vulnerability assessments, another approach to evaluating the potential security consequences of climate change, allow analysts to map the sources of vulnerability spatially. Frequently identified with susceptibility to losses, vulnerability, according to the IPCC's AR4, is "the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity."<sup>79</sup> Such a definition obscures the important social and political determinants of vulnerability that may dramatically exacerbate the human consequences of extreme weather or seismic events, like a Hurricane Katrina or the Haitian earthquake of 2010. In this section, we review the rationale behind vulnerability assessments and briefly explain our methods before discussing the results.

### *Why Vulnerability Assessments?*

In our approach, we capture a static snapshot of long-run vulnerability, approximating what Jericho Burg called “chronic vulnerability” rather than emergent, dynamic processes.<sup>80</sup> Other organizations, like the Famine Early Warning Systems Network, the World Food Programme, and the United Nations, have parallel efforts to document and map emergent vulnerability to drought and famine. Relying on near-real-time data on precipitation, food supplies, crop yields, market prices, and other indicators, these vulnerability diagnoses have a shorter shelf life and are used for short-term prediction and resource mobilization.<sup>81</sup>

We see a different value added by our approach, which utilizes several baskets of sources of vulnerability—physical, demographic, household/community resilience, and governance and political violence.<sup>82</sup> Rather than try to predict a narrowly defined security outcome—violent conflict—or create a suite of scenarios that observers may challenge as unlikely, we aim to identify the persistent sources of vulnerability from diverse perspectives that may make particular places less able to cope with climate change. The goal is not simply to show that Ethiopia, for example, is vulnerable to climate change at the country level, but to indicate which parts of Ethiopia are vulnerable and why. Because our work has a specific climate security focus, we emphasize a particular sort of vulnerability—the likelihood that large numbers of people may die because of exposure to extreme weather events. We are somewhat agnostic about what form the security consequences might take; these may include but are not limited to violent conflict.<sup>83</sup> Our approach uses a weighted index of four baskets to spatially represent sub-national climate security vulnerability using the mapmaking tools of ArcGIS software. Doing so enables analysts to identify “hot spots” of long-term vulnerability and thereby narrow the areas of concern, both for “ground-truthing” the maps (during which analysts conduct field work to compare the validity of vulnerability maps developed in the computer lab with local expert opinion) and for guiding policy interventions to the priority areas of key concern.

### *Survey of Methods*

Like the historical analogue work, our vulnerability assessments in their first incarnation largely relied on historical data—on the incidence of exposure to

climate-related hazards, on population density, on household and community resilience (using health and education indicators), and on governance and political violence (using statistics from the World Bank and other outlets). We weighted each basket equally, and each one had a number of subindicators indicative of underlying phenomena that we thought relevant to a country's overall vulnerability based on a review of the literature and deductive logic (see the table below).

Although subnational-level data were not available for every indicator, we aimed for broad representation of diverse sources of vulnerability and natural routes of response to the physical manifestation of climate change, beginning at the individual and community level and proceeding to the governmental level where the severity of the climate event overcomes local capacities for self-protection. To make these indicators and baskets comparable, we converted each one into a quintile of relative vulnerability and compared countries and subnational units in Africa against all values for that given indicator in Africa. Consequently, a country or subnational unit might appear secure because it ranks highly within Africa even though its status relative to the rest of the world might remain poor. Our composite of

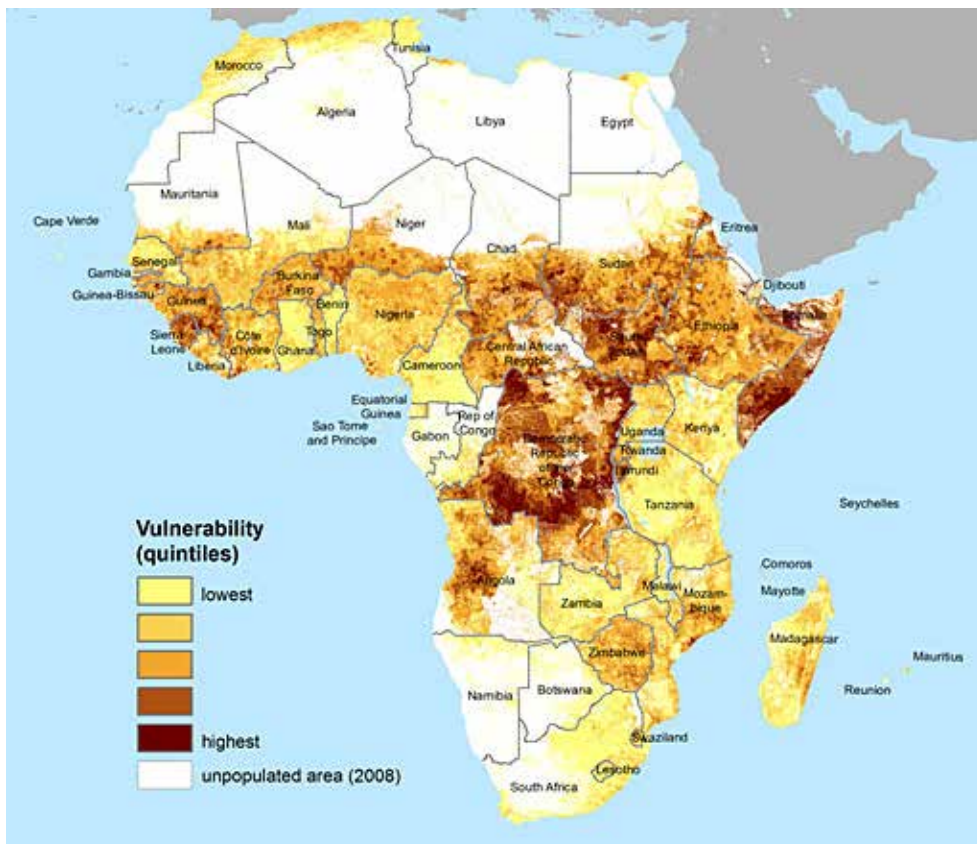
**Table. Index of vulnerability to climate change**

<b>Basket of Climate-Related Hazard Indicators</b>		
<b>Hazard Type (weight)</b>	<b>Data Source</b>	<b>Years of Data Used</b>
Cyclone Winds (.16)	United Nations Environment Programme / Global Resource Information Database (UNEP/GRID)–Europe	1975–2007
Floods (.16)	UNEP/GRID–Europe	1999–2007
Wildfires (.16)	UNEP/GRID–Europe	1997–2008
Aridity (Coefficient of Variation) (.16)	UNEP/GRID–Europe	1951–2004
Droughts (.16)	Global Precipitation Climatology Center	1980–2004
Inundation (Coastal Elevation) (.16)	Digital Elevation Model from the US Geological Survey	1996
<b>Population-Density Basket</b>		
<b>Indicator (weight)</b>	<b>Data Source</b>	<b>Years of Data Used</b>
Population Density (.25)	The population density indicator utilized the LandScan (2008) High Resolution Global Population Data Set copyrighted by UT-Battelle, LLC, operator of Oak Ridge National Laboratory under contract no. DE-AC05-00OR22725 with the United States Department of Energy.	2008

**Table (continued)**

<b>Basket of Community and Household Resilience Indicators</b>			
<b>Variable (weight)</b>	<b>Indicator (weight)</b>	<b>Data Source</b>	<b>Years of Data Used</b>
Education (.25)	Literacy rate, adult total (% of people ages 15 and above) (.125)	World Development Indicators (WDI)	2008; 2007 for Burkina Faso; 2006 for Algeria, Egypt, Mali, and Senegal; 2005 for Niger; no data for Djibouti, Republic of the Congo, or Somalia
	School enrollment, primary (% gross) (.125)	WDI	2006–9; 2004 for Gabon
Health (.25)	Infant mortality rate adjusted to national 2000 United Nations International Children's Emergency Fund (UNICEF) rate (.125)	Center for International Earth Science Information Network (CIESIN)	1991–2003
	Life expectancy at birth (years) both sexes (.125)	WDI	2008
Daily Necessities (.25)	Percentage of children underweight (more than two standard deviations below the mean weight-for-age score of the National Center for Health Statistics / Centers for Disease Control and Prevention / World Health Organization international reference population) (.125)	CIESIN	1991–2003
	Population with sustainable access to improved drinking water sources (%) total (.125)	US Agency for International Development Demographic and Health Surveys; UNICEF Multiple Indicator Cluster Surveys; WDI	Department of Human Services 2000–2008; Multiple Indicator Cluster Survey 2005–6; WDI 2008 for Algeria, Botswana, Cape Verde, Comoros, Eritrea, Mauritius, and Tunisia; WDI 2005 for Equatorial Guinea; WDI 2000 for Libya
Access to Health Care (.25)	Health expenditure per capita (current US dollars) (.125)	WDI	2007; 2005 for Zimbabwe; no data for Somalia
	Nursing and midwifery personnel density (per 10,000 population) (.125)	WDI	2004–8; 2003 for Lesotho; 2002 for Kenya
<b>Basket of Governance and Political Violence Indicators</b>			
<b>Variable</b>	<b>Indicator (weight)</b>	<b>Data Source</b>	<b>Years of Data Used</b>
Government Responsiveness	Voice and accountability (.2)	World Governance Indicators	2007, 2008, 2009
Government Response Capacity	Government effectiveness (.2)	World Governance Indicators	2007, 2008, 2009
Openness to External Assistance	Globalization index (.2)	KOF Index of Globalization	2009
Political Stability	Polity variance (.1)	Polity IV Project	1999–2008
	Number of stable years (as of 2008) (.1)	Polity IV Project	1855–2008
Presence of Violence	Battles and violence against civilians (.2)	Armed Conflict Location and Events Data Set	1997–2009

climate vulnerability yielded a map that brings the confluence of all four baskets together and shows a number of hot spots of high climate-security vulnerability, including parts of Somalia; South Sudan; the Democratic Republic of the Congo; and pockets in Ethiopia and Chad, among other areas (fig. 6).



**Figure 6. Composite vulnerability in Africa: Climate-related hazard exposure, population density, household and community resilience, and governance and violence.** (Data from World Bank Governance Indicators; Polity IV Project: Political Regime Characteristics and Transitions; KOF Index of Globalization; Armed Conflict Location and Event Data; World Health Organization; World Development Indicators; Food and Agriculture Organization of the United Nations Food Security Statistics; UNICEF Multiple Indicator Cluster Survey; Demographic and Health Surveys; United Nations Environment Programme / Global Resource Information Database–Europe; Global Precipitation Climatology Center; Digital Elevation Model from the US Geological Survey; LandScan; and Center for International Earth Science Information Network. Map by Kaiba White, Climate Change and African Political Stability Program, August 2011.)

The challenge of such vulnerability work lies in assessing the external validity of the model weights. Our vulnerability model is not based on an underlying econometric model.<sup>84</sup> Data availability issues have complicated a research strategy based on statistical modeling. Our indicators combine national and subnational data, with different indicators from different years. In addition, our model seeks to identify hot spots of climate-security vulnerability, including but not limited to conflict. Thus, even if data were available to create a data set (and we are actively developing one), we would have some difficulty identifying the appropriate dependent variable.

To address questions about the adequacy of our approach, we have undertaken a variety of strategies to assess the validity of the model, including (1) fieldwork to ground-truth our maps with local expert opinion, (2) sensitivity analysis to see how our maps change with different model weights, (3) demonstration of the value added by additional baskets and indicators through the use of difference maps, (4) comparison of our findings of historic vulnerability with climate model projections of future exposure to climate change, and, data willing, (5) development of an econometric model to test the validity of our model weights.

Our composite vulnerability work already reflects the input based on fieldwork in southern and eastern Africa. In particular, we added an indicator of chronic water scarcity (the coefficient of variation) to capture arid lands that have historically proven quite vulnerable to changing weather conditions, in a way that our drought indicator—based on the Standardized Precipitation Index—simply did not capture. Elsewhere, we have presented sensitivity analysis reflecting changes in model weights as well as difference maps that show the value added by household and governance indicators compared to simpler maps of physical exposure and population.<sup>85</sup> The econometric model is a work in progress.

The extension in this article explicitly encompasses future climate change by using ensemble averages from five global climate models. We wish to compare the incidence of historical climate-related exposure with projections of future climate change to see how our representations of future vulnerability differ from those of the past. To the extent that areas vulnerable historically remain so in the future, we can have more confidence in where to guide fieldwork and resources. As was the case with our previous

research, we see this effort as a proof of concept to be refined with better data and methods as the work progresses.

In this article, we intended to make use of readily available data from existing global climate models to assess whether or not historical incidence of exposure to climate hazards overlaps with areas likely to experience changes in rainfall. These models suffer from a number of limitations. For large parts of Africa, significant disagreement exists among climate models about the probable consequences of climate change. Most global climate models have trouble replicating climate patterns at more fine-grained resolution because of problems with taking into account local variation in topography, bodies of water, and so forth, that may create microclimates. For this reason, we have partnered with climate modelers from the University of Texas to develop a regional climate model for Africa that does a better job of validating the continent's weather patterns—that is, a model which, with minimum error, can replicate historical climate patterns in terms of annual precipitation and the seasonality and location of major rainfall events.<sup>86</sup> Like the econometric model, this effort is a work in progress.

In the meantime, our partners provided data for five global climate models that they considered reasonably valid for Africa: CGCM3.1, ECHAM5\_MPI-OM, GFDL-CM2.0, MIROC3.2\_MEDRES, and MRI-CGCM\_2.3.2. Each included data from 1981 through 2000 for the 20c3m (the “20c” is for 20th century) experiment and data from 2041 through 2060 for the IPCC A1B emissions scenario.<sup>87</sup>

To demonstrate the promise of this approach, we generated continent-wide projections for seasonal precipitation change for the A1B emissions scenario for the year 2050, compared to that for 1990 (both 2050 and 1990 rely on 20-year rolling averages—2041–60 and 1981–2000, respectively). Whereas Hendrix and Glaser assessed changes in total rainfall, comparing contemporary rainfall patterns with those in 2100, we focused more on short-term projections, based on time horizons that policy makers might consider more relevant. Moreover, our coverage is continent-wide rather than confined to sub-Saharan Africa. In addition, we computed our precipitation totals based on only the months with the most rainfall, which vary by region (fig. 7). We did this to try to evaluate changes in rainfall during the growing season as currently known. The start date and duration of planting seasons change, so it is important to know if the rains are pro-

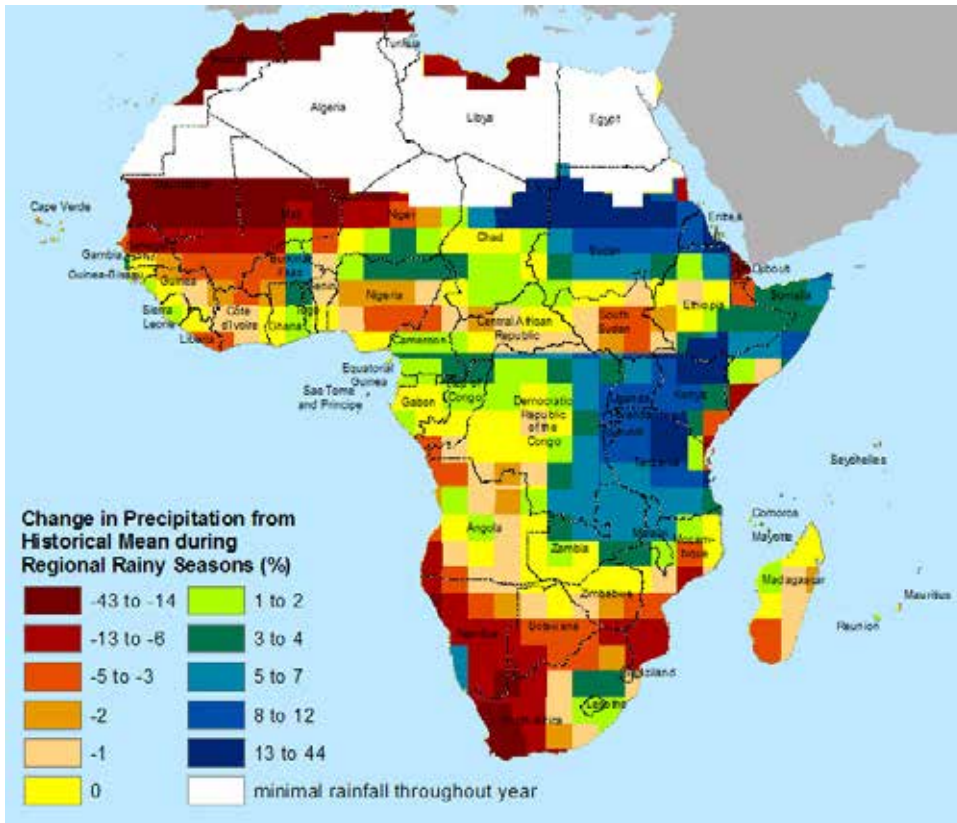


jected to fall in the same quantities during the growing season. If we used annual data and if rainfall went up in some months and down in others, the annual average over the course of the year might remain unchanged. We believe that changes in rainfall during the planting season will be more disruptive to agricultural planning and food security than annual variations in rainfall.



**Figure 7. Historical seasonal rainfall regions in Africa.** (Data from US Geological Survey Global Geographic Information System Database: Digital Atlas of Africa [monthly precipitation data]. Map by Kaiba White, Climate Change and African Political Stability Program, August 2011.)

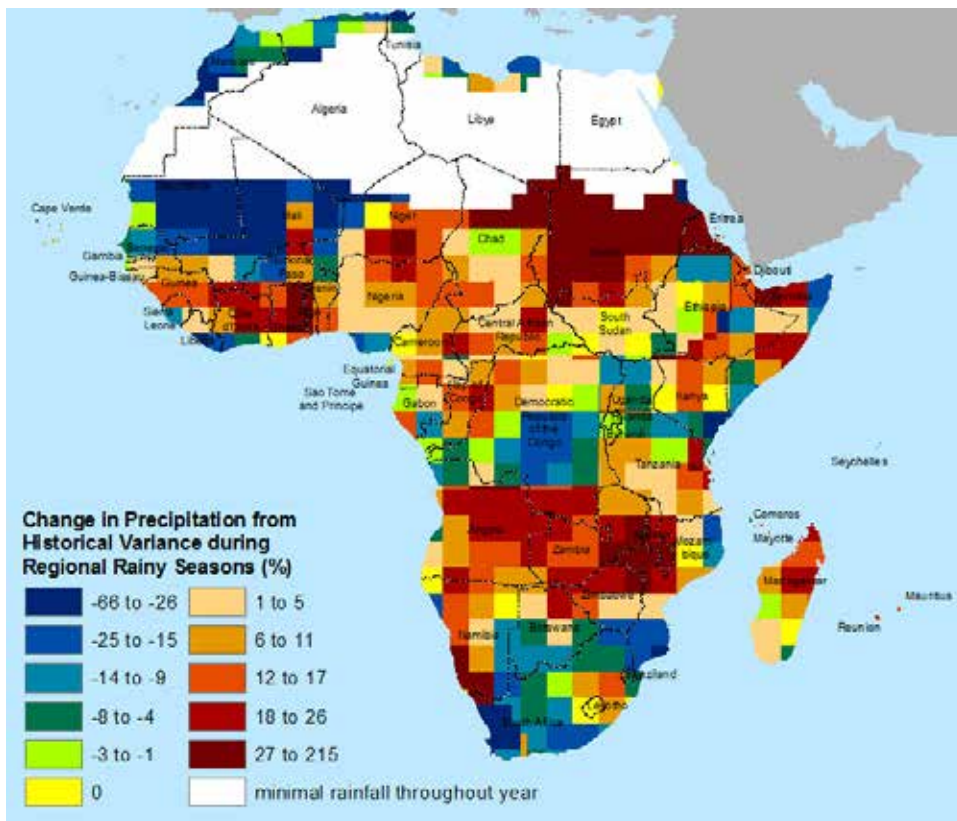
When we utilize this regional seasonal rainfall map to calculate projected changes in precipitation, we generate figure 8. This map suggests that north Africa, the western Cape, and parts of the Sahel are particularly likely to ex-



**Figure 8. Projected change in precipitation quantities for seasonal rains in Africa (scenario A1B, 2041–60).** (Data from five different Coupled Model Intercomparison Project, Phase 3 (CMIP3) IPCC AR4 atmosphere-ocean general-circulation models (AOGCM): CGCM3.1, ECHAM5\_MPI-OM, GFDL-CM2.0, MIROC3.2\_MEDRES, and MRI-CGCM\_2.3.2. See “Historical seasonal rainfall regions in Africa” map [fig. 7] for rainy season timing. Map by Kaiba White, Climate Change and African Political Stability Program, October 2011.)

perience declines in rainfall, with much of east Africa as well as portions of west Africa experiencing an increase in the amount of seasonal rainfall.

We used these same data to map projected change in the variance of rainfall across the continent during the historical rainy months (fig. 9). This measure seeks to assess the volatility of future rainfall, based on the multi-model ensemble of projections for midcentury. The models project increasingly volatile rainfall across much of Sudan, parts of Somalia, Angola, Zambia, and Zimbabwe, while other areas—the Mediterranean coastline, pockets of west Africa, the Democratic Republic of the Congo, and much of South



**Figure 9. Projected change in precipitation variance for seasonal rains in Africa (scenario A1B, 2041–60).** (Data from five different CMIP3 IPCC AR4 AOGCMs: CGCM3.1, ECHAM5\_MPI-OM, GFDL-CM2.0, MIROC3.2\_MEDRES, and MRI-CGCM\_2.3.2. See “Historical seasonal rainfall regions in Africa” map [fig. 7] for rainy season timing. Map by Kaiba White, Climate Change and African Political Stability Program, October 2011.)

Africa—will experience less volatile rains, if these model projections are correct. This measure of seasonal rainfall is relatively crude and does not account for the possibility of changes in the seasonality of rainfall.

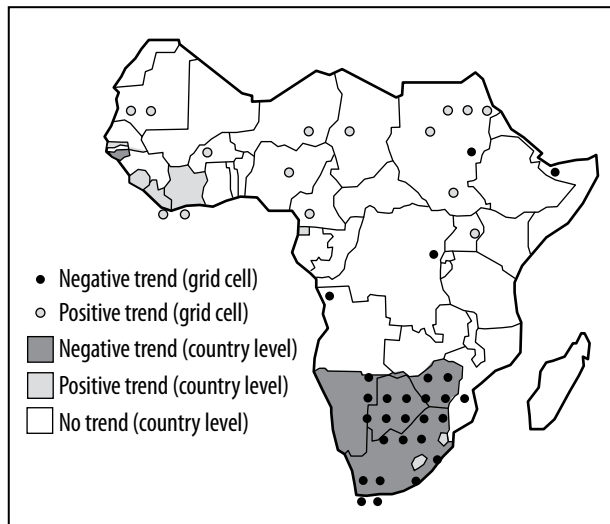
We consider these results provisional since they represent model output from five global climate models known to perform relatively poorly at the local level, especially in Africa. Our map of seasonal planting cycles, based on a preliminary review of the months of highest rainfall, is also fairly crude. Nonetheless, we are heartened that the results here mirror the regional patterns discussed in other studies, including the negative trend for rainfall in southern Africa in Hendrix and Glaser’s study as well as the

application of model output from a study by Claudia Tebaldi and colleagues using more multiensemble methods (figs. 10 and 11).<sup>88</sup> Consistent with the two other studies, our work also shows increased rainfall over much of east Africa.

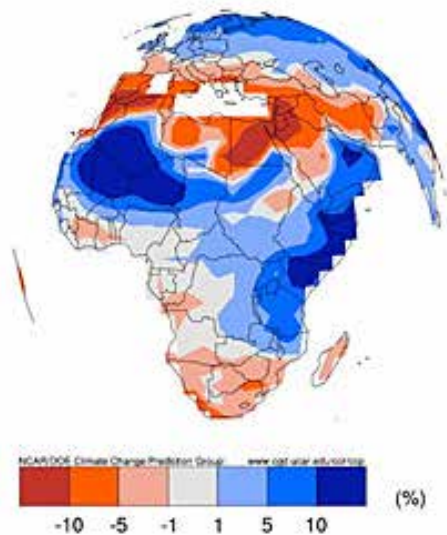
How do our projections of future exposure to climate change compare to historical climate-related hazard exposure? Obviously, projected change in precipitation is but a single indicator and does not include the full suite of hazards in our climate hazard basket. Nonetheless, projections of significant negative percentage changes in rainfall most closely match our measures of drought (fig. 12) and the coefficient of variation (fig. 13). They are not perfect measures. More rainfall in some places could reflect increased likelihoods of floods rather than enhanced agricultural potential. In our collaborative work with climate modelers at the University of Texas, we are developing a variety of indicators that more closely approximate flooding, drought events, and heat-wave days. Regardless, for the purposes of this article, when we compare historical exposure to drought (measured by the Standardized Precipitation Index [SPI]) and areas of chronic water scarcity (captured by the coefficient of variation [CV]), we observe some areas of overlap.

Across all four maps (figs. 8, 9, 12, and 13), north Africa has a consistent profile. Climate models project declining rainfall in the future for this region, which has historically experienced significant episodes of drought and a chronic scarcity of water. In two of three maps (figs. 8 and 13), southern Africa has a similar profile in terms of climate projections of decreased precipitation during the rainy season and chronic water scarcity. Other regions show discontinuity. East Africa and the Horn experience chronic water scarcity but may benefit from additional rains with climate change. With the latter popularly identified as one of the major causes of the current drought in the Horn of Africa but with global climate models projecting increased rainfall over most of east Africa, this difference between historical exposure and projections bears further scientific scrutiny.

Rainfall changes on their own are not fully dispositive of water-access issues. A parallel vulnerability effort by Marc Levy and colleagues has performed similar analysis. Looking at projections of sea-level rise, an increase in aggregate temperature, and water scarcity, they incorporate a number of political/governance variables, including a country's crisis history, the degree

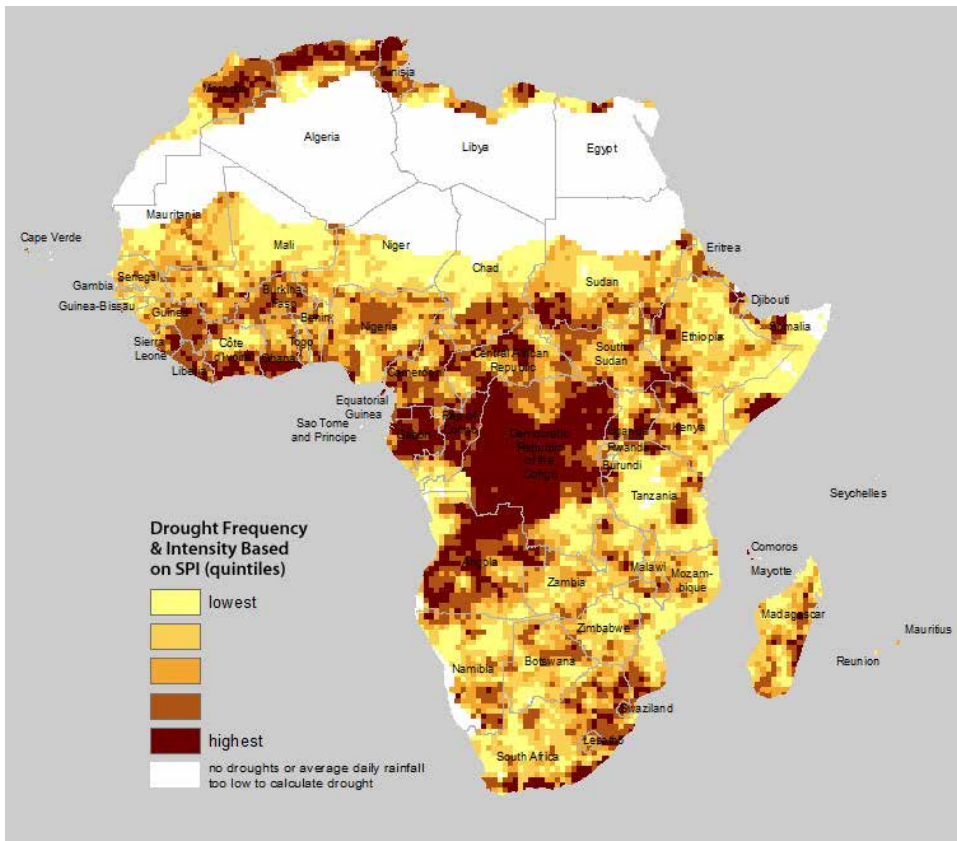


**Figure 10. Hendrix and Glaser’s rainfall trends projection: Effects of spatial aggregation on total annual rainfall estimates, 2000–2099, scenario A1B.** (From Cullen S. Hendrix and Sarah M. Glaser, “Trend and Triggers: Climate Change and Civil Conflict in Sub-Saharan Africa,” *Political Geography* 26, no. 6 [August 2007]: 710.)



**Figure 11. Tebaldi rainfall change projection: IPCC A1B, precipitation, 1990–2030.** (From the National Center for Atmospheric Research / Department of Energy Climate Change and Prediction Group, [http://www.cgd.ucar.edu/ccr/climate\\_change\\_gallery\\_test/pr.africa.htm](http://www.cgd.ucar.edu/ccr/climate_change_gallery_test/pr.africa.htm).)





**Figure 12. Drought frequency and intensity in Africa, 1980-2004.** (Data from Global Precipitation Climatology Center. Map by Kaiba White, Climate Change and African Political Stability Program, November 2011.)

of violence in its neighborhood, and its capacity. Of particular interest is the final physical indicator—water scarcity—which would reflect the importance we might attach to countries like Egypt with low total rainfall but reliant on runoff or river systems with distant origins. Because our rainfall data excludes the low rainfall areas in the Sahara extending over to Egypt, we probably omit an area of high population and potentially high climate vulnerability.<sup>89</sup> We certainly need a corrective for Egypt with additional indicators of future climate vulnerability.



the scholarly community as well as among policy makers. Though hard to disentangle from other causes, the effects of climate change already are upon us, suggesting that we may soon have some additional evidence that allows us to evaluate the usefulness of our maps.

## Notes

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83. For a more extended discussion of the rationale and methods, see Busby, White, and Smith, *Locating Climate Insecurity*; and Busby et al., “Locating Climate Insecurity.”

84. For two similar approaches to composite climate-vulnerability mapping that share a similar approach, see the work of the South Africa-based One World Sustainable Investments (<http://www.oneworldgroup.co.za/projects/climate-change/southern-african-regional-climate-change-programme-rccp/>) and the London-based Maplecroft (<http://maplecroft.com/themes/cc/>). For an approach to climate-vulnerability mapping based on an econometric model, see David Wheeler, *Quantifying Vulnerability to Climate Change: Implications for Adaptation Assistance*, Working Paper 240 (Washington, DC: Center for Global Development, 24 January 2011), [http://www.cgdev.org/files/1424759\\_file\\_Wheeler\\_Quantifying\\_Vulnerability\\_FINAL.pdf](http://www.cgdev.org/files/1424759_file_Wheeler_Quantifying_Vulnerability_FINAL.pdf).

85. See Busby, White, and Smith, *Locating Climate Insecurity*.

86. Our collaborators include Kerry Cook ([http://www.jsug.utexas.edu/researcher/kerry\\_cook/](http://www.jsug.utexas.edu/researcher/kerry_cook/)) and Edward Vitz (<http://www.ig.utexas.edu/people/staff/ned/>) from the Jackson School of Geosciences.

87. CGCM3.1 is a third-generation coupled global climate model from the Canadian Centre for Climate Modelling and Analysis. ECHAM5\_MPI-OM, developed at the Max Planck Institute for Meteorology, couples a climate model and an atmospheric general-circulation model (ECHAM5) with an MPI-OM ocean-sea ice component. GFDL CM2.X (Geophysical Fluid Dynamics Laboratory Coupled Model, version 2.X), developed at the National Oceanic and Atmospheric Administration Geophysical Fluid Dynamics Laboratory, is a coupled atmosphere-ocean general-circulation model (AOGCM). MIROC3.2\_MEDRES is a coupled model from Japan's Center for Climate System Research (University of Tokyo), the National Institute for Environmental Studies, and the Frontier Research Center for Global Change (JAMSTEC). MRI-CGCM\_2.3.2 is another Japanese model from the Meteorological Research Institute, Japan Meteorological Agency, Japan.

88. Tebaldi et al., "Going to the Extremes," 185–211. For the application of Tebaldi to a shorter time-horizon, see Lawrence Buja and Julie Arblaster, "A Climate Change Gallery: Changes in Key Climate Means and Extremes between 1990's and the 2030's," accessed 25 April 2012, [http://www.cgd.ucar.edu/ccr/climate\\_change\\_gallery\\_test/](http://www.cgd.ucar.edu/ccr/climate_change_gallery_test/).

89. Marc A. Levy et al., *Assessment of Select Climate Change Impacts on U.S. National Security* (New York: Center for International Earth Science Information Network, Columbia University, 1 July 2008), [http://www.ciesin.columbia.edu/documents/Climate\\_Security\\_CIESIN\\_July\\_2008\\_v1\\_0.ed.pdf](http://www.ciesin.columbia.edu/documents/Climate_Security_CIESIN_July_2008_v1_0.ed.pdf).

# Using the Air Force against Civil Aircraft

## From Air Terrorism to Self-Defense

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**A**ir terrorism, as witnessed by the world during the attacks of 11 September 2001 (9/11), raises the issue of the type of defense that a state can reasonably utilize against such strikes. That is, within which legal framework may the affected state respond? How can a country use its air arm to suppress the threat represented by a civil aircraft hijacked by terrorists? On 9/11 “air law suddenly entered the twenty-first century.”<sup>1</sup> This new form of air terrorism represented a watershed in the history of aviation.<sup>2</sup> From this moment forward, a civil aircraft could become a weapon of mass destruction and serve international hyperterrorism, a development that raises new issues about how to respond—specifically, the use of armed force against a civil aircraft. Can a state order military personnel to shoot down an aircraft used for purposes obviously incompatible with civil aviation? This situation creates an impossible choice between the passengers’ lives and the country’s vital interests threatened by the hijacked aircraft. Rather than offer a discussion about resorting to armed force, which in itself constitutes a dilemma, this article seeks to consider its legitimization from a legal standpoint. Indeed, international law prohibits any use of armed force against a civil aircraft. This principle, which impedes the exercise of sovereignty in the airspace, protects passengers—but when the aircraft becomes a weapon used by terrorists, this change in status makes possible an armed response by the attacked state.

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## Protecting Civil Aircraft against Unlawful Interventions That Target Civil Aviation

The international collective security system is based on the prohibition of resorting to force. This rule of contemporary international law applies first to interstate relations. Yet it affects the legal framework of the use of airpower, which cannot be deployed against civil aviation, whose safety and protection remain the responsibility of the state. However, when an aircraft jeopardizes a state's sovereignty over its airspace, that country can take a number of coercive measures to stop the security breach.

### *Protection Based on Considerations of Humanity*

Protecting civil aircraft against armed force is a principle of international law intended to apply only in certain situations.

**Protection guaranteed by international law.** The prohibition of armed force against civil aircraft follows an international norm. Until 1928 the use of force was a natural component of the state's sovereignty. That year, the Kellogg-Briand Pact became the first convention to establish the nonuse of force as a principle regulating international relations, a rule taken up by the Charter of the United Nations (UN) and upheld by the International Court of Justice (ICJ).<sup>3</sup> Most of the legal theory thus considers the nonuse of weapons a peremptory norm of international law, also called *jus cogens*.<sup>4</sup> This principle has an impact on civil aviation to the extent that a state may not use armed force against a commercial aircraft. An addendum to Article 3 of the Chicago Convention of 7 December 1944 establishes this specific protection: "The contracting States recognize that every State must refrain from resorting to the use of weapons against civil aircraft in flight and that, in case of interception, the lives of persons on board and the safety of aircraft must not be endangered."<sup>5</sup>

The UN General Assembly took up this precept by asking all states to take the necessary steps to avoid incidents involving attacks on civil aircraft that accidentally stray from their fixed route.<sup>6</sup> Similarly, the International Civil Aviation Organization (ICAO) on several occasions has upheld the principle of protecting civil aircraft: "The Assembly . . . condemns all acts of violence which may be directed against aircraft, aircraft crews and passengers engaged in international air transport."<sup>7</sup> The ICAO denounces any unlawful intervention against a civil aircraft on the following basis: "In keeping

with elementary considerations of humanity, the safety and the lives of persons on board civil aircraft must be assured.”<sup>8</sup> Further, the UN Security Council’s Resolution 1067 “condemns the use of weapons against civil aircraft in flight as being incompatible with elementary considerations of humanity, the rules of customary international law as codified in [the addendum to] article 3 of the Chicago Convention.”<sup>9</sup> The ICJ thus holds that “elementary considerations of humanity, even more exacting in peace than in war,” are not simple moral dictates but general principles of international law.<sup>10</sup> Additionally, in order to make the principle of nonuse of weapons more effective, the Chicago Convention provides for launching an investigation in case of the destruction of a civil aircraft.<sup>11</sup> The scope of the addendum to Article 3 of the Chicago Convention, however, is limited to a specific framework.

**Scope of the addendum to Article 3 of the Chicago Convention.** The Chicago Convention provides protection intended to apply not only to civil aircraft flying legally in a state’s airspace but also to aircraft that contravene the rules of overflight.<sup>12</sup> Despite the infraction, the aircraft must enjoy the protection afforded by the ban on the use of weapons against it. Indeed, several types of dysfunctions can explain such a violation, irrespective of any malice. The hypothetical case considered by the addendum to Article 3 concerns the interception of an aircraft that intrudes upon a state’s airspace because of a material error but shows no hostility. In practice, civil aviation deplores the destruction of rogue but not willfully aggressive aircraft. For example, on 27 July 1955, Bulgarian fighter aircraft shot down an El Al Israel Airlines aircraft flying from London to Israel that had gotten lost over Bulgaria; none of the passengers survived.<sup>13</sup> On 21 February 1973, a Libyan airliner operating on the Tripoli-to-Cairo route mistakenly entered the airspace over territories occupied by Israel and flew over military facilities; intercepted by Israeli fighters, it crashed on landing, killing 108.<sup>14</sup> On 20 April 1978, a South Korean aircraft operating on the Paris-Anchorage-Seoul route mistakenly flew over a strategic area off limits to civil air traffic; Soviet fighter aircraft intercepted the airliner and shot it down north of the USSR. The same scenario unfolded in 1983: a Boeing 747 of Korean Airlines carrying 269 passengers was shot down in the USSR’s airspace over the Sea of Japan while flying over a military area of utmost importance to Soviet defense forces. Soviet fighters intercepted the aircraft, hitting it with



an air-to-air missile; there were no survivors. An investigation conducted by the ICAO concluded that the aircraft had in fact violated Soviet airspace but condemned the USSR's excessive use of force.<sup>15</sup>

Finally, the protection of civil aircraft applies in a state's airspace as well as in international airspace.<sup>16</sup> After Cuban fighters accidentally shot down two American Cessnas on 24 February 1996, the ICAO confirmed in its report that "[the addendum to] Article 3 . . . and the ICAO provisions concerning interception of civil aircraft apply irrespective of whether or not such aircraft is within the territorial airspace of that State."<sup>17</sup> The principle of nonuse of armed force against civil aircraft does not mean that the latter cannot be subjected to measures intended to preserve a state's sovereignty over its airspace.

### *Acting against Offending Civil Aircraft*

A state that suffers a violation of its airspace by a civil aircraft need not remain helpless. The principle of sovereignty over airspace gives it the right to act in order to stop the intrusion. However, authorized measures are narrowly defined and do not allow actions that may endanger the lives of passengers.

**The principle of sovereignty over airspace.** The state's sovereignty over its territorial airspace and territorial waters represents an established principle of customary international law. The Chicago Convention confirmed the Paris Convention of 1919, the first multilateral agreement on airspace regulation to recognize the principle of sovereignty over airspace: "The contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory."<sup>18</sup> In the absence of conflicting contractual obligations, the state is free to regulate and even prohibit flying over its territory; any unauthorized flight represents an offense against the subjacent state's sovereignty, as confirmed by the ICJ: "The principle of respect for territorial sovereignty is also directly infringed by the unauthorized overflight of a State's territory by aircraft belonging to . . . the government of another State."<sup>19</sup>

In international law applicable to civil aviation, the principle involves the closing of the airspace: "In the airspaces above State territories, there are only capacities that actually are controlled liberties and are implemented within the framework of the subjacent State's sovereignty to which they must adjust."<sup>20</sup> The French Code of Civil Aviation stipulates that "foreign-

flag aircraft may only fly over French territory if that right is granted to them by a diplomatic convention or if they are given for that purpose an authorization which must be specific and temporary.”<sup>21</sup> In accordance with the principle of sovereignty over airspace, the state may designate the flight paths and altitudes that aircraft must adhere to in their flight plan.<sup>22</sup> Similarly, even in time of war, each state is free to enact rules that govern the access, movements, or stay of aircraft. Thus, the French Air Force has the mission of enforcing the integrity and sovereignty of its airspace around the clock.<sup>23</sup> It does so by utilizing a system of *mesures actives de sûreté aérienne* (air-safety active measures), which allows reaction to an unlawful intrusion into French airspace.<sup>24</sup> To enhance air cover around its territory, France signed cross-border air-safety agreements with most of its European neighbors.<sup>25</sup> The acknowledged powers of public authorities within the state’s airspace permit them to take the necessary steps to guarantee air and territorial safety.

**Measures authorized in case of airspace violation.** Several provisions of the Chicago Convention deal with violation of a state’s sovereignty over its airspace:

Every State, in the exercise of its sovereignty, is entitled to require the landing at some designated airport of a civil aircraft flying above its territory without authority or if there are reasonable grounds to conclude that it is being used for any purpose inconsistent with the aims of this Convention; it may also give such an aircraft any other instructions to put an end to such violations. For this purpose, the contracting States may resort to any appropriate means consistent with relevant rules of international law.<sup>26</sup>

A state may still use force against a civil aircraft acting illegally, provided that such action does not endanger the latter’s integrity. Therefore, it cannot use weapons or open fire to destroy the aircraft, but it may lawfully employ any other measure aimed at stopping the security breach. Authorized coercive means include surrounding the civil aircraft with interceptors, using tracers as a warning, conducting visual or radio interrogation, restricting flight paths, boarding, and firing warning shots when the aircraft refuses to comply. The state must always execute these maneuvers without endangering the safety of the passengers and aircraft. According to the ICAO Council’s special recommendations, interception of a civil aircraft, carried out as a last resort, should be limited to establishing the aircraft’s identity and to providing the navigational guidance necessary to ensure the

flight's safety.<sup>27</sup> The ICAO thus encourages states to standardize their interception procedures regarding civil aircraft to improve safety.<sup>28</sup> Interception may also create a right of hot pursuit when the aircraft that violates overflight rules flees toward international airspace.<sup>29</sup> Only an aircraft of the state can carry out the pursuit, and the operation must not violate another state's sovereignty over its airspace unless the latter gives its express consent.<sup>30</sup> In such a case, the intercepting state may act in the cocontracting state's airspace until boarding the aircraft under pursuit. Finally, the state must initiate pursuit as soon as the violation occurs and must continue uninterrupted. The wording of the addendum to Article 3 indicates that protection of the civil aircraft applies as long as the latter operates in accordance with the purpose served by civil air transport.

### **From Civil Aircraft to Improvised Weapon: Limits of the Protection Guaranteed by the Addendum to Article 3**

Since 9/11 "for the international community as a whole, it is now a matter . . . of preventing as much as suppressing attacks conducted using the most high-performance and sophisticated means of transportation: the civil aircraft which symbolizes the globalization of passenger and cargo traffic."<sup>31</sup> Now that states face this type of attack, the principle of protecting civil aircraft cannot remain absolute. However, a state can base an air attack only on two considerations included in the UN Charter: the principle of self-defense and the threat against international security and peace. Within the framework of the use of armed force against a commercial aircraft hijacked for terrorist purposes, can the state claim self-defense? With what intensity can a state react in self-defense?

#### ***Self-Defense against an Attack***

The addendum to Article 3 of the Chicago Convention in fact includes an exception to the principle of nonuse of armed force since it refers to Article 51 of the UN Charter, which provides for a right of self-defense in case of armed attack.<sup>32</sup> The point has to do with preventing civil aircraft from asserting the ban on the use of force to violate with total impunity states' territorial sovereignty or to engage in activities contrary to the aims of the

Chicago Convention. Resorting to self-defense thus presupposes certain armed attack.

**Armed attack.** Considered a natural right of states, self-defense authorizes the use of armed force in response to an attack, but one must define the term *attack*.<sup>33</sup> According to the UN General Assembly, “Aggression is the use of armed force by a State against the sovereignty, territorial integrity or political independence of another State, or in any other manner inconsistent with the Charter of the United Nations, as set out in this Definition.”<sup>34</sup> More specifically, an attack is “the sending by or on behalf of a State of armed bands, groups, irregulars or mercenaries, which carry out acts of armed force against another State of such gravity as to amount to the acts listed above, or its substantial involvement therein.”<sup>35</sup>

Only a clearly hostile attitude authorizes resorting to self-defense; the problem involves assessing where aggressive behavior starts and where unlawful behavior ends.<sup>36</sup> On the one hand, in the Korean Airlines Boeing case of 1983, mentioned above, the Russians could not put forward this argument. Because the intruding aircraft had committed no act of blatant attack, the USSR should have resorted to conventional interception procedures. On the other hand, in the 9/11 case, the aircraft do indeed represent improvised weapons. However, Article 51 recognizes self-defense only if one state attacks another—not the case with 9/11. Nevertheless, the ICAO clearly denounced the terrorist attacks as contrary to aviation’s goals:

The Assembly . . . strongly condemns these terrorist acts as contrary to elementary considerations of humanity, norms of conduct of society and as violations of international law; declares that such acts of using civil aircraft as weapons of destruction are contrary to the letter and spirit of the Convention on International Civil Aviation . . . and that such acts and other terrorist acts involving civil aviation or civil aviation facilities constitute grave offenses in violation of international law.<sup>37</sup>

In practice, the Security Council embraces an empirical conception of the attack that allows it to extend that description to several hostile acts.<sup>38</sup> By describing terrorism as a threat to international peace and security in its Resolutions 1368 and 1373, the council formally recognized the right to resort to self-defense in response to terrorist acts.<sup>39</sup> If the aircraft is used for purposes contrary to those of civil aviation, such as terrorism, the platform thus exposes itself to the use of armed force.

**Certain attack.** Self-defense allows a military response to an attack, but it must remain exceptional. Only the realization of an attack can justify such action. Thus, international law does not recognize preemptive self-defense, which might indeed encourage states to acquire an arsenal sufficient to ensure an independent defense and prompt an arms race.<sup>40</sup> Nothing in the text of Article 51 of the UN Charter allows one to assert the legitimacy of a preventive action intended to eliminate a threat. However, faced with the dangers of the international environment, some states are trying to resort to the concept of preemptive self-defense to justify armed attacks.<sup>41</sup> The security strategy of the United States expresses well that country's adherence to the doctrine of preemptive self-defense. The latter distinguishes between a possible attack, which does not give the right to self-defense based on Article 51 (preemptive self-defense), and a future attack that authorizes self-defense (preventive self-defense). In the second instance, the risk of attack rests on an obvious will to do harm. In this approach, the determining criterion is the imminence of danger: "So long as the occurrence of the event that must be avoided appears inevitable, nothing justifies a need to delay the reaction at the risk to increase the difficulties and the cost of prevention."<sup>42</sup>

Consequently, after 9/11, President George W. Bush claimed the right to resort to force preemptively against any state or terrorist group threatening the security of the United States. Moreover, Israel attempted to justify in identical fashion two air operations: the 1975 raids on Palestinian camps in Lebanon and the 1981 bombing of the Tuwaitha nuclear center in Iraq. The international community, with the exception of the United States, condemned the legitimacy of those actions.<sup>43</sup> Mexico considered it "inadmissible to invoke the right of self-defense when no armed attack has taken place. The concept of preventive war, which for many years served as justification for the abuses of powerful States, since it left it to their discretion to define what constituted a threat to them, was definitively abolished by the Charter of the United Nations."<sup>44</sup> In 2003 the United States and the United Kingdom attempted to justify their intervention in Iraq by citing the principle of preemptive self-defense, giving as a reason the stockpiling of weapons of mass destruction in that country. The Security Council rejected that line of argument by calling the presence of American and British troops there an occupation.<sup>45</sup> Indeed, the UN secretary-general became alarmed about the drifts that the notion of preemptive self-defense might generate:

“My concern is that, if [this logic] were to be adopted, it would set precedents that [would result] in a proliferation of the unilateral and lawless use of force, with or without justification.”<sup>46</sup>

The main risk involved in the concept of preemptive self-defense entails complete usurpation of the role of the Security Council, which would cause a genuine crisis of the collective security system. Preemptive self-defense rests on a much-too-subjective assessment (will to do harm and imminence of danger) to serve as the foundation of an armed action. To date, no rule of international law would likely validate the thesis of preemptive self-defense; an armed attack remains a precondition.<sup>47</sup> Hostile intrusion into a state’s airspace with the intention of destroying some of that country’s vulnerable points represents a known aggressive act. It is necessary here to dissociate the attack from the damage in order not to mistakenly talk about preemptive self-defense. The attack consists of the violation of the sovereignty over the airspace with intent to harm the state; the harm may not have occurred yet, but that does not condition the action of self-defense.

### *The Action of Self-Defense*

States must inform the Security Council of actions conducted in accordance with self-defense, and the council will then take appropriate steps to restore peace and security.<sup>48</sup> The legality of the measures adopted within the framework of self-defense must be assessed with regard to their necessity and their proportionality to the attack suffered.

**A reaction imposed by necessity.** The action—rather, the reaction—of self-defense must respond to the need to stop an attack. That is, the firing of weapons must stop as soon as the threat disappears; otherwise, according to Article 2 of the UN Charter, we are dealing with unlawful armed reprisals.<sup>49</sup> The rule of necessity is also included in the project on the responsibility of states for internationally wrongful acts, adopted on 31 May 2001 by the International Law Commission.<sup>50</sup> Among the exclusionary clauses of responsibility, the commission makes provision for the state of necessity, which, according to the commission, excludes the illegality of a military action if it represents the only way to protect an essential interest of the state against a grave and imminent danger.<sup>51</sup> The state’s essential interest may appear in several forms: a location with a heavy concentration of civilians, an industrial site that contains hazardous substances, or a site essential to

the population's survival, such as a dam. Reprisals based on the state of necessity are lawful only under certain conditions. Specifically, the state must have failed to obtain satisfaction by means other than force, and it must have issued several unheeded warnings. Finally, the state must not engage in reprisals disproportionate to the unlawful act to which it responds.<sup>52</sup> In the event of a terrorist hijacking of a civil aircraft for the purpose of destroying an industrial site that contains hazardous substances, if France orders its fighters to shoot down the aircraft, it does so because it must act in order to protect the people in its care. Here, necessity appears in the imminence and inevitability of the danger threatening the country. The use of armed force is authorized but conceivable only after other coercive means have run out. It must be the last resort to neutralize the terrorist threat.<sup>53</sup> The latter will demand a clear definition: as soon as the government deems the aircraft an improvised weapon used to cause death and property damage, it establishes the necessity to use armed force. This can apply to a commercial aircraft, a private plane, a fixed- or rotary-wing aircraft, or even a drone.

**The limits of an armed reaction.** Only some legal theorists consider that the state's forces should pursue the attacker until they destroy it. Most of them advocate adoption of a restrictive view of the use of armed force: self-defense measures should only stop the attack and restore order as it previously existed. Therefore the state must limit the response to what is necessary to repel the attack. It must also respect a certain proportionality. That is, the intensity of operations conducted as self-defense depends on that of the attack which prompted them. In several decisions, the ICJ confirmed the principle according to which self-defense is subjected to the dual conditions of necessity and proportionality.<sup>54</sup> Finally, the defensive reaction must occur immediately.<sup>55</sup>

In the event of the hijacking of an aircraft by terrorists, the government may order its destruction only from the time when the decision makers conclude with certainty that the aircraft is about to commit a hostile act. If, after the firing of warning shots, the civil aircraft remains deaf to injunctions, the French prime minister, who is responsible for air defense, may order its destruction.<sup>56</sup> The applicable instructions in France are as follows: destruction of an aircraft that constitutes a grave threat lies within the legal framework of self-defense. However, all European countries do not view the intensity of reaction in self-defense the same way. Germany distanced

itself from other nations in this matter by rejecting any possible destruction of a civil aircraft. On 15 February 2006, the Constitutional Court of Karlsruhe held that

shooting down aircraft when persons who are not involved in the commission of a crime are on board would amount to treating the passengers and crew taken hostages as mere objects and denying to those victims the worth owed to man. . . . Ordering their death as a way to save other lives would represent a deprivation of their rights. Article 1.1 of the Constitutional Law, which guarantees human dignity, makes it inconceivable to intentionally kill people in a desperate situation on the basis of a statutory authorization.<sup>57</sup>

To properly capture Germany's position, one must add a constitutional motive to humanitarian considerations. German constitutional law rules out any intervention by the military on German territory other than offering assistance in case of a natural disaster or major accident and forbids the use of weapons. It does not consider challenging an aggressive civil aircraft an act of territorial defense but an act of internal security in which the military cannot become involved.

The French and German examples illustrate the dilemma confronting governments. Because the aircraft involved is both a means of transportation and an improvised weapon, its destruction becomes an impossible choice. Should protecting the basic interests of a state threatened by a hijacked aircraft take precedence over saving the lives of the passengers? This question cannot be answered in a systematic way: it all depends on the assessment made of the conflicting goals and on the magnitude of the threat.

## Conclusion

The safety of civil aviation remains a priority strongly asserted by the international community, but today's threats linked to air terrorism force a reconsideration of the protection of civil aircraft. The point is not to reassess such protection but to establish its legal framework. Indeed, the lives of passengers taken hostage must always have priority; however, when an array of clues allows the state to determine with certainty that use of the aircraft will cause devastating damage, the protection noted in the addendum to Article 3 no longer applies. At this point, the aircraft's legal status changes from means of transportation to weapon of mass destruction—a shift that serves as the basis for resorting to armed force.



## Notes

1. L. Grard, "Le droit et l'exercice de la souveraineté dans l'espace aérien" [The law and the exercise of sovereignty in the airspace], *PLAF*, no. 10 (June 2006): 26.

2. On the evolution of air terrorism, see P. Dupont-Elleray, "Le terrorisme aérien: De l'évolution de la menace à la riposte du droit à la piraterie aérienne" [Air terrorism: From the evolving threat to the legal response to air piracy], *Revue Française de Droit aérien et spatial [RFDAS]* 220, no. 4 (October–December 2001): 392–400.

3. Art. 2, sec. 4. "The Charter and the customary international law flow from a common fundamental principle outlawing the use of force in international relations." ICJ decision, 27 June 1986, *Nicaragua v. United States*, case concerning military and paramilitary activities in and against Nicaragua, Reports 1986, General Cause Book no. 70.

4. In its work on the codification of the Law of Treaties, the International Law Commission stated that "the law of the Charter concerning the prohibition of the use of force in itself constitutes a conspicuous example of a rule in international law having the character of jus cogens." Par. 1 of the International Law Commission's Commentaries on Art. 50 of its draft "Articles on the Law of Treaties," *International Law Commission Yearbook*, 1966-II, 270.

5. Chicago Convention on International Civil Aviation, 7 December 1944, addendum to Art. 3, Doc. 7300/9.

6. General Assembly Resolution 927, 10th sess., 14 December 1955.

7. A17-1, Assembly Resolution, *ICAO Assembly Resolutions*, Doc. 9848, VII-2. See also the Convention on International Civil Aviation, Appendix 17: "Security: Safeguarding International Civil Aviation against Acts of Unlawful Interference."

8. A25-1, Amendment to the Convention on International Civil Aviation (addendum to Art. 3), *ICAO Assembly Resolutions*, Doc. 9848, I-6.

9. Security Council Resolution 1067, 26 July 1996, S/RES/1067 (1996).

10. ICJ decision, 9 April, *United Kingdom v. Albania, Corfu Channel Case*, Reports 1949, 22. On aviation cases taken to the ICJ, see G. Guillaume, *La Cour Internationale de Justice à l'aube du XXIème siècle, Le regard d'un juge* [The International Court of Justice at the dawn of the twenty-first century as seen by a judge] (Paris: Pédone, 2003), 273–85.

11. Chicago Convention, Art. 26.

12. "This convention shall be applicable only to civil aircraft, and shall not be applicable to State aircraft." Chicago Convention, Art. 3.

13. See the proceedings introduced by Israel before the ICJ against the government of the Popular Republic of Bulgaria. ICJ decision, 26 May 1959, Reports 1959, 127ff.

14. The ICAO condemned Israel for this act. A19-1, *Libyan civil aircraft shot down on 21 February 1973 by Israeli fighters*. *ICAO Assembly Resolutions*, Doc. 9848, I-24.

15. J. Dutheil de La Rochere, "L'affaire de l'accident du Boeing 747 de Korean Airlines" [The case of the Korean Airlines Boeing 747 accident], *Annuaire Français de Droit international* 29 (1983): 749–72.

16. On the international airspace, see L. Monari, "Utilisations et abus de l'espace aérien international" [Uses and misuses of the international airspace] (doctoral dissertation, McGill University, Montréal, 1996).

17. ICAO Investigation Report forwarded to the Security Council/S/1996/509.

18. Chicago Convention, Art. 1.

19. ICJ decision, 27 June 1986, sec. 251.

20. P. Dupont, "L'espace aérien entre souveraineté et liberté au seuil du XXIème siècle" [The airspace between sovereignty and freedom at the dawn of the twenty-first century], *RFDAS* 229, no. 1 (January–March 2004): 18.

21. Civil Aviation Code, Art. L. 131-1.

22. Chicago Convention, Art. 11.

23. Decree no. 75-930, 10 October 1975, concerning air defense and conventional air operations conducted above and from the home territory, Official Journal, 14 October 1975 (consolidated text of 5 February 2004).

24. The methods of interception are specified in Ministerial Instruction no. 3226/DEF/C34/CD, 12 October 1990, concerning air safety. (Confidential: Defense). Commissioner Maj C. Munsch, *Le cadre juridique des opérations aériennes dans les conflits armés et les situations de crise* [The legal framework of air operations in armed conflicts and crises], 2001, 15.

25. On cross-border air safety cooperation, see Gen S. Abrial, "Place et missions de l'armée de l'Air dans l'exercice de la souveraineté" [The air force's role and missions in the exercise of sovereignty], *Penser les ailes françaises*, no. 10 (June 2006): 43.

26. Chicago Convention, addendum to Art. 3.

27. Convention on International Civil Aviation, Addendum A, Appendix 2.

28. A25-3, Cooperation among Contracting States for Ensuring the Safety of International Civil Aviation and Advancing the Aims of the Chicago Convention, *ICAO Assembly Resolutions*, Doc. 9848, I-7.

29. On hot pursuit in the international airspace, see Monari, "Utilisations et abus," 40–44.

30. Actual practice shows that this condition is not always met. Air incident of 31 July 1976, *Revue générale de droit international public*, 1977, 194.

31. Dupont, "L'espace aérien entre souveraineté et liberté," 12.

32. Art. 51, Charter of the United Nations. See A. Cassese, "Article 51," *La Charte des Nations Unies* [Charter of the United Nations], vol. 1, ed. J. P. Cot, A. Pellet, and M. Forteau (Paris: Economica, 2005), 1329–60.

33. P. Rambaud, "La définition de l'attaque par l'organisation des Nations Unies" [Attack as defined by the United Nations], *Revue générale de droit international public* 80, no. 3 (1976): 835–81.

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36. L. Grard, "Le droit de l'aviation civile après le 11 septembre 2001, Quelles mesures face à l'hyperterrorisme?" [The law of civil aviation after 9/11: Which steps to take in the face of hyper-terrorism?], in *Études à la mémoire de Christian Lapoyade-Deschamps* [Studies in memory of Christian Lapoyade-Deschamps] (Pessac: Presses universitaires de Bordeaux, 2003), 606.

37. A33-1, Declaration on Misuse of Civil Aircraft as Weapons of Destruction and Other Terrorist Acts Involving Civil Aviation, *ICAO Assembly Resolutions*, Doc. 9848, VII-1.

38. Resolution 3314, Art. 4.

39. Security Council Resolution 1368, 12 September 2001, S/RES/1368 (2001); Resolution 1373, 28 September 2001 (Afghanistan), S/RES/1373 (2001); and A. S. Firion, "Le fondement juridique de l'intervention armée en Afghanistan" [The legal basis of the armed intervention in Afghanistan], *Droit et Défense*, no. 4 (October–December 2001): 31–41.

40. ICJ, Advisory Opinion, Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, 9 July 2004, Reports 2004, General Cause Book no. 131, sec. 140.

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42. Philippe Wekel, "Nouvelles pratiques américaines en matière de légitime défense?" [New American self-defense practices?], *Annuaire Français de Relations Internationales* 6 (2005): 312.

43. Minutes, Security Council, S/PV/1862, 8 December 1975; and minutes, S/PV/2288, 19 June 1981.

44. Minutes, Security Council, S/PV/2288, 19 June 1981, sec. 115.

45. Security Council Resolution 1483, 23 May 2003, S/RES/1483 (2003).

46. A/58/PV.7, 23 September 2003 (UN secretary-general's statement about preemptive self-defense).

47. Conceivably, an evolution of international law on this point will occur. United Nations, *Report of the High-Level Panel on Threats, Challenges and Change*, 1 December 2004, A/59/565.

48. Charter of the United Nations, Art. 51.

49. L. Condorelli, "A propos de l'attaque américaine contre l'Irak du 26 juin 1993" [On the subject of the American attack against Iraq on June 26, 1993], *Journal Européen de Droit International* 5, no. 1 (1994–95): 134–44.

50. See the project in General Assembly Resolution A/RES/56/83. See also J. Crawford, *Les articles de la Commission internationale sur la responsabilité de l'état* [Articles of the International Commission on the State's Responsibility] (Paris: Pedone, 2003), *introduction, textes, et commentaires* [introduction, texts, and commentaries].

51. These conditions were taken up again by the ICJ. Advisory Opinion, Legal Consequences of the Construction of a Wall.

52. Special German-Portuguese Arbitral Tribunal verdict, Naulilaa case, 31 July 1928, RSA, vol. 2, sec. 43.

53. It is necessary to exhaust all air-safety active measures before resorting to destruction of the aircraft. Those measures are taken in the following order: long-range reconnaissance, long-range surveillance, escort, coercive actions, and warning shot.

54. ICJ decision, 27 June 1986, sec. 194; and ICJ decision, 6 November 2003, Oil Platforms (Islamic Republic of Iran v. United States of America), Reports 2003, General Cause Book no. 90.

55. Minutes, Security Council, S/PV/1644, sec. 25, 27–28 February 1972.

56. Decree no. 75-930, 10 October 1975.

57. Anne S. Millet-Devalle, "Lois sur la sécurité aérienne et terrorisme: Chroniques des faits internationaux" [Laws on air safety and terrorism: Chronicles of international facts], *Revue générale de droit international public* 110, no. 3 (2006): 689.

# Drawing Strategic Lessons from Dahomey's War

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Recently, research on a variety of international security issues, including types of foreign and domestic conflict, has made impressive progress. This intellectual endeavor partly reflects an effort to meet the increasing demand for information about untraditional security threats following the terrorist attacks of 11 September 2001. Many unanswered questions remain, however, regarding other types of conflict fought on the West African continent, including those known as “extrasystemic wars” or confrontations between state and nonstate actors, seen in places such as Somalia in the early 1990s and late 2000s. This article examines a war fought between the third French Republic and the Dahomey kingdom (in what is now the Republic of Benin) during the 1890s as an illustration of how foreign government forces engage in military conflict with rebel groups in geographically distant locations. It demonstrates that one of the key facilitators of government victory rests with the choice of rebels to fight as a regular army rather than as guerrilla forces, which they used to do quite often through the nineteenth century in many parts of the world, including Dahomey.<sup>1</sup> Specifically, the article identifies a set of strategic incentives that drove the Dahomey fighters to adopt a conventional military strategy, which in turn improved France’s chances of defeating them because the war suited the foreign forces’ specialization. This study explores the experience of the Dahomey people (also known as the Fon) and provides insight that addresses several important issues of modern wars beyond Dahomey. In so doing, it extends a set of modest proposals for Western powers to consider with regard to the role of conventional military assets in their war plan against insurgent adversaries.

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One of the lessons for Western nations from recent counterinsurgency experiences—whether in Afghanistan, Iraq, or Somalia—involves the fact that the effectiveness of indigenous forces who adopt guerrilla strategy compels regular forces to fight like irregulars (or at least behave similarly) to defeat them. One finds very few lessons dealing with the opposite situation, in which irregulars confront powerful forces by fighting like a modern army. The Dahomean war represents one such rare scenario whereby a Western nation intervened to fight a violent insurgency that betrayed a common strategic logic: despite the fact that, as an underdog, the Fon had every reason to adopt the “strategy of the weak,” they kept an impressive modern army and used it, only to lose.

An ancient kingdom with a certain degree of political, military, and social structure, Dahomey did not generate so-called insurgents as we understand them today. This article, however, deals with Dahomey as a nonstate entity rebelling against French invasion. That Dahomey at the time did not merit recognition as a state member of the international system is consistent with the existing literature’s coding the Dahomean war as “extra-systemic.”<sup>2</sup> A survey of multiple counterinsurgency cases in recent years shows that the Fon experience is no historical anomaly; in fact, regardless of several differences, the war presents characteristics that resemble some of the recent conflicts faced by Western nations elsewhere. Beyond the Gulf War of 1991 and the strife in Kosovo in 1998–99, it resonates with some of the major conventional battles during the fall of the Taliban in 2001 and the early phase of the Iraq war of 2003, which ended fairly quickly before transitioning to a guerrilla phase.<sup>3</sup> Because of its relevance to these key combat experiences (and likely more other cases), the Fon war of Dahomey offers useful insight for the recent past, present, and future wars of Western powers.

Consequently, this article addresses the causes and effects of the Fon’s decision to fight like regular forces. First, it examines three major explanations available in political science for how nonstate insurgent groups lose to stronger actors, showing that none of them indicates why Fon rebels lost the war and why we need a new perspective. Second, the article explores several reasons why some groups betray the conventional wisdom of fighting like irregulars to defeat regulars, instead favoring an orthodox military strategy that helps state actors. Third, it traces the process of the Dahomean war, examining several factors that enabled France to defeat

Dahomey and arguing that the latter's inclination to adopt conventional strategy generated a number of problems for the rebels and facilitated a French victory. Finally, the study concludes with a set of implications for the military strategy of Western powers.

### Existing Explanations

Theories of asymmetric war seek to describe how underdogs defeat superior adversaries in international conflict, a question not addressed directly here. Rather, we consider how the strong defeat the weak—more specifically, how the French beat the Fon. The most representative theories in this field include (1) balance of resolve, (2) strategic interaction, and (3) democratic weakness. The first theory posits that in war between unequal powers, the stronger side is less motivated to fight and therefore more likely to lose.<sup>4</sup> When applied to the Fon context, this theory argues that Dahomey lost the war because it had less determination than the French to withstand the cost of fighting. Indeed, French forces appeared to have high resolve because they had strong support from a powerful colonial lobby at home and public determination to invest in conquering Dahomey. Therefore, the theory considers a relatively low level of resolve the main cause of Fon defeat. Second, scholars argue that the weaker side will likely to win if it adopts a military strategy (either conventional or guerrilla) opposite that of the stronger side.<sup>5</sup> According to this theory, the Fon lost the war not because of their lack of determination but because they used the same strategy as did France in a series of army-to-army interactions from the beginning to the end. Had they adopted guerrilla strategy against conventional French armies, in other words, then they would have won. Finally, the theory of democratic weakness holds that insurgents will probably win when their opponent, a democratic government, suffers from the rise of middle-class opposition to the war that constrains the government's military policy and reduces military resources necessary for defeating the insurgents.<sup>6</sup> From this perspective, the Fon lost the war not because of their weakness, disorganization, or use of the wrong military strategy, but because France could fend off domestic rivals who sought to destabilize internal politics.

These theories are important to our understanding of the interactions of warriors in asymmetric combat environments, but they fall short of providing sufficient detail to explain exactly how rebel organizations, particu-

larly those in West Africa during colonial times, have fared against Western nations like France. Further, they do not discuss the many resource-poor insurgent groups that have managed to build a well-equipped modern army capable of battling enemies they would otherwise evade. Against the backdrop of these theories, in fact, insurgent groups have a collective propensity to use armies in combat that give Western states a number of strategic advantages. This development represents a long-term trend of Western forces benefiting tremendously from confronting these groups—a trend that the former ideally should sustain as a basis for carrying out military intervention effectively. Provided this tendency continues around the globe, it follows that state actors are well positioned to capitalize on the enthusiasm of hostile insurgents to fight conventionally, using the trend as a metric to assess the need to intervene and the likelihood of success. The next section identifies conditions under which, as illogical as it may sound, irregular forces will likely fight in regular fashion—a practice substantiated by a variety of insurgent groups in many parts of the world.

### **Irregular Forces That Fight Like a Regular Army**

In the field of security studies, the propensity of the weak to fight in guerrilla fashion has a theoretical and empirical basis. Needless to say, few underdogs are willing to engage organized adversaries armed with better weapons and do so in open terrain. Because efforts to professionalize armed forces require a large capital infusion, even fewer could develop such forces. Yet as shown elsewhere, a look at a series of modern colonial wars in the third world demonstrates that a number of insurgents and their leaders have defied this ordeal and adopted a counterintuitive strategy. Of course, ways of conventionalizing forces differ among a variety of insurgent groups in terms of weapons acquisition, training, discipline, logistics, transportation, and unit movement. But the strategy of regular war by insurgent groups is no historical accident; instead, it was the norm for much of the nineteenth century when subnational ethnic groups—whether the Xhosas, Zulus, Senegalese, Sikhs in India, Afghans, or even Algerians—confronted colonial powers with armies, albeit in their own different ways. By the time they fought the British in 1845, for instance, the Sikhs had developed a splendid regular army in the Punjab after, like many other tribal groups of India, they had bought European weapons and invited in Western military

strategists.<sup>7</sup> Before fighting France in 1854, Hajj Omar had formed an army of a few thousand conscripted levies in Senegal.<sup>8</sup> In China during the early twentieth century, Mao Zedong developed a concept of a modern army based on guerrilla war and foresaw creation of a people's army as the final stage in the evolution of peasants' struggle against Japanese forces. Indeed, as described in detail elsewhere, several reasons tempt insurgent groups to modernize armed forces even if they know their defects.

For instance, rebels may believe in the advantage of features such as modern weapons, organized unit formations, and discipline as a source of military power. One may cultivate the belief that capital-intensive armies are superior to labor-intensive guerrilla groups because of what they bring with them through careful comparison of alternative strategies and interactions with outside merchants, traders, and military operatives. Such a conviction is precipitated by the sense of inferiority accorded to guerrilla strategy and the appeal of armies generated by those who adopted them elsewhere.<sup>9</sup> Rebels may also see military modernization as symbolic of a civilized nation and an indication of improvement in socioeconomic life. This view is embedded in modernization theory, which posits that certain industrial, economic, and military developments lead directly to positive social and political change.<sup>10</sup> In the 1870s, for instance, the Ashanti in Ghana had developed a strong predilection for a modern army through their interactions with Europeans, and established one to battle the British.<sup>11</sup> In the 1880s, Mahdist forces under Muhammad Ahmad in Sudan were attracted to the European way of war as a way of modernizing their otherwise primitive group as they fought the British for independence.

Furthermore, rebels may find opportunities for advancing militarily from their arms trade and by receiving material support from external actors. A number of tribal systems and feudal kingdoms in many parts of colonial and postcolonial Africa benefited broadly from intercontinental commerce in slaves, ideas, and weapons, which helped build up powerful armies.<sup>12</sup> At the same time, colonial masters may have installed and institutionalized such forces as a main combat doctrine. The literature of historical institutionalism informs us that colonial experiences give insurgent groups incentives to use conventional strategy.<sup>13</sup> After the colonization of such groups, state forces infuse capital into the colonial economy and develop levies to increase local manpower and create ties to the colony.<sup>14</sup> Finally, strategy



may have a great deal to do with conditions associated with past experiences of insurgent groups, such as learning from positive events or failing to learn from mistakes. Openness to various interpretations of historical events may represent a key determinant of insurgent strategy. At the same time, the maturity and age of these organizations may also exert an influence. Young groups may pursue new challenges while old ones, who have established standard operating procedures, may have trouble adopting new assignments. Additionally, they may have bureaucratic reasons for resisting the introduction of new combat methods because doing so would assail established norms and hierarchies.<sup>15</sup>

Rebel groups' multiple incentives to use armies have rarely turned into favorable outcomes. Instead, the widespread tendency of regular war has served the interests of Western nations who, in the past several centuries, have competed to colonize foreign territories as they overcame the tyranny of long distances to crush insurgents, capitalizing on their edge in military technology, transportation, communications, and logistics. Western hegemony in conventional wars continued into the early twentieth century when indigenous groups learned from a broad application of Leninist revolutionary ideology and Maoist strategy to fight more like guerrillas, as seen in Indochina, Malaya, Kenya, the Philippines, and elsewhere. These insurgents subsequently profited from the postwar collapse of the colonial system, the proliferation of global norms that favored decolonization and self-determination, and the advocacy of international organizations like the United Nations that advanced third world claims. Such institutional and normative support as a whole boosted the insurgents' prospects for victory in the early to mid twentieth century, and, as a result, their victorious leaders became heads of newly independent states. The apparent linkage between insurgents' military strategy and war outcomes indicates that sticking to the strategy of the weak would more likely produce victory. Conversely, success would favor Western nations if insurgents reciprocated with their preference for conventional strategy. We clearly see this linkage in the Fon experience in Dahomey.

### The Fon War of Dahomey

Like most wars involving unequal powers, the Dahomean war was an asymmetric struggle between the powerful Third Republic and the Fon tribe—but asymmetric in mixed ways. On the one hand, the Fon possessed

lesser weapons, training, and discipline; subcolonial status; and perhaps a small expectation of victory (and therefore a low resolve to fight). On the other hand, they enjoyed advantages in manpower size as well as knowledge of terrain and local languages. Led by King Béhanzin, they tapped into a large reservoir of people, mobilizing more than 10,000 male and female soldiers. In two years, this force grew to 15,000, incorporating a number of brave female soldiers and outnumbering the French by at least two to one for the rest of the war.<sup>16</sup> The Fon operated according to the norm of modern battle formation and reliance on firepower; no guerrilla commands, militias, or special forces operated as major combatants. When the first campaign began in 1890, they charged hard toward Cotonou, an adjacent naval kingdom, where they met with French gunboat shells and retreated. The Fon then turned and repositioned themselves toward the north in the face of French reinforcements from Porto Novo, a major port city. At this point, they signed an armistice recognizing Porto Novo as a French protectorate and ceded Cotonou in exchange for an indemnity. Despite these concessions, the first campaign ended practically in a draw because the armistice prevented immediate French decolonization but stopped further Fon aggression. The year 1891 was peaceful, during which Fon insurgents revived the slave trade in order to buy weapons as part of their rearmament program.

Despite the embarrassment of the stalemate, the French had fewer forces when the second campaign began in 1892. Alfred-Amedee Dodds, the commanding general, arrived with a force of nearly 2,000 (Porto Novo added some 2,600), while the Fon army totaled around 12,000 men. Dahomey grew more confident since it had fought the first campaign to a draw, but the army proved mostly incapable of general combat. Subsequent fighting generated more Fon casualties than French, forcing Béhanzin to take arms and attack French forces himself. The Fon mounted several more charges that nevertheless failed in the face of French bayonets. Soon the French picked up a key victory at Adégon before marching toward Abomey where they overran the Fon. After capturing Béhanzin, France proclaimed victory in 1894.

Theoretically speaking, the Fon insurgents could have prolonged the short-lived and lopsided war by adopting a strategy that would have spared them direct confrontations. Powerful states such as France favor regular war for the obvious reason that it allows the armed services to maximize their

material superiority and elicit the greatest payoff. Conventional strategy boosts orthodox training methods, rewards organized operations, hastens the procurement of advanced weapons, and becomes embedded in the culture of modern military organizations, which grow resistant to change over time and integrate new battle methods only slowly. Thus, even in the face of unknown enemies in unfamiliar places, Western armies retain the conventional style most of the time.

France's military institutions of the 1890s were no exception; they had inherited the Napoleonic tradition, which relied on the use of artillery, square formation, and rigid doctrine, precisely embodying this doctrinal conservatism.<sup>17</sup> Of course, Dahomey's combat method was not particularly European but conventional in the African context of armies conducting slave raids. The "orthodox" method of army-to-army combat, however, is far from what we expect to see today in places like Afghanistan, Somalia, or Yemen where insurgents mount a series of irregular combat in villages, towns, highlands, and mountains to raise the cost of fighting for adversaries and undermine their will to fight. Given the recent proliferation of insurgency strategy across parts of the world such as the Middle East, South Asia, and Southeast Asia, one might find the Fon strategy an anomaly if not irrational. Then why did the Fon use regular armies when they could have chosen differently?

For the inferior side, the notion of fighting in conventional settings appears suicidal. A rational response would call for *avoiding* direct confrontation and adopting the strategy of "weapons of the weak" by fighting like guerrillas, taking hostages, and using them as human shields. Given the centuries-long history of guerrilla war, the Fon might well have known about it and employed it.<sup>18</sup> In fact, fortune-tellers had advised Béhanzin against waging pitched battles, recommending ambushes and night movements instead, which the Fon used at the battle of Dogba and Ouémé.<sup>19</sup> The Fon, however, stayed mostly with the strategy they were accustomed to for some of the reasons discussed above. Specifically, the strategy helped them justify a need to modernize their forces and strengthen the Fon kingdom by setting up a primitive military system and using it to protect the kingdom. In contrast, guerrilla war did not appear too helpful. Success with such warfare hinged on the need to voluntarily cede a territory to enemy penetration, which in turn would hinder Dahomey's own ground opera-

tions and prove highly unpopular among its people. Béhanzin would rather protect his own land than let the French exploit it and suffer from an unruly population. Additionally, conventional strategy gave Dahomey the appearance of an aspiring modern nation that could challenge a foreign “equivalent,” offering the sense that despite a wide gap in material power, the Fon could fight the French on equal terms. The powerful Fon army, consisting of male soldiers and famed female warriors, reflected this confidence. Furthermore, Dahomey’s topographic features, especially its plain and desert areas, favored the organized movement of infantry operations. The savanna climate also made guerrilla war difficult. Two dry seasons a year impaired the growth of a dense forest in which irregular forces could hide—but not improperly dressed combatants.<sup>20</sup> Finally, because of the institutionalization of conventional battle in Fon society and its proven success in repeated wars with neighbors, such as the Whydah and Oyo kingdoms, the army considered organizational and doctrinal change unnecessary.

It was no coincidence that Dahomey had a reputation for military might.<sup>21</sup> Archibald Dalziel, British governor of the country in the 1760s, wrote that Dahomey boasted a considerable standing army led by officers with a high level of discipline and ability based on the imported principle of “levee en masse”—the recruitment of all able-bodied adults. The king could gather his regular forces quickly, commanded by these well-trained officers.<sup>22</sup> He put a commander—the “Gau”—in charge of planning military strategy and logistics and brought in military experts from Portugal and Germany who rivaled the French in terms of teaching training, weapons use, and siege tactics.<sup>23</sup> Aside from a brief guerrilla-like skirmish in 1892, the Fon rarely trained for hit-and-run missions, protected its civilian populations, or sought to instill and exploit fear among the French.<sup>24</sup> Its strategy mostly dispensed with operations that pinpointed enemy weaknesses. Yet the very preference for orthodox combat generated six problems that led to disaster for Dahomey in the second campaign.

### *Consequences of Conventional Strategy for the Fon*

First, Dahomey suffered a resource shortage that compromised its ground operations. Aside from the fact that sophisticated weapons were expensive and generally hard to obtain, shortages stemmed from smaller but serious problems. For example, occurring in the context of a vast territory and harsh

environmental conditions, the war caused a decline in food output—a severe problem because the first campaign broke out during a planting season, interrupting normal production of agricultural crops by removing needed hands. The war not only destroyed parts of arable soil but also prevented farmers from cultivating it, blocked their harvest for the following year, and forced soldiers to prepare their own food.<sup>25</sup> Lack of self-sufficiency, made worse as the French army inflicted damage on local people and areas, forced Dahomey to diversify sources of revenue and raid adjacent territories for slaves and capital. Aggression and looting left little for the disgruntled farmers, who went to capture slaves to sell, which in turn reduced the number of laborers needed for soldiering.<sup>26</sup> Furthermore, the relative brevity of previous campaigns made planning for this war more difficult in terms of logistics and food transportation, whereas the French army was used to such requirements. Finally, harsh taxation and calls for mobilization took a toll on villagers, who gradually learned to resist military service. The decline of public contributions reduced the availability of war materiel, forcing Dahomey to depend upon female soldiers and, again, the slave trade.<sup>27</sup>

Once the war began, this resource constraint yielded a second problem—the imbalance of military power between the two sides. French soldiers had more guns and bayonets, effectively offsetting Dahomey's manpower advantage. French military power drew not only on its previous experiences in colonial wars but also on its advanced weapons, such as the Maxim gun, which fired much faster and with longer range than Dahomey's blunderbusses. French soldiers wielding rifles with fixed bayonets outreached Fon swords, and artillery pounded their defensive positions.<sup>28</sup> These weapons proved so effective that they destroyed repeated Fon charges before they could get within musket range of the adversary. The French combined this technological edge with their maneuvers to generate maximum effects. By utilizing smaller expeditions that permitted greater mobility, they dodged Fon attempts to intercept, cut off, and envelope them. Superiority in technology and movement allowed French soldiers to transport a high volume of firepower. Additionally, a naval blockade cut arms and food import to the insurgents, who became less able to rely on the slave trade. Thus, the combination of technology, maneuver, and sanctions helped the smaller French force defeat a larger Fon army.<sup>29</sup>

The third problem involved the fact that Dahomey treated the war more as a social enterprise than a life-affecting duel, thus reducing its combat effectiveness. According to the Fon concept of war, soldiers dedicated their energy in peacetime to court ceremonials; consequently, they considered combat training more of a ritual than a necessary ingredient for unit cohesion, discipline, and other aspects of military improvement. Thus the army consisted of right and left wings, not necessarily to match enemy formations but for the sake of ceremonial occasions during which they formed two sections, one on each side of the king. Fon army movements reflected their social expectations, whereas the French army aimed to fight and win. Furthermore, the social imperative encouraged the Fon to use available slaves less to win wars than to ensure the continuous supply of human sacrifices. Although the Fon used surprise and night raids to surround a town in the darkness, achieve surprise, and then force an entry, they sought not to kill but to capture as many people as possible. Therefore, if the army itself was taken by surprise, it would quickly fall into confusion, which encouraged desertion.<sup>30</sup>

Fourth, differences in battle styles generated problems for Dahomey. Under the square formation, French troops trekked across combat areas with reliable sentries who helped protect supply routes, informed vulnerable units, and warned units to fend off night raids. French bayonets fixed on guns in proper formations cut Fon defensive stands at natural and man-made hazards.<sup>31</sup> In contrast, Dahomey adopted an arc formation composed of two divisions that included the most important village chief on the right and lesser chiefs on the left where warriors entered the field. This method did not work well because the insurgents lacked adequate resources and because responsibility for rearming rested with individual soldiers. As a result, they often found themselves poorly armed, thrown into disarray after each battle, and unable to quickly prepare for subsequent confrontations.<sup>32</sup>

The failure of Fon insurgents to get used to new weapons and rearm themselves between the two campaigns represented the fifth problem. Such an interval between weapons acquisition and adoption, a common problem for any armed force, had different meanings for insurgent groups and advanced European powers. The latter monopolized arms manufacturing and other supply sources, employing the products in war as soon as they became available. New inventory relatively quickly spread to various military units

for testing and then adaptation for the purpose of increasing lethality. A decade before the Fon war broke out, the baron Colmar Freiherr von der Goltz of Prussia argued that “all advances made by modern science and technical art are immediately applied to the abominable art of annihilating mankind,” although the very scientific progress and military application of new technology were less prevalent and consistent outside Europe.<sup>33</sup> Although France as a supplier and exporter of weaponry seldom suffered a problem in assimilating new weaponry into its system, the same cannot be said of Dahomey as an importer. Accustomed to old weaponry and feeling generally good about it, Fon soldiers of the first campaign were fortunate to acquire new weapons. However, they then discovered the need to change and had to receive training before they could use them. Besides, they did not know whether they would have enough weapons in time to assimilate them—a problem that troubled the Fon in distinct ways. Specifically, they were unsure and hesitant about, as well as resistant to, coordinating the new weapons with earlier ones. Further, they did not have time to train and become familiar with the weapons, as did the French. Finally, they found the weapons and their users vulnerable to French countermeasures—a matter of fact as long as France remained more advanced in weapons production. This problem resulted in widespread confusion among the Fon and proved difficult to solve in only a few months.<sup>34</sup>

### *Ambitious Military Strategy, Weak Political Foundations*

The critical sixth problem—an ambitious military strategy backed by a weak political system in Dahomey—receives extensive attention here. The Fon insurgents devised a military strategy to match up against a powerful army, but they made little effort to bolster the stability of the kingdom. As the Fon confronted a more mature nation, in the sense of Western modernity, that enjoyed both the means to cross the ocean and move across a large continent, their kingdom remained a loosely structured hierarchical system with a simplified leadership. Under Dahomey’s political system, the Migan took up multiple responsibilities as prime minister, chief policy executioner, supreme judge, and chief law enforcement officer, in addition to commanding the army’s right wing. Under the Migan, the Meu prepared budgets, supervised ceremonies, and ran communications across the system.<sup>35</sup> Several chiefs below them, the Togan, collected taxes, recruited men, and led agri-

cultural projects.<sup>36</sup> These institutions were so internally focused that the decision-making and execution processes functioned without much external oversight. Indeed, virtually no independent body checked Béhanzin's conduct of war and provided an objective assessment and advice on strategy.<sup>37</sup>

These institutions remained generally stable throughout the war, managing to discourage internal revolt. Yet, little beyond them offered unity to Dahomey's political and social structures. Widespread institutional inertia severely constrained the country's ability to incorporate the diverse interests of the 120 internal tribes residing in the territory, generate incentives for farmers to join the army, and nurture a sense of nationhood. Hence, break-away movements were common, constituting part of a phenomenon that John Hargreaves calls the "African partition of Africa," which included the neighboring Porto Novo and Cotonou, which had seceded from Dahomey before the war broke out.<sup>38</sup> Resultant fears of losing more power to the periphery caused Dahomey to refrain from dispersing defensive capabilities and command authorities across its vast territory while, contrary to common sense, Béhanzin invested little to strengthen internal capabilities. Thus, Fon conventional strategy relied upon army operations whose command and control systems did not function. Béhanzin's political system encountered challenges not just externally but internally. Although he remained the most important figure in the insurgent regime, he was no more powerful than his predecessors and found himself surrounded by provincial leaders who questioned his authority to hold together various tribal interests and generate the collective force to defeat France.<sup>39</sup> As Jeffrey Herbst argues, "the ambiguous nature of authority in outlying areas was aggravated because there was no way for states to substitute for the use of coercion when extending their writ of authority."<sup>40</sup> Dahomey's political structure, like that of most of its neighbors in precolonial Africa, remained extremely loose. As Igor Kopytoff describes it,

the core . . . continued to be ruled directly by the central authority. Then came an inner area of closely assimilated and politically integrated dependencies. Beyond it was the circle of relatively secure vassal polities. . . . This circle merged with the next circle of tribute-paying polities straining at the center's political leash. Beyond, the center's control became increasingly symbolic. . . . The center could only practice political intimidation and extract sporadic tribute through institutionalized raiding or undisguised pillage.<sup>41</sup>

Research shows that throughout much of recent history, African kingdoms have been either unwilling or unable (if not both) to project power



over territories beyond their centers. Regimes cared little about what local territories did, as long as they offered tributes, or how much development in the periphery could affect their wartime stability.<sup>42</sup> Similarly, Dahomey invested little in local and national development as part of war efforts. This complemented France's minimalist intent in Dahomey, wishing only to prevent imperial rivals from affecting its operations, as opposed to waging a sweeping conquest of all Western Africa. Consequently, it did little more than ensure that Dahomey remained weak. The French objective, after all, was not so much to build a strong colonial government as to weaken and subjugate it in order to exploit Dahomey's resources and invade its neighbors. Expecting only moderate economic and strategic returns from the conquest, France found the act of striking insurgents from a distance a politically justifiable endeavor. All of this in turn allowed the French to take advantage of the political vacuum and use violence to deny Dahomey an opportunity for reform.

In hindsight this analysis indicates that Dahomey would have fought the war better had it managed any of the six problems above. Most of its difficulties discussed here stemmed from having an ambitious military strategy that suffered multiple issues common to weak armed forces and from dispensing with the benefit of maintaining a stable, centralized political regime. Institutions of a centralized regime would have allowed the Fon to offer a variety of public assets, such as law and order, defense, and infrastructure, which could function as a foundation for internal stability and a source of territorial defense. Once in place, these systems would have provided a powerful administrative engine to run a large machine of political and economic institutions designed to generate sustained support for local tribes and regional groups, whether in terms of defense, taxation, or existential matters. Later, nation-states in Africa would be characterized not only by borders and citizens with national identities but also by a set of effective bureaucracies and widespread representative systems. The Fon insurgents fought France largely without these assets.

The insurgents also might have benefited from assigning greater defensive roles to Dahomey's neighbors as well as its population in accordance with the concept of buffer zones. Had the country secured an effective centralized governance that regulated flows of people and capital peacefully from neighboring kingdoms, it would have enjoyed a greater degree of self-

sufficiency and evaded the need to deploy external coercion to save resources for wars with stronger foes. A more rigorous regional defense network around Dahomey would have presented the French intrusion an additional obstacle, likely undermining the penetration. At the same time, resources accumulated at the center could have been distributed among the populace to guarantee a steady supply of recruitment and revenue. Of course, a wider distribution of assets would have proven difficult to carry out because, as Robert Bates argues, “those who held positions of privilege had to insure that the benefits created by the states were widely shared”; otherwise, they would be left without a popular mandate.<sup>43</sup> A centralized authority probably would have permitted Dahomey to secure a firm territorial basis. Instead it remained a decentralized anticolonial regime, dependent upon the slave trade to buy weapons to modernize its forces and warring in neighboring areas only to undermine itself before facing the French. Research on political development in Africa, particularly the work of Bates, points to relatively low population density as a causal factor regarding the absence of institutions in Africa.<sup>44</sup>

Of course, all of these tasks, ranging from centralizing the political structure to distributing resources among the people and neighbors to matching all of these resources to the military strategy they had, would have been enormously difficult for the Fon—an indication that they likely had little chance to win the war. This situation also suggests that the incentives among some of the third world rebels to pursue constant military modernization along Western norms are so pervasive today that they will probably remain a major strategic problem shared by other insurgent groups. Some rebel organizations in the developing world are subject to suffer these problems when they use conventional strategy without a stable political system. Insurgent organizations would do well to build a set of political institutions capable of sustaining armed forces if they wish to adopt this particular force structure. This has implications for Western powers as well, insofar as the Fon experience generates a set of modest proposals for future encounters with foreign rebel groups. Specifically, Western nations are well positioned to identify a number of strategic conditions that would allow them to capitalize on their edge in material power, draw insurgent groups into conventional war, and subsequently exploit their strategic defects in orthodox

combat. In light of the fact that insurgents worldwide fight like guerrillas, the stakes become higher and this proposal sounds ever more urgent.

## Conclusion

The types of violent insurgent groups that Western nations face these days deviate in many ways from the Fon, so we cannot draw direct inferences from Dahomey's war. Similarly, this analysis may have differing implications for each of the Western powers. Yet the case study illustrates an important perspective that is reasonably generalizable across time and space. That is, by developing strong incentives to fight conventionally (contrary to accepted thinking), insurgent groups may unknowingly make it easy for Western powers to fight them. This incentive mechanism, seemingly counterintuitive, is often shaped by socioeconomic, cognitive, and geographic constraints largely independent of what Western powers do. Yet, those powers often overlook this tendency, taking for granted that insurgents would employ guerrilla tactics and that they should respond in kind. We must note, however, that the incentive structure is multifaceted and consistent with a historical pattern of strategic behavior seen in many parts of the world. Thus, regular war with nonstate insurgents has never been obsolete and will remain quite relevant for government forces and rebels alike. Today, national armies are reorganizing according to irregular doctrine and experiences with unfamiliar security threats, but Western defense papers indicate that many of them continue to spend enormous resources to train their service members for orthodox missions and to conduct arms acquisition on conventional baselines. These powers will probably win most of these wars without much trouble when insurgents suffer from multiple strategic defects. The rebels' incentives and flaws noted here may not apply to every nonstate group, but they demonstrate some of the major problems that such organizations are prone to face when they make this error.

More than likely, these issues will continue to haunt insurgents. Western powers will enjoy an edge in military technology, communications, training, and logistics that will give them an upper hand in every conventional operation they carry out against insurgents. The latter, in contrast, will have trouble procuring adequate resources, training warriors, and assimilating new weapons in a timely manner and using them effectively in open terrain; therefore, they will stick to relatively old weapons and ineffective combat

methods. This will take place as Western nations continue to capitalize on their monopoly of new inventories and proper training. More than likely, insurgents will also have to contend with internal subgroups that undermine their authority and operational bases in ways that reduce the resource burden of major powers seeking to find effective ways of conducting military interventions. To make such actions less costly, Western states should actively consider the positive aspect of fighting the insurgents that adopt conventional military strategy.

Of course, this approach involves a number of obstacles. First, policies that effectively permit hostile insurgents or potential rivals to gain modern technologies, allow proper training in units, and grow generally stronger for the sake of fighting them later (with somewhat optimistic presumptions) are militarily dangerous—a politically difficult sell for Western democratic audiences. Taxpayers will rightfully oppose and discourage their lawmakers from taking up such measures that empower adversaries and raise the cost of war. Thus, any move to encourage the modernization of insurgent organizations must be coupled with logic, reason, and consistency. Second, financial and military resources for conventional war, ranging from advanced hardware to maintenance, are likely more expensive than those for irregular war—another hard political sell in many European and American capitals during times of financial austerity. Difficulties with budgetary politics will probably challenge proper strategic judgment. Finally, Western armed forces mindful of the need for constant innovation will no doubt oppose a *return* to conventional strategy after having installed the doctrine of irregular combat throughout their organizations. Current dedication to counter-insurgency missions in the theaters of Afghanistan, Pakistan, and parts of the Middle East—as well as the inevitably high sunk cost involved with it—makes radical reorganization of force structure extremely problematic if not prohibitively costly. For these reasons, this article does not call for a wholesale reversal of a large chunk of military resources to the conventional age. Rather, a more appropriate way to proceed appears to encourage Western powers to find ways to draw hostile insurgents into making strategic errors in ways described herein. Doing so can bring about two important benefits that shed new light on the future military strategy of Western powers.

Specifically, it can yield a set of rare strategic gains for Western interventions. By luring foes into making mistakes in future conflict scenarios,

Western powers will avoid letting their enemies grow powerful in ways that compromise the former's security interests. Dealing with insurgents and striking them early in this strategically advantageous time frame will help defray the long-term cost of enemy empowerment. This is particularly the case in the early phase of insurgents' development, according to Dominic Johnson and Joshua Madin's research, when the initial population of a territory that they target is too small to draw on for mobilization, preventing them from interacting frequently enough with locals. Government forces can take advantage of this situation by arresting their growth at this stage. Of course, governments will probably have trouble detecting these groups during this phase because the latter may intentionally assume a low profile or simply fail to attract much attention. Yet some of them might modernize at this stage and attract attention. Determining which of them will develop into a significant threat that justifies quick and serious reaction by state actors, however, remains an issue. As Johnson and Madin convincingly argue, even if the government detects a genuine threat early, it must still garner necessary support to deal with a hypothetical threat. These difficulties remain even though the task of *attacking* groups is *easier* during the stages of population growth because the group is small, inexperienced, geographically dispersed, and therefore vulnerable. Under such circumstances, the government can strike fast, hard, and early.<sup>45</sup>

The other benefit allows some of the concerned Western states like the United States to prepare for the escalation of conflict with great powers with growing conventional capability. For instance, China's rapid growth in military technology, especially development in air, cyber, and naval assets in recent years, signals a strong sense of alarm across the Pacific. The likelihood of this escalation, preferably avoided at all costs, may be low today but could rise quickly if precipitated in the near future by creation of a security vacuum in the Asian theater. Such a situation could arise in relation to the forthcoming global repositioning of American military assets based on the recent troop withdrawal from Iraq and a planned redeployment from Afghanistan. This article does not call for rapid Western preparation for war with China, but it highlights one of the potential side benefits of focusing more intently on conventional military strategy as a side effect of predictable counterinsurgency contingencies in the third world. Making strategic choices is not easy for policy makers, but one of the West's past experiences

with insurgents in a remote area of Africa reveals several benefits that it can realize by devising a strategy that appears counterintuitive—even to the insurgents themselves.

## Notes

1. I distinguish between conventional and guerrilla/insurgency strategies, following Herbert Wulf, "Dependent Militarism in the Periphery and Possible Alternative Concepts," in *Arms Transfers in the Modern World*, ed. Stephanie G. Neuman and Robert E. Harkavy (New York: Praeger, 1979), 246–63. I define *conventional war* as conflict in which both sides use standing armies in open terrain. As for *insurgency*, it is a "political–military campaign by nonstate actors who seek to overthrow a government or secede from a country through the use of unconventional . . . military strategies and tactics." See Seth G. Jones, "The Rise of Afghanistan's Insurgency: State Failure and Jihad," *International Security* 32, no. 4 (Spring 2008): 9.
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10. Seymour Martin Lipset, "Some Social Requisites of Democracy: Economic Development and Political Legitimacy," *American Political Science Review* 53, no. 1 (March 1959): 69–105; Samuel P. Huntington, *Political Order in Changing Societies* (New Haven, CT: Yale University Press, 1968); and Adam Przeworski and Fernando Limongi, "Modernization: Theories and Facts," *World Politics* 49, no. 2 (January 1997): 155–83.
11. Ivor Wilks, *Asante in the Nineteenth Century: The Structure and Evolution of a Political Order* (London: Cambridge University Press, 1975), 180–89.
12. For this logic, see Jeffrey Record, *Beating Goliath: Why Insurgencies Win* (Washington, DC: Potomac Books, 2007).
13. David B. Ralston, *Importing the European Army: The Introduction of European Military Techniques and Institutions into the Extra-European World, 1600–1914* (Chicago: University of Chicago Press, 1990).
14. Wendt and Barnett, "Dependent State Formation," 331.
15. Michael C. Horowitz, "Nonstate Actors and the Diffusion of Innovations: The Case of Suicide Terrorism," *International Organization* 64, issue 1 (Winter 2010): 45–46.
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25. J. A. Skertchly, *Dahomey As It Is: Being a Narrative of Eight Months' Residence in That Country, with a Full Account of the Notorious Annual Customs, and the Social and Religious Institutions of the Ffons* (London: Chapman and Hall, 1874), 447.

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27. Goldstein, *War and Gender*, 64.

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29. Porch, “Bugeaud, Galliéni, Lyautey,” 383–84.

30. W. J. Argyle, *The Fon of Dahomey: A History and Ethnography of the Old Kingdom* (Oxford, UK: Clarendon Press, 1966), 81, 89; and David Ross, “Dahomey,” in *West African Resistance: The Military Response to Colonial Occupation*, ed. Michael Crowder (London: Hutchinson, 1971), 154–55.

31. Ross, “Dahomey,” 160.

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43. Robert H. Bates, *Essays on the Political Economy of Rural Africa* (Berkeley: University of California Press, 1987), 42; and Herbst, *States and Power in Africa*, 51.

44. Bates, *Political Economy of Rural Africa*. See also Robert F. Stevenson, *Population and Political Systems in Tropical Africa* (New York: Columbia University Press, 1968).

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# Building Global Partnerships

## *112 Gripes about the French Revisited*

COL JIM DRAPE, USAF\*

**Y**ou ride on the subway, and the smell almost knocks you out, garlic, sweat—and perfume!” Anyone who has ever ridden on the metro in Paris on a hot summer day can likely relate to this “gripe,” in this case expressed by American servicemen posted in France after the end of World War II in 1945. Although a severe shortage of soap caused by four years of German occupation made the odor on the metro worse, a crowded metro is still not a pleasant place to be.

Since President Charles de Gaulle’s decision in 1966 to withdraw from the integrated North Atlantic Treaty Organization (NATO) command structure and to expel American bases from France, no wide-scale interaction has occurred between American and French airmen. For many American Airmen, their direct impressions of France and the French likely depend upon what they retain from a weekend visit to Paris or Euro Disneyland from their bases in Germany. Without any other references, Airmen may have picked up opinions and stereotypes unwittingly from pop culture, from other Airmen, from their families, and so forth. Insidiously, they become part of an Airman’s mind-set. Although complaints about the smell on the French metro may seem innocuous, other commonly held stereotypes reflect underlying misunderstandings and prejudices against the

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French. At a time in which the Department of Defense (DOD) has identified “building partnerships” as one of its essential core competencies and the Air Force has embarked on an ambitious “Global Partnership Strategy,” these prejudices are counterproductive, impeding the very partnership the service seeks with the *Armée de l’Air* (French air force). These partnerships become crucial as the DOD reduces its size and looks to cut costs whenever possible, thus leveraging off the strength of partnerships.

### Identifying the Problem: Francophobes, They Are among Us

Last year, the saga of the sexual assault charges brought against Mr. Dominique Strauss-Kahn, a Frenchman and former director of the International Monetary Fund, once again revealed the all-too-familiar anti-French sentiments that exist in the United States. These sentiments are often evidenced by the open bashing of the French by everyday Americans on television, in the newspaper, and on the Internet. Justin Vaïsse, historian and researcher at the Brookings Institution, identified four categories of “francophobes” in the United States, including the State Department and the diplomatic realm; liberals; conservatives and neoconservatives; and the Jewish-American community.<sup>1</sup> Certainly, American military members likely fit into one of the three latter groups, but it is instructive to consider them separately as a fifth group that holds predictable (and negative) views of the French. As a distinct subculture within American society, US military members are particularly sensitive to certain actions of the French, such as their perceived abandonment of NATO in 1966, the refusal to grant overflight of French airspace in the 1986 bombing of Mu‘ammar Gadhafi’s compound in Libya, and, of course, the most recent flare-up over the invasion of Iraq in 2003.

A case in point: at the Air Force Association’s annual convention held in September 2011 in Washington, DC, Charles Krauthammer delivered a keynote address in which he outlined the current geopolitical landscape and national security challenges. This serious presentation addressed the threat posed by Iran and the proliferation of nuclear weapons. He made the point that nuclear weapons in and of themselves don’t pose an existential threat but that the possessor could. He noted that Americans aren’t threatened by Great Britain’s having such weapons and that, with the dissolution

of the Soviet Union, we are no longer worried about a nuclear exchange with the Russians. Nor are we concerned about the French, Krauthammer declared, but then seemed to reconsider—well, we’re not so sure about the French. Alas, thence it came, out of the blue (no pun intended), an impromptu joke—and, of course, it was “just a joke.” However, it wasn’t so much the joke but the resultant laughter that resounded in the hall filled with senior Air Force officers, chiefs, and noncommissioned officers which made clear to even the most casual observer—and to the French *aviateurs* in the audience—the particular perception we American Airmen have of our “enemy.” This took place on the same platform from which senior Air Force leaders invoked the necessity to build global partnerships and extolled the virtues of French and other European airmen.

This is not a new phenomenon. Nor is it a perception that began, as some believe, with the recalcitrant President de Gaulle and his decision to withdraw France from the integrated military command structure of NATO. Back in 1945, negative perceptions and stereotypes about the French were so prevalent amongst American GIs stationed in postwar France that the Army Department felt compelled to produce a small handbook, *112 Gripes about the French*. Issued to enlisted personnel, it served as a tool to defuse the growing tension between the American military and the locals.<sup>2</sup> Set out in a question-and-answer format, *112 Gripes about the French* posed a series of complaints about the French and then provided a commonsense rejoinder to each, doing so, according to the original editors, not “to ‘defend’ the French or to chastise Americans who don’t like the French” but to give average American Soldiers a fuller understanding of their hosts. In a straightforward manner, it presented “facts and judgments which even the well-intentioned may tend to overlook.”<sup>3</sup>

In the same spirit, this article addresses three stereotypes of the French that many American Airmen hold—or, one could say, *still* hold, since they are all gripes taken directly from the 1945 handbook. Like that publication, this article does not make a conclusive attempt to “convince those who are hopelessly prejudiced.” Rather, it offers a different perspective—an opportunity to rethink stereotypes that, unless checked, form the sole basis of one’s perspective of an important ally. Like the common cold, that viewpoint often spreads to others; thus, as did the Army pamphlet, at a minimum it seeks to “keep others from being infected by the same lamentable

virus.”<sup>4</sup> However, in a more positive sense, the article hopes to complement the various Air Force efforts under way to build an enduring partnership with one of the most capable air forces on the planet, as recently demonstrated in the air operations over Libya. Reexamining our own perceptions represents an important first step in this effort.

### We Saved the French (Twice) . . . How Can They Be So Ungrateful?

*112 Gripes about the French:* “We came to Europe twice in twenty five years to save the French. . . . We’re always pulling the French out of a jam. Did they ever do anything for us? . . . They’ve forgotten. They’re ungrateful.”<sup>5</sup>

These were among the first gripes addressed in 1945, complaints that continue to manifest themselves to this day. Their expression is evident in the many jokes found on the Internet, such as the following: “Q: What English word has no equivalent in the French language? A: Gratitude.”<sup>6</sup>

To this day, when many Americans think of France, they recall the valiant acts of courage displayed by American Soldiers as they fought in the trenches of World War I and as they landed on the beaches of Normandy on D-day, 6 June 1944. The following citation sums up what many Americans, and certainly American military members, may think regarding French gratitude for American intervention:

France is under a solemn obligation to the United States, as a matter of honor and gratitude for our having saved her independence in two terrible wars, and our having expended so much American wealth for her sake in peacetime, to refrain from enacting any measure . . . that would disclose to us . . . that she is unmindful of America’s immeasurable sacrifices and generosity.<sup>7</sup>

Interestingly, this observation appeared in a newspaper editorial more than 60 years ago, but it still accurately captures the perspective of many Americans. Nonetheless, before we examine the perceived French lack of gratitude for these interventions, let’s travel back in time to another conflict that would determine the survival of our own nation. The year was 1778; the conflict was the American Revolutionary War.

Let’s start here because, simply put, had the French not saved America in the Revolutionary War, America could not have saved the French in 1944. In February 1778, two years into the war, things were going badly for

the Americans, and America desperately sought France's help. General Washington unequivocally expressed this desperation in a letter imploring help from France: "We are at this hour suspended in the balance; not from choice but from hard and absolute necessity. . . Our troops are fast approaching nakedness. . . our hospitals are without medicines and our sick without nutrition. . . in a word, we are at the end of our tether, and. . . now or never our deliverance must come."<sup>8</sup> The needed deliverance from France did come, as the United States entered into its first and only formal alliance prior to World War I. The Army's pocket guide reminded American GIs that

France loaned the thirteen states \$6,000,000—and *gave us* over \$3,000,000 more.

45,000 Frenchmen volunteered in the army of George Washington.—They crossed the Atlantic in small boats that took two months to make the voyage.

Washington's army had no military engineers; it was French engineers who designed and built our fortifications (emphasis in original).<sup>9</sup>

Thus, the beleaguered Continental Army received new life. To the very end, French assistance proved crucial—witness the actions of the French navy in securing the British surrender at Yorktown in 1781.<sup>10</sup>

Ten short years later, the French Revolution and France's subsequent war with England and other European monarchs put the "gratitude" of the young United States to the test. On one side were men like Thomas Paine and Thomas Jefferson, who argued that America must come to revolutionary France's aid to demonstrate gratitude for previous French assistance.<sup>11</sup> Alexander Hamilton, however, countered their proposal, saying that the country's first obligation was to itself and that it should act not on sentiment but according to the national interest. He made the point that, in helping the Americans, France had served its own national interests.<sup>12</sup> Accordingly, history shows that Charles Gravier de Vergennes, the French foreign minister, explained the French rationale exactly along completely nationalistic lines: "First, it will diminish the power of England, and increase in proportion that of France. Second, it will cause irreparable loss to English trade, while it will considerably extend ours. Third, it presents to us as very probable the recovery of a part of the possessions which the English have taken from us in America."<sup>13</sup>

Thus, Hamilton, who served at the Battle of Yorktown and knew firsthand the essential role played by the French, contended that America must

now also look after its own interests. In the end, Washington accepted Hamilton's arguments rather than those of Paine and Jefferson, and even though the formal alliance with France had never been dissolved, he issued the Neutrality Proclamation in 1794. Additionally, seven years later, President Jefferson himself had to change his approach. Even though his foreign politics had always been friendly to France and hostile to Britain, the dispute over the control of New Orleans, through which so much of the nation's commerce passed, forced him to threaten an alliance with Britain and war against Napoleon.<sup>14</sup>

Was Jefferson, the former ambassador to France, *ungrateful*? Had he *forgotten* his friends in Paris, of whom he said, "A more benevolent people I have never known, nor greater warmth and devotedness in their selected friendships."<sup>15</sup> Or had Washington, who developed such an intimate friendship with the Marquis de Lafayette, forgotten his indebtedness to the French for the role they played? After all, on the day of the British surrender, Washington said, "I wish it was in my power to express to Congress how much I feel indebted to the Count de Grasse and his fleet."<sup>16</sup>

At the time, many Frenchmen felt betrayed by their "unreliable" ally, a sentiment that would appropriately describe how many Americans feel today about the French. However, Hamilton did not say that gratitude, benevolence, and generosity had no place. He simply argued that these were sentiments left to *individuals*, not governments. In declaring its neutrality, the young American republic was simply acting in its own national self-interest, knowing that entangling itself in European affairs could spell doom for the fledgling nation. As Elbridge Gerry, a signer of the Declaration of Independence wrote, "Perhaps one principle, self interest, may account for all."<sup>17</sup>

With this historical backdrop, one can see the American involvement in both world wars in a different light. In June 1940, as Germany was routing the French army, the French prime minister cabled President Franklin Roosevelt the following plea, resembling George Washington's to the French during the American Revolutionary War: "If you cannot give to France in the coming hours the certainty that the United States will enter the war in a short time . . . the destiny of the world will change. . . . You will then see France go down like a drowning man and disappear, after having thrown a last look toward the land of liberty where she sought salvation."<sup>18</sup>

Certainly such an emotional plea, coupled with American gratitude for the French intervention in the American Revolution, would spur the United States into action, right? Not quite. The United States would wait a year and a half to enter the war, after the Japanese attack at Pearl Harbor, and another two years to disembark the first troops on the other side of the Atlantic Ocean in North Africa.

On the eve of the D-day invasion of Normandy, young GIs waited to risk their lives for their country, an act that requires courage. To do so for another country might demand more convincing. To help prepare them, the Army Department issued each GI a small guide, reminding them of why they were about to risk their lives for France:

The Allied offensive you are taking part in is based upon a hard-boiled fact. It's this. We democracies aren't just doing favors in fighting for each other when history gets tough. We're all in the same boat. Take a look around you as you move into France and you'll see what the Nazis do to a democracy when they can get it down by itself.

In "Mein Kampf," Hitler stated that his plan was to destroy France first, then get England, after which he would have the United States cornered without a fight. The Allies are going to open up conquered France, re-establish the old allied liberties and destroy the Nazi regime everywhere.<sup>19</sup>

One year later, as American GIs griped about life in postwar France, the Army Department felt it necessary to remind them, in a straightforward manner, why the United States intervened in the first place:

We didn't come to Europe to save the French, either in 1917 or in 1944. We didn't come to Europe to do anyone any favors. We came to Europe because we in America were threatened by a hostile, aggressive and very dangerous power.

In this war, France fell in June of 1940. We didn't invade Europe until June of 1944. We didn't even think of "saving the French" through military action until after Pearl Harbor—after the Germans declared war on us. We came to Europe, in two wars, because it was better to fight our enemy in Europe than in America. . . .

American security and American foreign policy have always rested on this hard fact: we cannot permit a hostile power on the Atlantic Ocean. We can not be secure if we are threatened on the Atlantic. That's why we went to war in 1917; that's why we had to fight in 1944. And that's why, as a matter of common sense and the national interest, President Roosevelt declared (November 11, 1941): "The defense of any territory under the control of the

French Volunteer Forces (the Free French) is vital to the defense of the United States.”<sup>20</sup>

Thus, much like the French intervention in the American Revolutionary War, these citations make clear that the rationale for saving the French was clearly based on national self-interest. This is not to say that personal gratitude for the American intervention in France is not merited or doesn't exist. On the contrary, as any American who has traveled in Normandy or other regions of France can attest to, ample evidence exists that the French are grateful and hold a special reverence for the Americans who twice traveled across the ocean to fight alongside their countrymen in the world wars. However, as Hamilton effectively pointed out over two centuries ago, no matter how strong and appropriate these personal sentiments, they do not directly translate into national policy. One only has to look to the debate about American intervention in Libya to validate that at the end of the day, leaders must justify why or why not it is in the national interest to ally with another nation and support a foreign policy or intervene militarily at a given time and place. Before addressing the next American stereotype of the French, we close this section by examining President Barack Obama's speech at the National Defense University in March 2011, in which he emphasized the primordial place of national interest:

But when our *interests* and values are at stake, we have a responsibility to act. . . .  
 . . . If we waited one more day, Benghazi . . . could suffer a massacre.  
 It was not in our *national interest* to let that happen. . . .  
 . . . On the one hand, some question why America should intervene at all—even in limited ways—in this distant land.  
 . . . Given the costs and risks of intervention, we must always measure our *interests* against the need for action. . . .  
 America has an *important strategic interest* in preventing Gaddafi from overrunning those who oppose him. . . . I am convinced that a failure to act in Libya would have carried a far greater price for America (emphasis added).<sup>21</sup>

### The French Would Rather Surrender than Fight

112 *Gripes about the French*: “The French have no courage. . . . They got off pretty easy in the war. . . . They just waited for us to liberate them. Why didn't they put up a fight?”<sup>22</sup>

A second major gripe, ever present in American culture, is that the French are cowards, unwilling to stand and fight. As expressed in American pop culture, the French are “cheese-eating surrender monkeys.”<sup>23</sup> Other degrading references abound, such as the Subway restaurant advertising campaign of 2005, which portrayed a chicken dressed as a French soldier under the caption “France and Chicken—Somehow it just goes together.”<sup>24</sup> Further, jokes such as the following abound on the Internet and on late-night television: “I don’t know why people are surprised that France won’t help us get Saddam out of Iraq. . . . After all, France wouldn’t help us get the Germans out of France.”<sup>25</sup>

Not much seems to have changed in 65 years. These same sentiments existed in 1945, as American GIs complained that the French hadn’t put up a real fight against the Germans. The US Army addressed this gripe head-on:

No one—least of all the French themselves—will try to deny the enormity of the defeat and the humiliation France suffered in 1940. French military leadership and strategy was tragically inadequate. But this does not mean that the French did not put up a “real fight.”

In the six week Battle of France, from May 10 to June 22, 1940, the French lost, in military personnel alone, 260,000 wounded and 108,000 killed. A total of 368,000 casualties in six weeks is not something to pass off lightly.<sup>26</sup>

All told, during World War II alone, 1,115,000 French men, women, and children died, suffered wounds, languished in concentration camps, or died as hostages—not exactly what one would call “getting off easy.”

Furthermore, like the American Soldiers stationed in France after the war, most Americans today know very little about the brave French citizens who continued to take the fight to the enemy during the German occupation. Again the US Army reminded its troops of French courage during the war:

- They sabotaged production in war plants. They destroyed parts, damaged machinery, slowed down production, changed blue-prints.
- They dynamited power plants, warehouses, transmission lines. They wrecked trains. They destroyed bridges. They damaged locomotives.
- They organized armed groups which fought the German police, the Gestapo, the Vichy militia. They executed French collaborationists.
- They acted as a great spy army for SHAEF [Supreme Headquarters Allied Expeditionary Force] in London. They transmitted as many as 300 reports a day to SHAEF on German troops’ movements, military installations, and the nature and movement of military supplies.



- They got samples of new German weapons and explosive powder to London.
- They ran an elaborate “underground railway” for getting shot-down American and British flyers back to England. . . . On an average, one Frenchman was shot every two hours, from 1940 to 1944 by the Germans in an effort to stop French sabotage and assistance to the Allies.<sup>27</sup>

However, as poignant as these examples may be, one does not have to go as far back as World War II to find instances of French willingness to fight. Since the fall of the Berlin Wall, the French have intervened in many conflicts in Africa and have courageously fought alongside Americans in nearly every recently assembled coalition, including the first Gulf War, Bosnia, Kosovo, and Afghanistan—with the notable exception of Iraq. However, despite jokes to the contrary, French opposition to the second Iraq war had nothing to do with cowardice, stemming instead from confidence in their intelligence sources, which had concluded that Saddam Hussein didn’t possess weapons of mass destruction. Thus, they pushed for further weapons inspections to bear this truth out, arguing that Saddam did not pose the immediate threat portrayed by the American administration.<sup>28</sup>

Currently, the French have the fourth largest contingent in Afghanistan and, correspondingly, have had the fourth largest number of servicemen die in the conflict—78 to date.<sup>29</sup> Beyond Afghanistan, France is one of the few countries with air force bases outside its territory, having them in strategic hot spots such as Djibouti as well as the United Arab Emirates, directly across the Strait of Hormuz from Iran. Finally, and perhaps surprising to many people, the French air force capably led the coalition’s enforcement of United Nations Resolution 1973, which called for a “no-fly zone” over Libya to protect the civilian population.

In addition to these efforts at the national level, one can reflect on two recent events that highlight individual acts displaying both American and French courage in the current conflict in Afghanistan. Recently, Gen Norton A. Schwartz, the Air Force chief of staff, awarded the Distinguished Flying Cross with valor to a young French major in the 41st Rescue Squadron from Moody AFB, Georgia. During a deployment to Afghanistan, the major gallantly launched as part of a four-ship task force sent at night to rescue a British casualty whose injury put the lives of 160 British soldiers in jeopardy.

Evading rocket-propelled grenades, he successfully rescued not only that soldier but also another, enabling the ground unit to complete its mission.

Three days previously, under the austere backdrop of the forward operating base in Kapisa, French brigadier general Emmanuel Maurin, commander of French ground troops in eastern Afghanistan, awarded three American Airmen the French National Defense Medal for their heroic actions during a nighttime helicopter rescue of two French airmen whose Gazelle attack helicopter had crashed in inclement weather. Dispatched to find the downed pilots, they dropped off their rescue crew, who found the French pilot waving a strobe light but unable to move his legs. The crew then found the copilot, still strapped to his seat, which had dislodged and slid to the back of the helicopter. The 37-year-old veteran of conflicts in Croatia, Kosovo, and the Ivory Coast was valiantly struggling to breathe, so the Airmen made a small incision in his neck and inserted a breathing tube. The helicopter ferried the two injured men to the hospital at Bagram Airfield. Although the pilot survived and is expected to walk again, tragically, the copilot died, leaving behind a widow and four children in France.

As these vignettes poignantly demonstrate, the French serve courageously beside their American allies in Afghanistan, and in some cases, like the French copilot, they die *pour la patrie* (for the homeland). In the above anecdotes, the three *Americans* who received the *French* National Defense Medal for their daring rescue would not find humor in jokes about French cowardice. Neither would the downed British soldiers, saved by a young *French* major (*commandant*), decorated by General Schwartz for his service while serving as an exchange officer with the US Air Force. General Schwartz stood alongside Gen Jean-Paul Paloméros, the French chief of staff, in front of the Lafayette Escadrille Memorial—the final resting place of 66 of the very first American Airmen, laid to rest alongside their French squadron commanders.<sup>30</sup> The two air chiefs observed a moment of silence for five French soldiers killed that day in an ambush in Afghanistan—a poignant reminder of the military calling, regardless of the color of the uniform or the patch on the shoulder. There were no gripes or jokes about cowardice, surrender, or running away from a fight. As we move on to the third stereotype, it's time to silence and lay to rest these gripes and jokes as well.

## We Can't Rely on the French . . . They Are Too Damned Independent

*112 Gripes About the French:* “We can’t rely on these French. . . . The French are too damned independent.”<sup>31</sup>

The story is familiar to most American Airmen—and it seems like just yesterday. The dictator of a Middle Eastern country defies the West as he provocatively evokes his dream of uniting other Arab countries under his leadership. Western countries deem his actions a threat, but one nation presses to allow more time, to find a diplomatic solution to the crisis, while another, though continuing diplomatic efforts, considers further diplomacy futile and builds a coalition for war. In the end, one goes to war without the support of the other, feeling angry and betrayed by the lack of support from this unreliable ally.

In 1945 American Soldiers stationed in France griped that the United States can’t rely on the French. To this day, much of the American public, including many American Airmen, holds essentially the same sentiment, particularly after French opposition to the second Iraq war. In response, the House of Representatives replaced French fries with “Freedom Fries,” and many members called for a boycott of French products, reminiscent of the response in the mid-1960s when President de Gaulle attacked the existing international monetary order that privileged the status of the dollar as a reserve currency. American businesses responded to de Gaulle by threatening to boycott French imports, and one New York bar owner appeared on TV “cleansing” his wine cellar by pouring bottles of Bordeaux down the drain.<sup>32</sup>

These same sentiments existed late in 2003, when Thomas Friedman, a popular columnist for the *New York Times*, wrote a piece entitled “Our War with France.” He began his column with these words: “It’s time we Americans came to terms with something: France is not just our annoying ally. It is not just our jealous rival. France is becoming our enemy.”<sup>33</sup> Along the same lines, authors John J. Miller and Mark Molesky wrote a book published the following year in which they objected to the popular historical view that France is America’s oldest ally, rather unabashedly declaring that France is America’s oldest enemy.<sup>34</sup>

At the same time, during the run-up to the 2004 campaign for the presidency, Republicans attacked Democratic candidate John Kerry for being too close to the French.<sup>35</sup> Late in 2003, Tom Brokaw asked Kerry, “What about the French? Are they friends? Are they enemies? Or something in-between at this point?” Kerry responded, “The French are the French.” Chastised by Brokaw for the “profound” statement, Kerry responded, “Well, trust me . . . it has a meaning and I think most people know exactly what I mean.”<sup>36</sup>

What exactly does this mean? Perhaps Kerry, a veteran of the Vietnam War, had read somewhere the Army’s response in 1945 to this same gripe about French unreliability: “[It] depends on what you mean by ‘rely.’ If you expect the French to react like Americans, you will be disappointed. They are not Americans; they are French.”<sup>37</sup> Or perhaps it simply means that France is a sovereign nation and acts in its own interest. As does the United States. Does that mean that America can’t rely on the French? Does it also mean that the French cannot rely on America?

Let’s return to the scenario at the beginning of this section. Most readers will recall vividly the debate leading up to the second Iraq invasion. Americans are less well versed in the circumstances surrounding the Suez crisis in 1956, in which case the tables were turned, and one could consider France, not the United States, the “victim” of opposition by an “unreliable” ally. At that time, the United States favored diplomacy over force to confront a Middle East dictator. During the Suez crisis, President Dwight Eisenhower used a variety of means to undermine French and British efforts to forcibly take back control of the Suez Canal, which the leader of Egypt, Gamal Abdel Nasser, had nationalized. The brief conflict ended in Britain’s and France’s total humiliation and weakened their standing as global powers. As evidence, Douglas Dillon, the American ambassador to France, warned Washington of the “bitter flood of anti-American feeling now seething through France.” More specifically, he noted the “deep emotional conviction” that in the Suez affair the United States proved “callously indifferent” to the vital interests of its principal allies and stood ready to “humiliate them unnecessarily.”<sup>38</sup> A French poll indicated that as many as half of the French population had either “no confidence” in the United States or “not much.”<sup>39</sup> From this point forward, whereas the British decided they could never go to war without the United States, the *French* concluded they could

no longer *rely on the United States*. For de Gaulle, who two years later would become the president of France, these were formative events, certainly influencing his later decision in 1966 to withdraw from the integrated military command structure of NATO. Of course, as mentioned in the introduction, his action is exactly the reference point for many *Americans* to say that we cannot *rely on the French*.

When one gripes about “reliability,” one must keep in mind what we discussed in the first section—that nations act in their own self-interest. Washington never lost sight of this fact even in the midst of the Revolutionary War. He was concerned that America might defeat Britain only to have France reclaim Quebec. Washington was “heartily disposed to entertain the most favorable sentiments” of the French, but he rested on “a maxim founded on the universal experience of mankind, that no nation can be trusted farther than it is bound by its interests.”<sup>40</sup> In a more current context, as Robert A. Levine, economist and defense analyst for the RAND Corporation, aptly perceives, “the USA and France do have different interests. And on those interests, the USA will continue to act as a unilateral superpower. It will because it can.”<sup>41</sup> And France will continue to act, well, as Senator Kerry might say, like the French.

It is important once again to note that this gripe about reliability and independence existed well before de Gaulle became president of France and has continued throughout the half century that has since passed. In fact Franco-American relations have followed a similar cycle—with every change in administration, a certain rapprochement occurs between France and the United States, and then inevitably something happens that pushes the two countries apart.<sup>42</sup> One can only understand these rapprochements and cyclical “falling-outs” not as a question of reliability but within the context of two sovereign nations acting within their own self-interest. They don’t, however, automatically lead to the conclusion that either country is “unreliable.”

In their book, Miller and Molesky paint the picture of how French and American national interests have collided over the past three centuries, beginning with the massacres of American colonists during the French and Indian Wars a quarter century before we declared our independence from Great Britain. Nonetheless, one has to wait until the second-to-last page of the book to find the unsatisfying conclusion—where the authors pose the question about what their 250-page tirade against the French means for the

future. On the one hand, they posit that “it may not even matter whether France is an ally of the United States. . . . As the United States rose to the position of the world’s most powerful country, France often has been relegated to the role of a mere irritant.”<sup>43</sup> On the other hand, they conclude that the “future undoubtedly will bring new challenges, including many that cannot be anticipated.” In this light, they write that it would be helpful to have France on board with the US agenda, but “given the distorted prism through which the French view their role in the world, this may be difficult.” They conclude by asking, “Will the French, in short, continue to be the French?” In other words, will they continue to maintain a “shortsighted view of their own national interest,” or will they realize “that the twenty-first century requires a wholly different vision?”<sup>44</sup>

To answer this question, one can look to a much-quoted editorial that appeared in *Le Monde*, the largest French daily newspaper, two days after the terrorist attacks of 11 September 2001 (9/11). The writers boldly declared in their headline, “*Nous Sommes Tous Américains*” (We are all Americans). Many Americans, and perhaps authors such as Miller and Molesky, would like this to mean that finally, after 300 years of difficult relations, the French have seen the light. Well, not exactly. The editorial was more than an outpouring of emotion after the tragic attacks—it claimed that the latter ushered in a new era, one far removed from now-distant cries of joy as the wall separating the East and West fell two decades before. It boldly stated that even with all that divides us, France would always stand side by side with America on the most vital of issues—the liberty of mankind. In this new struggle against a more ubiquitous enemy, the West will need even more resolve and unity. In this way, *Nous Sommes Tous Américains*.<sup>45</sup>

In this new era, we don’t have the luxury of dismissing those with whom we disagree as “mere irritants” or branding them the enemy. As emphasized in the recently released national defense strategy, the United States must partner with its European allies.<sup>46</sup> Yes, we need the French. Through professional military education, American Airmen have become familiar with Sun Tzu, who wisely wrote that to win a war, one must know the enemy. But in this new post-9/11 era, in which fiscal realities and the diverse nature of the threat necessitate a network of global partnerships, it is perhaps more important—and at times even more difficult—to understand

our allies. As articulated by Secretary of the Air Force Michael Donley and General Schwartz in the *2011 US Air Force Global Partnership Strategy*,

The impacts of the global economic crisis, violent extremism, shifting regional balances of power, and the proliferation of advanced technologies will characterize the future security environment, making it unlikely for any one nation to address every global challenge and priority alone. With this guidance, we are increasing our emphasis on developing access and relationships with international partners while forging coalitions to meet both current and emerging global strategic challenges. Successful partnership development optimizes interoperability, integration, and interdependence between coalition forces while providing our partner nations the capability and capacity to resolve national security challenges on their own merit.<sup>47</sup>

As the *Le Monde* editorial observed, both France and the United States realize that what unites them, such as common democratic values, necessitates a vibrant partnership to meet the challenges of this new era. We need to move beyond our stereotypes in order to build a strong and lasting partnership with France, no matter how unreliable, independent, or recalcitrant the French may seem to be.<sup>48</sup>

## Conclusion

As noted in the introduction, presenting a conclusive defense of an ally that we have historically perceived as independent, unreliable, ungrateful, and even cowardly lies beyond the scope and intent of this article. Rather, it offers a starting point for further reflection. Are the French reliable? “The French are the French.” This does have meaning. Our challenge lies in understanding what this means: how the French see the world. France acts in its perceived national self-interest, as does the United States. Although people may dispute what interests are “vital,” in the 65 years since *112 Gripes about the French* appeared, France and the United States have steadfastly supported each other in vital interests.

In conclusion, though not yet codified in Air Force doctrine, the Air Force has adopted the DOD’s joint capabilities area concept of building partnerships, defined as “the ability to set the conditions for interaction with partner . . . leaders, military forces or relevant populations by developing and presenting information and conducting activities to affect their perceptions, will, behavior, and capabilities.”<sup>49</sup> Despite the soundness of this definition, this article suggests that perhaps the first step in building a partner-

ship and “set[ting] the conditions for interaction” resides not in affecting *others’* perceptions but in challenging our own—not by excusing others but by examining our own stereotypes through the lens of history and common sense. One often hears the slogan “the mission begins at home.” As Airmen, our efforts to build global partnerships must also begin at home, and in these times of fiscal austerity, they can begin with a simple, low-technology, cost-effective tool—a mirror.

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