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When States Fall Apart  
by  
Benjamin Aaron Oppenheim

A dissertation submitted in partial satisfaction of the  
requirements for the degree of  
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in  
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of the  
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Committee in charge:

Professor Steven Weber, Chair  
Professor Ron Hassner  
Professor Edwin Epstein  
Professor George Rutherford

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## Abstract

### When States Fall Apart

by

Benjamin Aaron Oppenheim

Doctor of Philosophy in Political Science

University of California, Berkeley

Professor Steven Weber, Chair

Failed states—countries in which governing institutions have corroded or collapsed— are considered by many scholars to pose a grave threat to global security. Policymakers broadly share this view. The United States' 2002 *National Security Strategy* flatly declared that “America is now threatened less by conquering states than by failing ones”, while the United Nations warns of the global dangers posed by states that cannot meet their responsibilities as sovereign powers.

The conventional wisdom on the risks posed by failed states represents a significant shift in international relations scholarship, which has traditionally emphasized the threat that strong states pose to weaker polities. It also represents a shift in foreign policy, as fears of state failure have flooded resources into shoring up weak states and reconstructing failed ones. But do failed states pose a global security threat? Despite the stakes, there has been little empirical research that isolates and tests the causal mechanisms linking state failure with specific threats. This project empirically assesses the consequences of state failure, through an investigation of several security threats of global significance: transnational terrorism, and pandemic disease outbreaks. The core finding of the research is that failed states largely do not act as “exporters” of international security hazards. To the contrary, that the aspects of institutional incapacitation that analysts frequently highlight—broken security institutions, weak public service provision, corroded infrastructure— often render failed states systematically *less* likely to propagate security threats than higher-capacity states.

However, though fragile and failed states do not pose a generic and grave international security risk, they remain sites of endemic violence and instability. And so while the security imperative for engagement may be limited, the moral case remains. Accordingly, the second element of the dissertation explores the dynamics of statebuilding and reconstruction, focusing in particular on the linkage between institutional reconstruction and legitimacy. While international efforts to reconstruct failed states have generally focused on legitimation through the establishment of liberal-democratic institutions, the results suggest that delivery of basic services, rather than governance processes alone, play a vital role in structuring popular perceptions of state legitimacy. Building systems to effectively deliver services is necessarily a long-term process, implying that efforts to reconstruct fragile states will need to be sustained if they are to succeed.

To my family and friends. And especially to Liz.

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First and foremost, to Steve Weber, my advisor at UC Berkeley, who pushed me to ask big questions, to be open to unexpected answers, and find unorthodox ways of getting traction on messy problems. I'm grateful to George Rutherford, Ron Hassner, and Ed Epstein, who provided terrific feedback, advice, and questions throughout. Stewart Patrick's 2006 article on the myths and misunderstandings of the risks generated by failed states was an early inspiration for this research, and along the way he provided many illuminating conversation on both theory and policy implications, for which I'm most grateful.

Many friends and colleagues, near and far, provided an intellectual community and constant source of support. To Peter Bartu, Kelly Greenhill, Nat Colletta, Christian Ford, Michael Weintraub, Eric Nonacs, Nelson Gonzalez, Enzo Nussio, Johanna Söderstrom, Jamie O'Connell, Nina Kelsey, Daniel Katz, Felicity Kolp, Jason Klocek, Genevieve Lester, Sebastian Kaplan-Sears, and Joshua Kagan—*thank you*.

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No idea makes it far without data. I am especially grateful to David Carment and Stewart Prest of the Canadian Indicators for Foreign Policy [CIFP] project, whose generosity and openness made it possible to do cross-national research that directly addressed the ways in which policymakers define and understand fragile states. Harrison Dekker, at UC

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Early on, I received generous support for two speaker series that helped me to refine and better understand the contours of the questions I was asking. UC Berkeley's Religion, Politics, and Globalization Program, and the Berkeley Human Rights Center, generously supported a speaker series on fragile states and global security challenges. This series brought a number of wonderful experts and practitioners to Berkeley, and I'm grateful to Sarah Bamberger and Camille Crittenden for supporting the initiative. The Canadian Consulate of Northern California— and particular, David Stewart and Molly Colin— sponsored several roundtables on international engagement in fragile states. This series helped me think about international response capacity: what it assumed, how it performed, and how it might be improved.

Lastly, I gratefully acknowledge support provided by a dissertation fellowship from the University of California Institute on Global Cooperation and a Simpson Fellowship from UC Berkeley's Institute of International Studies, and the vibrant intellectual support provided by a visiting fellowship with Uppsala University's Forum on Peace, Democracy, and Justice.

# 1: Introduction and framework

*“America is now threatened less by conquering states than by failing ones...”<sup>1</sup>*  
—2002 National Security Strategy of the United States of America

*“People now place their hope in God,  
since the government is no longer involved in such matters”<sup>2</sup>*  
—unknown

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<sup>1</sup> White House, *2002 National Security Strategy of the United States*, p. 1

<sup>2</sup> Un-named citizen of Armenia, quoted in Deepa Narayan, Raj Patel, Kai Schafft, Anne Rademacher, Sarah Koch-Schulte, *Can Anyone Hear Us? Voices From 47 Countries*, in *Voices of the Poor, Volume I*, World Bank, 1999 p. 78. Retrieved at: <http://siteresources.worldbank.org/INTPOVERTY/Resources/335642-1124115102975/1555199-1124115187705/vol1.pdf>



## 1. The problem of disorder

During the late 20th century and early 21st century, the major narratives on the role of power in international politics were inverted. The theory and practice of statecraft have traditionally focused on the distribution and exercise of power: which states have power, how power is derived and deployed, and how its exercise is shaped or constrained by ideas and norms. Yet during this period, national security and international relations debates focused great attention on the threats and challenges introduced by fragile and failed states; that is, on countries that *lacked power* and capacity to govern their own territory, much less project it abroad.<sup>3</sup> During this period, as one influential theorist and commentator put it, “weak and failing states have arguably become the single most important problem for international order.”<sup>4</sup>

Why would failed states—countries in which governing institutions have corroded or collapsed—pose a problem for the rest of the globe? The very weakest polities are now considered by many scholars to drive an astonishing array of transnational security threats. International terrorism, pandemic disease outbreaks, criminal networks, the “spillover” of civil wars into neighboring countries, are all thought to emanate from the world’s un- or under-governed spaces.<sup>5</sup> Policymakers share this view. Indeed, the consensus regarding the scope and intensity of danger posed by the collapse of governing institutions is shared by a remarkable range of actors, including powerful states and leading multilateral institutions.

The new conventional wisdom on the risks posed by broken states represents not only a shift in theory, but a major reconfiguration of foreign policy practice, as fears of state failure have led governments to flood resources into shoring up weak states and reconstructing failed ones. Yet despite the scale of this shift, there has been little empirical research on the *consequences* of state failure, and little research that isolates and tests the

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<sup>3</sup> Kenneth Waltz, *Theory of International Politics*, 1979; Michael J. Mazarr “The Rise and Fall of the Failed-State Paradigm: Requiem for a Decade of Distraction” *Foreign Affairs*, January/February 2014; Leslie Gelb, *Power Rules: How Common Sense Can Rescue American Foreign Policy*, HarperCollins Publishers, 2009

<sup>4</sup> Francis Fukuyama, *State-Building: Governance and World Order in the 21st Century*, Cornell University Press, 2004, p. 92.

<sup>5</sup> Robert Rotberg, “Failed States, Collapsed States, and Weak States: Causes and Indicators”, in Rotberg, ed., *State Failure and State Weakness in a Time of Terror* 2004; Ashraf Ghani and Clare Lockhart, *Fixing Failed States*, 2008; Gerald Helman and Steven Ratner, “Saving Failed States”, *Foreign Policy*, Vol. 89, No. 3; Tonya Langford, “Things Fall Apart: State Failure and the Politics of Intervention”, *International Studies Review*, Vol. 1, No. 1; See also a volume building on the findings of the Center for Global Development’s *Commission on Weak States and US National Security*: Jeremy Weinstein, and Milan Vaishav, “A Mismatch with Consequences: U.S. Foreign Policy and the Security-Development Nexus,” in Birdsall, Vaishav, and Ayres, eds., *Short of the Goal: U.S. Policy and Poorly Performing States*, 2006; Francis Fukuyama, “The Imperative of Statebuilding”, *The Journal of Democracy*, Vol. 15, No. 2, p. 17

causal mechanisms linking state failure with specific threats.<sup>6</sup> The conventional wisdom on how to “fix” failed states is just as unsettled.<sup>7</sup> Despite dozens of international efforts to reconstruct broken states over the past few decades, success has been elusive.<sup>8</sup> And there is growing disagreement on how order can be reconstituted and sustained over the long-term.

My goal in this dissertation project is to help fill these gaps. First, to shed light on the consequences and implications of state fragility and failure. And second, to re-consider potential strategies for the reconstruction of broken states.

This introductory chapter begins by placing state fragility in historical and conceptual context. First, I trace two arcs of debate over the implications and consequences of state fragility, marking the shift from a predominantly humanitarian conceptualization weak states, which emphasized the domestic public health and human security consequences of their incapacitation, to the identification of weak states as a regional and then global security risk. Second, I trace debates over the conceptualization and measurement of state fragility and failure, and focus in particular on the ways in which analytical frameworks deployed to assess fragility have shaped models for reconstruction and recovery.

The chapter concludes with a short summary of the core arguments I advance in this research, and describes the organization of the dissertation.

## **2. The “coming anarchy”: from humanitarian dilemma to global security threat**

Institutional disorder is an old problem. The historical record shows numerous cases in which complex institutions of governance—institutions that had developed over hundreds of years—suffered acute failure and collapse, leading to widespread violence and enduring instability.<sup>9</sup> Episodic as well as persistent “non-governance” have remained problematic since the consolidation of the territorial state.<sup>10</sup> Yet state failure was first conceptualized and located as a foreign policy challenge at the close of the Cold War.

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<sup>6</sup> Notably: Stewart Patrick, *Weak Links: Fragile States, Global Threats, and International Security*, Oxford University Press 2011; and Susan Rice, Corinne Graff, and Carlos Pascual, eds., *Confronting Poverty: Weak States and National Security*, Brookings Institution 2010

<sup>7</sup> Michael Barnett, “Building a Republican Peace: Stabilizing States after War”, *International Security*, Vol. 30, No. 4, 2006; Roland Paris, *At War’s End: Building Peace after Civil Conflict*, Cambridge University Press, 2004; David Lake, “The Practice and Theory of U.S. State-Building,” *Journal of Intervention and State-Building*, Vol. 4, No. 3 2010

<sup>8</sup> *ibid.*

<sup>9</sup> Most notably: Norman Yoffee and George Cowgill, *The Collapse of Ancient States and Civilizations*, 1988; Joseph Tainter, *The Collapse of Complex Societies*, 1990; Jared Diamond *Collapse: How Societies Choose to Fail or Succeed*, Viking Press, 2005

<sup>10</sup> Angel Rabasa, Steven Boraz, Peter Chalk, Kim Cragin, Theodore W. Karasik, Jennifer D. P. Moroney, Kevin A. O’Brien, John E. Peters, *Ungoverned Territories: Understanding and Reducing Terrorism Risks*, RAND Corporation, 2007, retrieved at: [http://www.rand.org/content/dam/rand/pubs/monographs/2007/RAND\\_MG561.pdf](http://www.rand.org/content/dam/rand/pubs/monographs/2007/RAND_MG561.pdf)

The recognition of state failure as an international problem was in an important sense driven by frustrated expectations at the end of the Cold War. In contrast to the peace dividend that analysts had expected, the end of the Cold War instead delivered a rapid weakening and collapse of governing institutions in a number of developing countries, and a seemingly massive upwelling of civil war worldwide.<sup>11</sup>

Surveying the instability, Robert Kaplan claimed that the world was facing a “coming anarchy”, as governing institutions in poor countries corroded and collapsed, leaving hotbeds of anarchic violence, crime, disease, displacement, despair.<sup>12</sup> To a large extent, commentators took the new world disorder to reflect the unsettled nature of global politics: just as the (somewhat) predictable system of bipolar international order had been upset by the collapse of the Soviet Union, governing institutions at the national and subnational levels had also been pushed out of stable equilibrium, towards a dangerous unpredictability.<sup>13</sup>

The first wave of research on state failure identified the problem as an unanticipated externality of decades of superpower patronage. Sustained flows of patronage, along with strong norms regarding juridical sovereignty and the integrity of state structures, had allowed the weak states created through rapid decolonization processes to survive, despite institutional weakness, inept, kleptocratic leadership, and endemic corruption.<sup>14</sup> Further, many of these states had been tested by decades of superpower-sponsored proxy war. Unlike European processes of state formation, in which external conflict led to revenue bargaining and the solidification of effective bureaucracy, internal conflict in the developing world had led only to the hollowing out of the state, leaving institutions unable to maintain control over their territory and check internal challengers.<sup>15</sup>

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<sup>11</sup> The “explosion” in civil conflict has since been debunked, and the apparent rise accounted for by the slow and steady accumulation of new conflicts, stemming at least in part from the opportunities for insurgency created by state weakness. See James Fearon and David Laitin, “Ethnicity, Insurgency, and Civil War”, *American Political Science Review*, Vol. 97, No. 1, pp. 75-6, 88

<sup>12</sup> Robert Kaplan, “The Coming Anarchy”, *the Atlantic Monthly*, Volume 273, No. 2, 1994, p. 45

<sup>13</sup> | William Zartman “Posing the Problem of State Collapse”, in Zartman ed. *Collapsed States: The Disintegration and Restoration of Legitimate Authority* 1995

<sup>14</sup> Gerald Helman and Steven Ratner, “Saving Failed States”, *Foreign Policy*, Vol. 89, No. 3, Winter 1992/1993; Tonya Langford, “Things Fall Apart: State Failure and the Politics of Intervention”, *International Studies Review*, Vol. 1, No. 1. See also notably, Robert Jackson and Carl Rosberg, “Why Africa’s Weak States Persist: the Empirical and the Juridical in Statehood”, *World Politics*, Vol. 35, No. 1; Jeffrey Herbst, “Responding to State Failure in Africa”, *International Security*, Vol. 21; more recently, David Leonard and Scott Straus, *Africa’s Stalled Development: International Causes and Cures*, 2003, and Robert Bates, *When Things Fell Apart*, 2008

<sup>15</sup> Duffield argues strenuously to the contrary, that many political “projects” in weak states do not even aim to construct state-like governance systems to administer territory, and instead generate a political economy and resource extraction mechanisms that function without such systems. Nonetheless, the *result* of this process was the steady dissolution—or rolling back—of state structures. Mark Duffield “Post-modern conflict: Warlords, post-adjustment states and private protection” *Civil Wars*, Vol. 1 No. 1, 1998

In many post-colonial states, the end of the Cold War upset this already unstable equilibrium. With superpower patronage curtailed and only partially replaced by official development assistance, weak regimes quickly collapsed, leading to sustained civil wars and humanitarian crises.<sup>16</sup> The violent unraveling of the state was primarily cast in humanitarian terms. Some commentators cited the plight of citizens of failed states, who suffered greatly from violence, crime, disease, displacement, and despair.<sup>17</sup> Others feared that the depravity of violence, failure of governance, and simple scale of human despair would lead to a redefinition of humanity itself, leaving those trapped in failed states to fend for themselves.<sup>18</sup>

Perhaps most strikingly given later events, state failure was largely thought to be a geographically limited problem, afflicting those unfortunate enough to live in broken polities. Indeed, the various threats to human security and wellbeing were largely thought of as domestic: state failure was primarily seen as problem of internal “armed anarchy.”<sup>19</sup> To the extent that commentators addressed the transnational dimensions of state failure, these were delimited to neighborhood or regional effects: some cited the potential for conflict to spill over borders, drawing neighboring states into brush wars;<sup>20</sup> others worried about flows of refugees emitted by crumbling states, and the potential humanitarian burden placed on poor (but functional) neighboring countries.<sup>21</sup>

The circumscribed framing of the failed state problem is perhaps most stark and apparent with respect to disease outbreaks, a threat that is naturally contagious. Initially commentators focused not on the trans-border pathogenic threat posed by weak states, but instead on the possibility that impoverished states would become *isolated* from the international community by a “pathogenic wall”, worsening their already desperate circumstances.<sup>22</sup>

Although several early and influential analyses focused on conceptualizing state failure and identifying its sources,<sup>23</sup> the early research agenda on state fragility and failure focused largely on policy responses, ranging from peacekeeping to temporary

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<sup>16</sup> A.J. Christopher, “‘Nation-States’, ‘Quasi-States’, and ‘Collapsed States’ in Contemporary Africa”, *GeoJournal*, Vol. 43, p. 96

<sup>17</sup> Helman and Ratner, *ibid.*, pp. 3-5, Robert Kaplan, “The Coming Anarchy”, *the Atlantic Monthly*, Volume 273, No. 2, 1994, p. 45

<sup>18</sup> Jennifer Widner, “States and Statelessness in Late Twentieth-Century Africa”, *Daedalus*, Vol. 124, No. 3

<sup>19</sup> Robert Jackson, “Surrogate Sovereignty? Great Power Responsibility and ‘Failed States’”, Working Paper No. 25, Institute of International Relations, University of British Columbia, 1998 p. 3

<sup>20</sup> Kaplan, *ibid.*

<sup>21</sup> Helman and Ratner, *ibid.*

<sup>22</sup> Kaplan *ibid.*

<sup>23</sup> I. William Zartman *ibid.*; Widner, *ibid.*, Langford *ibid.*

international trusteeship.<sup>24</sup> The contours and consequences of state breakdown were dramatic and seemingly obvious. The analytic focus on the concepts, causes and treatment, of state failure—rather than its *impact* and *implications*—remained constant even as a sudden shock radically shifted how state breakdown was framed and understood.

### The transition to a security-driven agenda

It is little exaggeration to state that state failure became an international security problem on September 11<sup>th</sup>, 2001. Al Qaeda's use of Afghanistan as an operating base sensitized scholars and policymakers to the fact that political dynamics in poor, distant countries could have a profound impact on national security. The implications of state failure were quickly and dramatically re-written by a significant contextual change in international politics.<sup>25</sup>

The United States' 2002 *National Security Strategy*—the first prepared by George W. Bush's White House—flatly declared that “America is now threatened less by conquering states than by failing ones.”<sup>26</sup> The threat was not contained to Afghanistan. Indeed, the sudden emergence of a terrorist threat from a war-torn, poverty-stricken, and strategically marginal country cast weaknesses in other broken states in a more sinister light. Surveying this landscape, two senior U.S. government officials argued that governance failures in

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<sup>24</sup> For instance, Langford, *ibid.*, Jarat Chopra, “The Peace-Maintenance Response”, *Security Dialogue* Vol. 28, No. 2 1997; Michael Doyle, Ian Johnstone, and Robert Orr, *Keeping the Peace: Multidimensional UN Operations in El Salvador and Cambodia*, International Peace Institute, 1997, Michael Doyle and Olara Otunnu, eds., *Peacemaking and Peacekeeping for the New Century*, Rowman & Littlefield Publishers 1998, Jeffrey Herbst, “Responding to State Failure in Africa” *International Security*, Vol. 21 No. 3 Winter 1996/1997; Boutros Boutros-Ghali, *An Agenda for Peace*, United Nations 1992; Boutros Boutros-Ghali *Supplement to an Agenda for Peace*, United Nations 1995. The notable exception to this trend was the work of the State Failure Task Force, a U.S. government sponsored project with the aim of building models capable of predicting state failure events. However, though the Task Force relied on empirical analysis as a test-bed for its models (for use in “post-dicting” and potentially predicting cases of state failure) it did not attempt to assess the impact of state failure. The Task Force authored four main reports: Daniel Esty, Jack Goldstone, Ted Robert Gurr, Pamela Surko, and Alan Unger, *Working Papers: State Failure Task Force Report*, SAIC, 1995; Esty et al., *State Failure Task Force Report: Phase II Findings*, SAIC, 1998; Goldstone et al., *State Failure Task Force Report: Phase III Findings*, SAIC, 2000; Robert Bates, et al., *Political Instability Task Force Report: Phase IV Findings*, SAIC, 2003. See: [www.cidcm.umd.edu/inscr/stfail/index.htm](http://www.cidcm.umd.edu/inscr/stfail/index.htm)

<sup>25</sup> There were early signals of a shift in the Clinton Administration's interpretation of—and response to—the challenges of U.S. humanitarian and military engagement in civil wars and failed states, from Somalia to Bosnia. In 1997, The Clinton White House published a presidential decision directive, titled “Managing Complex Contingency Operations”, which cited the potential for civil wars to spread and pose regional and international security risks. See PDD/NSC 56 “Managing Complex Contingency Operations” May 1997, retrieved at: <http://www.fas.org/irp/offdocs/pdd56.htm>

<sup>26</sup> 2002 National Security Strategy of the United States, *ibid.*

failed states “constitute structural threats akin to dead leaves that accumulate in a forest.”<sup>27</sup> Threats might emerge from even the most desperate, anarchic, and isolated circumstances. Broken states had become a “crucible in which many threats to U.S. interests are formed.”<sup>28</sup>

Most strikingly, the humanitarian problems with which state failure had been associated now took on a strongly transnational character. Disease, civil wars, crime, environmental crises, and other dangers now threatened to “leap across the world.”<sup>29</sup> Ungoverned spaces were no longer self-contained humanitarian crises, but “spawning grounds for global threats.”<sup>30</sup> Moreover, state fragility was tied to both “malevolent, purposive” dangers such as terrorism and transnational crime,<sup>31</sup> as well as “malignant” dangers—threats that emerged without the active intervention of malign agents—such as elevated risk of pandemic disease incubation and transmission.<sup>32</sup>

During the 1990s, the strategic significance of crumbling states had been hotly debated within U.S. foreign policy circles. Yet the new conventional wisdom on the risks posed by fragile states quickly achieved bipartisan consensus. As a presidential candidate, George W. Bush had derided the Clinton administration’s engagement in the shattered states in the Balkans, and promised a foreign policy of humility and restraint.<sup>33</sup> His administration had entered the White House with relatively unanimous opposition to the messy politics of humanitarian assistance and “nationbuilding.”<sup>34</sup> In 2005, Secretary of State Condoleezza Rice wrote that “the phenomenon of weak and failing states is not new, but the danger they now pose is unparalleled... transnational threats such as disease or terrorism can inflict damage comparable to the standing armies of nation-states. Absent responsible state authority, threats that would and should be contained within a country's borders can now

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<sup>27</sup> Stephen D. Krasner and Carlos Pascual, “Addressing State Failure” *Foreign Affairs*, Vol. 84, No. 4, 1995, p. 155. Krasner served as Director of Policy Planning for the U.S. Department of State, while Pascual served as the head of the State Department's new office for Reconstruction and Stabilization..

<sup>28</sup> Chester A. Crocker, “Engaging Failed States”, *Foreign Affairs*, Vol. 82. No. 5, 2003, p. 33

<sup>29</sup> USAID, *Foreign Aid in the National Interest: Promoting Freedom, Security, and Opportunity*, 2003, p. 1

<sup>30</sup> Lael Brainard, Derek Chollet, and Vinca LaFleur, “The Tangled Web: the Poverty-Insecurity Nexus”, pp. 1-5 in Brainard and Chollet, eds., *Too Poor for Peace? Global Conflict, Poverty, and Security in the 21<sup>st</sup> Century*, Brookings Institution, 2007

<sup>31</sup> Krasner and Pascual, *ibid.*; Ray Takeyh and Nikolas Gvosdev, “Do Terrorist Networks Need a Home?”, *The Washington Quarterly*, Summer, 2002; Ashraf Ghani and Clare Lockhart, *Fixing Failed States*, Oxford University Press, 2008, p. 4; Rachel Stohl and Dan Smith, “Small Arms in Failed States: a Deadly Combination”, working paper, Center for Defense Information, 1999

<sup>32</sup> Jeffrey Sachs, “The Strategic Significance of Global Inequality”, *The Washington Quarterly*, vol. 23, no. 4, pp. 193-4. The distinction between malignant and malevolent threats is drawn from Stewart Patrick, “Weak States and Global Threats”, *the Washington Quarterly*, Spring 2006, p. 33

<sup>33</sup> Mazarr, *ibid.*

<sup>34</sup> Robert Kagan “The September 12 Paradigm: America, the World, and George W. Bush” *Foreign Affairs*, Vol. 87, No. 5, 2008

melt into the world and wreak untold havoc”<sup>35</sup> Susan Rice, who would later serve as Barack Obama’s national security advisor, wrote in 2006 that “transnational security threats... often emerge from impoverished, relatively remote regions of the world. They thrive especially in conflict or lawless zones... and in poor, weak states with limited control over their territory.”<sup>36</sup> Although the Obama White House has abandoned the Bush administration's sweeping pronouncements on the risks of failed states, it has maintained a focus on weak states in its national security frameworks,<sup>37</sup> and it has maintained a high tempo of engagement in the world's fragile corners.

The new conventional wisdom has achieved broad consensus not merely across the U.S. government, but in strategy and policy frameworks in governments across the globe. The U.K. Department for International Development has focused heavily on fragile states; in 2007, Hilary Ben, then the Secretary of State for International Development, wrote that “we cannot sit back and do nothing... as Afghanistan has shown, walking away carries a high price.”<sup>38</sup> Australian strategy began from a similar point of departure, noting that “Disengagement is not an option... nor can any country simply isolate itself from fragile states when there are such clear but complex links to their own national security.”<sup>39</sup> A range of European countries have followed suit.<sup>40</sup>

Global governance institutions have also linked fragile states with a wide range of global security threats. The United Nations’ High Level Panel on Threats Challenges and Change—tasked with defining a UN security agenda for the 21st century—argued extensively that contemporary threats transcend boundaries, and explicitly linked weak states to international terrorism and pandemic disease risks.<sup>41</sup> A decade later, a UN high level panel on development—convened to define a new set of targets to follow the Millennium Development Goals, noted that various threats “spill rapidly across borders in our

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<sup>35</sup> Condoleezza Rice “The Promise of Democratic Peace” *The Washington Post*, 11 December 2005. Retrieved at: <http://www.washingtonpost.com/wp-dyn/content/article/2005/12/09/AR2005120901711.html>

<sup>36</sup> Susan E. Rice “The Threat of Global Poverty” *The National Interest*, Spring 2006, p. 77

<sup>37</sup> 2010 *National Security Strategy of the United States*, p. 8.

<sup>38</sup> U.K. Department for International Development “Why We Need to Work More Effectively in Fragile States” 2007, p. 3

<sup>39</sup> Ian Anderson “Fragile States: What is International Experience Telling Us?” Australian Agency for International Development, June 2005

<sup>40</sup> The European Council, for example, noted the global security risk posed by fragile states. See: European Council “Council Conclusions on a EU response to situations of fragility” 2831st External Relations Council meeting Brussels, 19-20 November 2007. German government strategy also noted the “global scale” of risks. See Federal Ministry for Economic Cooperation and Development “Development-Oriented Transformation in Conditions of Fragile Statehood and Poor Government Performance” Strategies 153. Retrieved at: [http://www.bmz.de/en/publications/type\\_of\\_publication/strategies/konzept153.pdf](http://www.bmz.de/en/publications/type_of_publication/strategies/konzept153.pdf). The Netherlands foreign aid strategy simply noted that “Fragile states are a threat to us all.” See “Our common concern Investing in development in a changing world” Dutch Development Cooperation Policy Note , 2007-2011, p. 12

<sup>41</sup> “A More Secure World: Our shared responsibility.” Report of the High-level Panel on Threats, Challenges and Change. United Nations, 2004, pp. 14-15

increasingly connected world” and further that “stability has become a universal concern.”<sup>42</sup> The World Bank has maintained a more studiously apolitical stance, noting the challenges of poverty reduction in fragile states, but has also linked failed states to “global spillovers”<sup>43</sup> including terrorism.<sup>44</sup> Over time, the Bank’s leadership had made the point more explicitly: In 2008, the head of the World Bank warned of the peril of neglecting fragile states: “disease, outflows of desperate people, criminality and terrorism that can spawn in the vacuum of fragile states can quickly become global threats.”<sup>45</sup>

### 3. Defining the problem

What does it mean for a state to fail? The term was first used by Helman and Ratner in a seminal article that attempted to make sense of the unexpected spike in violence, instability and disorder following the end of the Cold War. Helman and Ratner described a rising tide of states buckling under the weight of “civil strife, government breakdown, and economic privation”, succumbing to violence and anarchy.<sup>46</sup> Then-U.N. Secretary-General Boutros Boutros-Ghali echoed the warning, arguing that in a number of countries political institutions had effectively collapsed, leading to “a breakdown of law and order, and general banditry and chaos.”<sup>47</sup>

The concept quickly caught the attention of scholars and policymakers, leading to a rapid proliferation of labels and categories for various grades and types of state capacity: “at risk”<sup>48</sup> “failing”, “failed” “weak”<sup>49</sup>, “fragile”<sup>50</sup>, “collapsed”<sup>51</sup>, “low-income countries under stress.”<sup>52</sup>

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<sup>42</sup> A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development.” The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, United Nations, 2013, p. 52

<sup>43</sup> Independent Evaluation Group “Engaging with Fragile States: An IEG Review of World Bank Support to Low-Income Countries Under Stress” World Bank, 2006, p. ix

<sup>44</sup> Conflict Prevention and Reconstruction Unit “The Role of the World Bank in Conflict and Development: An Evolving Agenda” World Bank, 2004, p. 6

<sup>45</sup> Robert B. Zoellick “Fragile States: Securing Development” *Survival* Vol. 50 No. 6, December 2008—January 2009, p. 68

<sup>46</sup> Gerald B. Helman and Steven R. Ratner, “Saving Failed States”, *Foreign Policy*, No. 89, Winter 1992/1993, p. 3

<sup>47</sup> Supplement to *An Agenda for Peace*: Position Paper of the Secretary-General on the Occasion of the Fiftieth Anniversary of the United Nations, 3 January, 1995. Retrieved at: <http://www.un.org/Docs/SG/agsupp.html>.

<sup>48</sup> Marina Ottaway and Stefan Mair, “States at Risk and Failed States: Putting Security First”, Carnegie Endowment for International Peace *Policy Outlook*, 2004

<sup>49</sup> Nancy Birdsall, Milan Vaishnav and Robert Ayres, eds. *Short of the Goal: U.S. Policy and Poorly Performing States*, Center on Global Development, 2006

<sup>50</sup> U.S. Agency for International Development, *Fragile States Strategy*, 2005

<sup>51</sup> I. William Zartman, “Posing the Problem of State Collapse”, in I. William Zartman ed., *Collapsed States: The Disintegration and Restoration of Legitimate Authority* 1995

<sup>52</sup> World Bank, *Fragile States: The Low Income Countries Under Stress [LICUS] Initiative*, 2005



Indices measuring state failure have multiplied at a similar rate.<sup>53</sup> Over time, efforts to conceptualize and measure the breakdown of state institutions have converged along two key dimensions. First, scholars and policymakers have shifted emphasis from a relatively narrow conceptualization of state failure as an *event*—the collapse of governing institutions and eruption of civil war—to state *fragility*, a concept which links the relative *vulnerability* of institutions to acute breakdowns to the state's capability and willingness to fulfill a set of basic governance functions.<sup>54</sup> Second, and relatedly, conceptualizations of state breakdown have shifted from a binary measurement of states as either functional or failed, to a continuous measure. The continuous measure broadly distinguishes between states that are strong and capable, states that are threatened, or weak but functional, and states that have ceased to control their territory and provide basic protections and public goods.<sup>55</sup>

### A matter of degree: liberal democratic models as templates for governance

Conceptualizations of state fragility are anchored in the basic proposition is that states are robust to the extent that they fulfill three basic functions: the maintenance of security, the promotion of citizens' welfare through basic services, and the provision and protection of civil rights and democratic political processes.<sup>56</sup> State fragility is also implicitly defined as a *syndrome*: deficits in each dimension—state security, capacity, and legitimacy—are considered to be broadly correlated and typically mutually reinforcing.<sup>57</sup>

These core governance functions are defined in accordance with norms anchored in Western political philosophy and models of governance, which view the modern state as engine for providing citizens with security, political representation, and social welfare.<sup>58</sup> In short, scholars overwhelmingly “define failed states in opposition to the strong states that

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<sup>53</sup> I discuss the relative merits of various indices below. Notable examples include the Failed States Index (see: <http://ffp.statesindex.org/>); the Country Indicators for Foreign Policy project (see: <http://www4.carleton.ca/cifp/>); the Brookings and Center for Global Development Index of State Weakness in the Developing World (see: <http://www.brookings.edu/research/reports/2008/02/weak-states-index/>); and the Failed States Problems Sets of the Political Instability Task Force (see: [www.cidcm.umd.edu/inscr/stfail/index.htm](http://www.cidcm.umd.edu/inscr/stfail/index.htm))

<sup>54</sup> See Daniel Esty, Jack Goldstone, Ted Robert Gurr, Pamela Surko, and Alan Unger, Working Papers: State Failure Task Force Report, SAIC, 1995; Esty et al., State Failure Task Force Report: Phase II Findings, SAIC, 1998; Goldstone et al., State Failure Task Force Report: Phase III Findings. SAIC, 2000; Robert Bates, et al., Political Instability Task Force Report: Phase IV Findings, SAIC, 2003. See: [www.cidcm.umd.edu/inscr/stfail/index.htm](http://www.cidcm.umd.edu/inscr/stfail/index.htm)

<sup>55</sup> Monika François and Inder Sud, “Promoting Stability and Development in Fragile and Failed States”, *Development Policy Review*, Vol. 24, No. 2, p. 143; Robert Rotberg, “the Failure and Collapse of Nation-States: Breakdown, Prevention, and Repair”, in Rotberg, Ed., *When States Fail*, pp. 2-1.

<sup>56</sup> Stuart E. Eizenstat, John Edward Porter, and Jeremy M. Weinstein, “Rebuilding Weak States”, *Foreign Affairs*, Vol. 84, No. 1, 2004, pp. 136-7; Center for Global Development, “Statebuilding and Global Development”, *Rich World, Poor World Brief*, 2006; Susan E. Rice, and Stewart Patrick, “Index of State Weakness in the Developing World”, Brookings Institution, 2008; Tonya Langford, “Things Fall Apart: State Failure and the Politics of Intervention”, *International Studies Review*, Vol. 1, No. 1, p. 64; Robert Rotberg, “the Failure and Collapse of Nation-States: Breakdown, Prevention, and Repair”, in Rotberg, Ed., *When States Fail: Causes and Consequences*, 2004 pp. 4-10

<sup>57</sup> Thank you to David Leonard for suggesting this point.

<sup>58</sup> See Jennifer Milliken and Keith Krause, “State Failure, State Collapse, and State Reconstruction: Concepts, Lessons and Strategies” *Development and Change*, Vol. 33, No. 5, 2002, pp. 756-762.

are presumed to be the norm.”<sup>59</sup> This approach anchors analyses of state fragility firmly in modernization theory, which views state development in teleological terms: in this view, states develop and evolve towards the Western model.<sup>60</sup> That said, policymakers (and scholars closest to the articulation of policy) generally do not adopt a strictly functionalist approach: many studies view state strength as contingent upon both basic administrative and institutional capacity, as well as the state’s *willingness* to provide core services. This distinction is most obvious and important in the case of civil and political rights, wherein some states are clearly capable, but unwilling to let citizens check and contest power.<sup>61</sup>

### *The dimensions of state capacity*

Most analyses define state failure as a process of collapse or decay of governing institutions, leading to the state’s inability to provide public security or “basic social, economic, legal, and political services and safeguards to the population at large.”<sup>62</sup> In this vein, the Commission on Weak States and U.S. National Security defined fragile states as: “unable to do the things that their own citizens and the international community expect from them: protecting people from internal and external threats, delivering basic health services and education, and providing institutions that respond to the legitimate demands and needs of the population.”<sup>63</sup> Similarly, the the Organization for Economic Cooperation and Development, an intergovernmental body that shapes and coordinates global aid policy towards weak states, argues that “states are fragile where state structures lack political will and/or capacity to provide the basic functions needed for poverty reduction, development and to safeguard the security and human rights of their populations.”<sup>64</sup>

The foundational task of the state is to provide its citizens with security.<sup>65</sup> Accordingly, states that cannot project power throughout their territory will be unable to provide the policing and justice services that underpin individual security, or to deter, check, or defeat armed insurrections that contest the state’s right to rule.<sup>66</sup> Moreover, as Susan Rice notes,

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<sup>59</sup> Rosa Ehrenreich Brooks, “Failed States, or the State as Failure?”, *The University of Chicago Law Review*, Vol. 72, No. 4, pp. 1160-1. David Carment has echoed this point. See “Assessing State Failure: Implications for Theory and Policy”, *Third World Quarterly*, Vol. 24, No. 3, p. 422, en. 8. The implicit comparison to strong, Western states is by no means uncontested, but it is overwhelmingly dominant. For a critique, Jonathan Hill, “Beyond the Other? A Postcolonial Critique of the Failed State Thesis”, *African Identities*, Vol. 3, No. 2, pp. 147-8

<sup>60</sup> See Nils Gilman, *Mandarins of the Future: Modernization Theory in Cold War America*, Johns Hopkins University Press, 2003

<sup>61</sup> See Rice and Patrick, *ibid.*, pp. 8-9; Robert Rotberg, “the Failure and Collapse of Nation-States: Breakdown, Prevention, and Repair”, in Rotberg, Ed., *When States Fail*, pp. 4-10, and Robert Rotberg, *Nation-State Failure: A Recurring Phenomenon?*, National Intelligence Council Mapping the Global Future— 2020 Project, 2003, No. 4

<sup>62</sup> Tonya Langford, “Things Fall Apart: State Failure and the Politics of Intervention”, *International Studies Review*, Vol. 1, No. 1, p. 64

<sup>63</sup> Commission on Weak States and U.S. National Security, *On the Brink: Weak States and US National Security*, Center for Global Development, 2004, p. 1

<sup>64</sup> Organization for Economic Cooperation and Development, “Principles for Good International Engagement in Fragile States and Situations”, April 2007, p. 2

<sup>65</sup> Eizenstat et al., *ibid.*, p. 136; Robert Rotberg, “the Failure and Collapse of Nation-States: Breakdown, Prevention, and Repair”, *ibid.*, pp. 3

<sup>66</sup> Zartman, *ibid.* p. 5

states without effective territorial control may also be unable to deliver public services.<sup>67</sup> The delivery of core public services— health, education, infrastructure— is necessary both to maintain public confidence in political institutions, as well as to stimulate economic growth which provides a resource base.<sup>68</sup> Finally, scholars and policymakers argue that a lack of political legitimacy renders states vulnerable. Helman and Ratner note that destabilization and war frequently stem from delegitimized governance.<sup>69</sup> Bendix argues that “power needs legitimation the way a modern bank needs the confidence of its depositors. Rulers... could never obtain compliance if each command had to be backed up by a force sufficient to compel compliance.”<sup>70</sup> Legitimacy, and hence citizens’ compliance, is considered to be anchored in the promotion and protection of democratic participation and human rights.<sup>71</sup>

Convergence around these definitions has three main implications for the operationalization and measurement of state fragility. First, states will rarely be uniformly successful or failed, but instead exhibit uneven capability and political will to meet different sets of functions. Measurements of specific functions may be necessary depending on the causal models at hand.<sup>72</sup> Second, and relatedly, state fragility should be conceptualized and measured as a matter of degree rather than kind: states vary widely in their resilience to shocks, and all states exhibit some dimensions of fragility, and hence some vulnerability. Lastly, state capacity to meet core governance functions is dynamic, shifting over time. Fragility, as a result, is rarely a steady state, and must be measured repeatedly over time.<sup>73</sup>

### Measuring fragility

An empirical analysis of the transnational impacts of state fragility and failure requires a robust measurement strategy for state capacity that meets the criteria outlined above. In chapters two and three, I utilize a novel country risk index constructed by the Canadian

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<sup>67</sup> Susan Rice, “The New National Security Strategy: Focus on Failed States”, Brookings Institution Policy Brief No. 116, p. 2; Foreign Policy and Fund for Peace, “The Failed States Index: FAQ & Methodology”, retrieved at: [http://www.foreignpolicy.com/articles/2009/06/22/2009\\_failed\\_states\\_index\\_faq\\_methodology](http://www.foreignpolicy.com/articles/2009/06/22/2009_failed_states_index_faq_methodology)

<sup>68</sup> Ali A. Mazrui, “The Blood of Experience: the Failed State and Political Collapse in Africa”, *World Policy Journal*, Vol. 12, No. 1, Spring 1995, p. 28; Eizenstat et al, *ibid.*, p. 126, Rotberg, *ibid.*,

<sup>69</sup> Helman and Ratner, *ibid.*, pp. 4-5

<sup>70</sup> Reinhard Bendix, “The Mandate to Rule: An Introduction”, *Social Forces*, Vol. 55, No. 2, 1976, p. 250

<sup>71</sup> OECD/DAC, *ibid.*, UK Department for International Development (DFID) “Why We Need to Work More Effectively in Fragile States”, 2005, pp. 7-8; Eizenstat et al, *ibid.*, pp. 126-7, Rotberg, *ibid.*

<sup>72</sup> In some cases, aggregate measures may conceal more than they reveal, by obscuring specific associations between dimensions of state fragility and outcomes of interest. Jonathan Di John, “The Concept, Causes and Consequences of Failed States: A Critical Review of the Literature and Agenda for Research with Specific Reference to Sub-Saharan Africa”, *European Journal of Development Research*, Vol. 22, No. 1, 2010. See also Stewart Patrick, “‘Failed’ States and Global Security: Empirical Questions and Policy Dilemmas”, *International Studies Review*, Vol. 9, No. 4

<sup>73</sup> Chester Crocker, “Engaging Failed States”, *Foreign Affairs*, September/October 2003, pp. 35-7, Robert Rotberg, “the Failure and Collapse of Nation-States: Breakdown, Prevention, and Repair”, in Rotberg, Ed., *When States Fail*, pp. 2-11. See also Jeremy Weinstein, and Milan Vaishnav, “A Mismatch with Consequences: U.S. Foreign Policy and the Security-Development Nexus”, in Birdsall, Vaishnav and Ayres, Eds. *Short of the Goal: U.S. Policy and Poorly Performing States*, p. 17

Indicators for Foreign Policy project (CIFP),<sup>74</sup> and I introduce this measure here in order to give a sense for the trends in state fragility over space and time.

The CIFP is only one of many state capacity and fragility indices. Although there has been a proliferation of such datasets over the past decade, the majority of these suffer from questionable measurement validity, non-transparent construction, or limited temporal or spatial coverage. Several specific examples are worth noting. Perhaps the best-known publicly-available index is the “Failed States Index” produced annually by *Foreign Policy* magazine and the Fund For Peace. The Index follows mainstream conceptualizations of state fragility, noting that “a state that is failing has several attributes... a loss of physical control of its territory... the erosion of legitimate authority... an inability to provide reasonable public services.”<sup>75</sup> It also covers a short time series (2005-2014), with data on all states in the international system only available from 2007 onward. The Index of State Weakness in the Developing World, compiled by the Brookings Institution, also follows mainstream conceptualizations of state fragility, identifying weak states as those lacking capacity or will to meet four core responsibilities: maintaining legitimate, accountable institutions, providing security and maintaining territorial control, meeting citizens’ basic needs, and facilitating economic growth.<sup>76</sup> The Index is transparently described, and utilizes a set of publicly-available indicators.<sup>77</sup> However, it is only available for one year, 2008, and since it only covers states in the developing world, cannot be used for global quantitative analysis.

The CIFP is transparent in its documentation, and covers a long time series, from 1980 through 2006.<sup>78</sup> Most importantly, the conceptualization and operationalization of the Index closely matches policymakers understanding of a fragile state, as the one which “lacks the functional authority to provide basic security within their borders, the

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<sup>74</sup> Originally commissioned and supported by a cluster of Canadian government agencies, including the Department of National Defence; the Department of Foreign Affairs and International Trade, and the Canadian International Development Agency (CIDA), the CIFP is employed by these institutions as an early warning and policy planning tool. The index was designed by David Carment, Stewart Prest, and Yiagadeesen Samy. See Carment, Prest and Samy, *Security, Development, and the Fragile State: Bridging the Gap between Theory and Policy*, 2009

<sup>75</sup> The Failed States Index measures state corrosion through twelve indicators which are constructed through automated (algorithmic) textual analysis of open media sources. The indicators are: Demographic pressure, population displacement, group grievances, human flight and brain drain, uneven economic development, poverty, state legitimacy, public service provision, human rights and rule of law, extent to which the security apparatus operates as a “state within a state”, factionalized elites, and external intervention in the state’s sovereign territory. However the Index is not fully transparent, and does not publish details on its sources, keywords, weighting (if any), or scores for sub-indicators used to build the twelve core variables. See Fund for Peace, “The Failed States Index: Frequently Asked Questions”, retrieved at: <http://www.fundforpeace.org/global/?q=fsi-faq#5>

<sup>76</sup> Brookings Institution, “Index of State Weakness in the Developing World”, 2008, p. 3, retrieved at: [http://www.brookings.edu/research/reports/2008/02/~media/Research/Files/Reports/2008/2/weak%20states%20index/02\\_weak\\_states\\_index.PDF](http://www.brookings.edu/research/reports/2008/02/~media/Research/Files/Reports/2008/2/weak%20states%20index/02_weak_states_index.PDF)

<sup>77</sup> *Ibid.*, p. 9

<sup>78</sup> The CIFP index builds each indicator using open-source data culled from a variety of sources, including multilateral institutions (the World Bank and United Nations), think-tank and advocacy organizations (Freedom House, Transparency International), and research institutes (Uppsala University’s Conflict Data Program). See <http://www4.carleton.ca/cifp/about.htm#history>

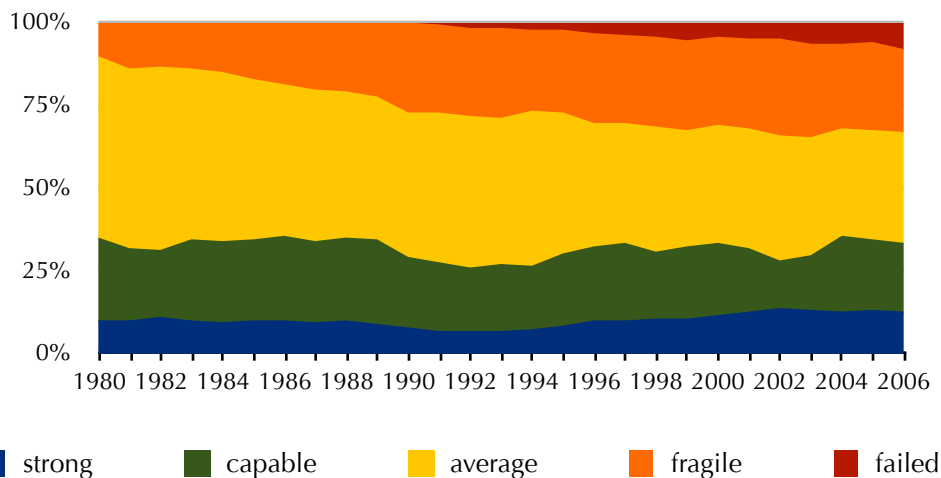
institutional capacity to provide basic social needs for their populations, and/or the political legitimacy to effectively represent their citizens at home and abroad.<sup>79</sup>

The index provides a separate measure for each basic state function: authority, legitimacy, and capacity. *Authority* captures the capacity of the state to maintain control over its territory, provide security to its citizens, and enforce legislation over its sovereign space. Rather than capturing raw coercive power, it measures, security and spatial control.<sup>80</sup> The metric for institutional *legitimacy* matches policymakers’ normative commitment to the protection of civic and human rights, and the assumption that legitimacy arises from socially accepted governance and popularly sanctioned political succession.<sup>81</sup> *Capacity* measures the potential for the state to mobilize productive resources to provide public services— health, education, and infrastructure—to citizens.<sup>82</sup> A composite fragility score is built by averaging the indicators across all three clusters.<sup>83</sup>

### Trends over time and space

The extent and distribution of state fragility varies widely over time and space. Yet there is evidence that state fragility is a growing problem. Figure 1.1 shows changes in the distribution of fragility, measured as the percentage of countries falling into the strong, capable, average, fragile, and failed categories, over time.

Figure 1.1: an increasingly fragile world: trends in the global distribution of state fragility, 1980-2006



<sup>79</sup> CIFP Failed and Fragile States FAQ, 2006, retrieved at: <http://www4.carleton.ca/cifp/app/serve.php/1138.pdf>

<sup>80</sup> Carment, Prest, and Samy *ibid.*, pp. 86-7

<sup>81</sup> *ibid.*, pp. 88-89

<sup>82</sup> Capacity is measured through a mixture of indicators which track the resources available to the state (including economic growth, arable and forest land) as well as data that capture the provision of public services: adult literacy, education (enrollment and completion), and health (morbidity, mortality, and expenditure). See *ibid.*, pp. 87-88

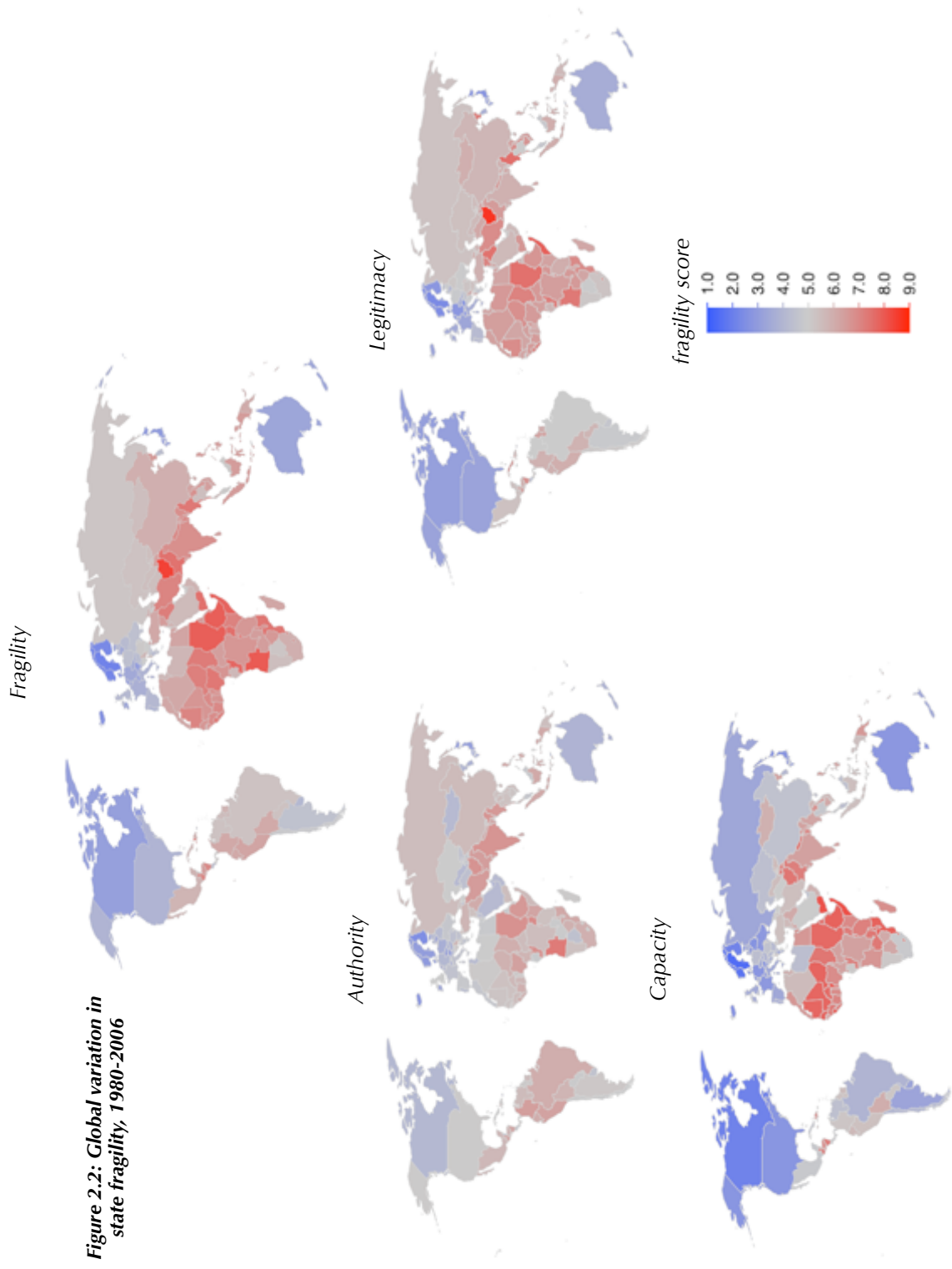
<sup>83</sup> For each year in the dataset, each country is ranked from highest to lowest performance for each indicator. The ranking is divided into nine equal groups, and each state is assigned a score from 1-9 which reflects their relative ranking among the entire population of countries in the sample. The composite authority, legitimacy, and capacity scores are built by computing a simple average of the indicators for that conceptual cluster; all indicators are equally weighted. See Carment et al., "Appendix 3.1: Calculation of the Index" *ibid.*, pp. 111-113

Although institutional weakness existed in the early post-colonial period and throughout the Cold War,<sup>84</sup> the intensity and scope of the problem has expanded over time. Several points are worth noting. First, end of the Cold War is a clear inflection point. From the early 1990s onward, an increasing proportion of states begin to fall below the threshold for failure; the proportion of fragile states, however, stays relatively constant. Second, although the proportion of countries falling into the strong category is relatively stable over time, there is a modest upward trend, particularly from 1995 onward. These two trends highlight a growing divergence across the international system, as increasing numbers of states drift out of the middle tier of state capacity, towards greater institutional strength and stability, or more acute conditions of institutional frailty.

Figure 2.2, below, shows the spatial distribution of state fragility, authority, legitimacy, and capacity, averaged over the period 1980-2006. The disaggregated measures show several interesting and analytically important trends. First, low state capacity for public goods provision is primarily concentrated in sub-Saharan Africa, although endemically impoverished states in other parts of the world— including Papua New Guinea, Yemen, and Afghanistan—also score quite low. Weak authority is more dispersed. Although Africa again has the highest share of states with severely weak authority, Latin America and South and Southwest Asia also evidence deficits capacity to project power and spatial control. Illegitimate governance is similarly broadly distributed, reflecting the distribution of autocratic and abusive rule across large parts of the developing world.

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<sup>84</sup> Jackson and Rosberg, *ibid.*



**Figure 2.2: Global variation in state fragility, 1980-2006**

#### 4. Testing the conventional wisdom: the argument in brief and the organization of the dissertation

Despite the enormous impact of the new conventional wisdom on the conduct of foreign policy, the link between fragile states and global security hazards has received relatively little scrutiny. A small number of foreign policy realists simply never accepted the argument that poor and weak states could constitute a threat sufficient to alter the national (or global) security agenda. In this vein, John Mearsheimer derides the fact that “America’s national-security elites act on the assumption that every nook and cranny of the global is of great strategic significance and that there are threats to U.S. interests everywhere.”<sup>85</sup> Mazarr argues that the widely-cited Failed States Index “is not exactly a roster of national security priorities” further noting that “of (the) top 20 weak states, very few (Afghanistan, Iraq, and Pakistan) boast geostrategic significance, and they do so mostly because of their connection to terrorism.”<sup>86</sup> Yet this viewpoint has received relatively scant attention, as international engagement—military, economic, political, and development—in crumbling states has steadily built.

What about the empirical link between broken states and global threats? Despite the sweeping nature and strong influence of arguments linking state failure with international security threats, empirical testing and verification has been extremely limited. Indeed, arguments regarding the links are frequently made on basis of anecdotal evidence and assertion rather than evidence and analysis. And as Stewart Patrick notes, frequently a single data point furnishes rhetorical support for the link between state failure and a given harm.<sup>87</sup> A limited number of empirical analyses have focused on transnational terrorism. Yet, as I discuss in chapter three, these have largely relied on metrics for state fragility that do not match the conceptualization and measurement of fragile states within policy circles.<sup>88</sup> Several more systematic accounts of the relationship between fragile states and both conventional and non-conventional security challenges have reached starkly different conclusions,<sup>89</sup> in part because these analyses focus on different dimensions of both fragility and security hazards, and do not isolate and test key causal mechanisms.

I advance two main arguments in this dissertation.

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<sup>85</sup> John J. Mearsheimer “America Unhinged” *The National Interest* January/February 2014 p. 9

<sup>86</sup> Mazarr, *ibid.*

<sup>87</sup> Stewart Patrick, “Weak States and Global Threats: Fact or Fiction?” *Washington Quarterly*, Spring 2006

<sup>88</sup> See Brian Lai, “Draining the Swamp: An Empirical Examination of the Production of International Terrorism, 1968-1998”, *Conflict Management and Peace Science*, Vol. 24, No. 4, 2007; James Piazza, “Incubators of Terror: Do Failed and Failing States Promote Transnational Terrorism?”, *International Studies Quarterly*, vol. 52, 2008

<sup>89</sup> See Susan E. Rice, Corinne Graff, and Carlos Pascual, eds., *Confronting Poverty: Weak States and U.S. National Security*, Brookings Institution Press, 2010, and Stewart Patrick *Weak Links: Fragile States, Global Threats, and International Security*, Oxford University Press, 2011



The primary proposition emerging from this research is that the conventional wisdom on the implications of state failure is wrong. Failed states largely do not act as “exporters” of international security threats. To the contrary, I argue that the aspects of state failure that analysts most often highlight—broken security institutions, weak public service provision—render failed states systematically *less* likely to propagate global dangers than higher-functioning polities. Moreover, the evidence suggests that capable and connected states, rather than fragile and broken polities, are more likely to generate transnational hazards. I test this proposition by exploring the links between two key global security threats—international terrorism and pandemic disease outbreaks—and fragile states, and do so by isolating specific causal mechanisms thought to link institutional breakdown with each threat.

The second proposition relates to the problem of rebuilding fragile states. Even if broken states do not pose a global security risk, there is a strong moral argument for engagement. In 2008, Robert Zoellick, then President of the World Bank, wrote that “leaving one billion people in destitution represents a tragic waste of human energy, creativity, invention, and possibility.”<sup>90</sup> International actors have sought to ameliorate suffering in fragile states by reconstituting order, and by rebuilding broken states according to the liberal-democratic model: elections, rule of law, economic liberalization. This model has had little success. I argue that alternative models focusing on the provision of basic public goods may prove more effective in building legitimate, sustainable order. I test this proposition through case-focused research, using population survey data to identify the correlates of institutional legitimacy in a region of multi-generational war and fragility.

### Organization of the dissertation

#### *Chapter Two: Are Fragile and Failing States “Breeding Grounds” for International Terrorism?*

Chapter two focuses on the relationship between fragile states and transnational terrorism. The threat posed by international terrorism has been a primary—probably the primary—factor impelling global engagement in fragile states. Analysts have focused particular attention on the potential for crumbling states to “incubate” terrorism, and argue that the horrendous circumstances in fragile states are a key source of recruits to violent extremist organizations. According to one account, “left in dire straits, subject to depredation, and denied access to basic services, people become susceptible to the exhortations of demagogues and hatemongers.”<sup>91</sup>

Anecdotal evidence would seem to support this narrative. Yet a more systematic analysis does not. The evidence instead suggests that terrorists are *less* likely to spring from areas of weak governing authority than states that are able to control their territory, perhaps because terrorist networks and recruiters face the same risks operating in such regions as

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<sup>90</sup> Zoellick 2008, *ibid.*

<sup>91</sup> Stephen D. Krasner and Carlos Pascual, “Addressing State Failure”, *Foreign Affairs*, Vol. 84, No. 4, 2005, p. 153

do UN peacekeepers and other international actors.<sup>92</sup> Similarly, there is no evidence of a link between poverty and suffering and terrorist recruitment: states that fail to provide core public services produce fewer transnational terrorists. Like all “firms”, terrorist networks attempt to source the more effective operatives; impoverished, uneducated populations are less likely to produce top candidates for transnational operations.<sup>93</sup> There is, however, strong evidence that a nexus of weak legitimacy and strong authority is the main driver of transnational terrorist recruitment. This accords with what we might term the original conventional wisdom on global terrorism: that international terrorist recruitment is facilitated by oppressive authoritarian regimes.

### *Chapter Three: Do Fragile States Threaten Global Public Health?*

Chapter three considers the link between fragile states and pandemic disease outbreaks. Global infectious disease outbreaks are perhaps the most significant threat thought to emanate from fragile states, as they carry the potential to kill hundreds of millions in rapid course, while bringing global travel and trade to a screeching halt. Analysts have suggested that the toxic mixture of poverty, collapsed health systems, and armed conflict combine to create a perfect petri dish for the emergence and incubation of deadly new viral agents, which could then be spread by displaced populations seeking safety. As one commentator put it: “hidden repositories of disease may occur in any country, but fragile states and ungoverned spaces... represent an ‘ideal home’ for any future viral mutation and propagation.”<sup>94</sup>

Anecdotal evidence—such as the emergence of Ebola and Marburg in fragile areas of sub-Saharan Africa—suggests a link. But again, a more systematic analysis does not. The evidence instead suggests that fragile states are *less* likely likely to incubate emerging viral agents than higher capacity states. Particularly virulent diseases are likely to have high case fatality rates; such agents may burn out quickly within the already weakened and dispersed populations in crumbling states.<sup>95</sup> Moreover, I find no evidence that refugee flows bring diseases in tow, suggesting that a crucial secondary mechanism thought to facilitate the movement of diseases from fragile states to neighboring countries does not hold. On the other hand, there is strong evidence that factors linked to the human-animal interface—intensive farming, the hunting and slaughter of wild animals, high-intensity agriculture—greatly increase the risk of disease emergence. This finding accords with key sources of epidemiological data, as well as foundational models of disease emergence.

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<sup>92</sup> Ken Menkhaus, “Quasi-States, Nation-Building, and Terrorist Safe Havens”, *the Journal of Conflict Studies*, Fall 2003

<sup>93</sup> Ethan Bueno de Mesquita, “The Quality of Terror”, *American Journal of Political Science*, Vol. 49, No. 3, 2005

<sup>94</sup> Frederick M. Burkle Jr., “Pandemics: State Fragility’s Most Telling Gap?”, in Patrick M. Cronin, ed., *Global Strategic Assessment 2009: America’s Security Role in a Changing World*, Institute for National Strategic Studies, U.S. National Defense University, 2009, p. 106

<sup>95</sup> “An Ebola Epidemic Simmers in Africa” *Journal of the American Medical Association*, Vol. 290, No. 3, 2003

#### *Chapter Four: Putting fragile states back together again*

Chapter four addresses the challenge of restoring order in fragile states. Even in the absence of a security imperative, there are compelling moral grounds for global engagement to help reconstitute order and alleviate suffering in shattered polities. However, efforts to date have yielded limited success: many fragile states have gone through recovery processes, only to slide back into conflict or suffer from long-run political instability. Analysts suggest that this pattern is rooted in a failure to build the legitimacy of nascent institutions.

The conventional model for rebuilding broken states attempts to reconstruct institutions along liberal-democratic lines, and to cultivate legitimacy through elections, rule of law, and liberalization. This approach treats governance outputs and social outcomes as of secondary importance. In this chapter, I argue in favor of a heterodox approach for institution-building, which centers on cultivating legitimacy by rebuilding service delivery and meeting basic needs. I empirically test the sub-dimensions of each approach in the case of a region of Indonesia suffering from long-run violence and institutional breakdown. The evidence strongly suggests that the delivery of basic services is critical for the restoration of institutional legitimacy. The dominant model, and overwhelming attention to governance processes, neglects a crucial element necessary for sustainable recovery.

#### *Chapter Five: Fragility and leverage*

Chapter five concludes, and sketches out further implications of the argument. The conclusion puts forward the proposition that managing threats emanating from capable middle-income states will require greater flexibility and greater compromise than the United States and its allies are accustomed to in fragile states. And further, that managing global threats and rebuilding broken states will force powerful countries to confront hard truths, and take firmer and more consistent stands on core principles and beliefs. Confronting the roots of terrorism will require confronting authoritarian allies. Managing the risk of pandemic disease outbreaks will require greater attention to stark inequities in the global health systems. Rebuilding fragile states will require sustained engagement over the long term, rather than hasty and limited-term efforts to manage democratic transitions. Tradeoffs and choices are inevitable, but a sober assessment of the sources of risk and prospects for recovery may make such decisions less painful, and ultimately more successful.

## 2: Are Fragile and Failing States “Breeding Grounds” for International Terrorism?

*We know where extremists thrive.  
In conflict zones that are incubators of resentment and anarchy.  
In weak states that cannot control their borders or territory,  
or meet the basic needs of their people*  
Barack Obama<sup>96</sup>

### Chapter Abstract

*Failed states have long been regarded as “breeding grounds” for transnational terrorism. The logic is a seemingly simple one of supply and demand. People mired in insecurity, destitution, and without access to basic services become susceptible to recruitment by terrorist organizations. Meanwhile, disorder and weak surveillance inherent to failed states provides an ideal operating environment for terrorist groups seeking to avoid detection and source recruits. Policymakers have largely accepted these claims on basis of a few high-profile data points, such as the 9/11 attacks launched from Afghanistan. But even this seemingly straightforward example is misleading: none of the 9/11 attackers came from a failed state, and Al Qaeda was a welcome guest of an integrated Taliban regime, rather than a clandestine presence in a broken state. More rigorous empirical analyses (Piazza 2008, Lai 2007) have found a link between institutional weakness and terrorist recruitment, but rely on potentially misleading proxies for state capacity (such as civil war, or genocides, coups and other forms of political instability) that may bias inference. This chapter presents a new empirical analysis of the link between state failure and transnational terrorism, drawing upon a risk index that better matches the dominant conceptualization of state fragility, along with improved data on terrorist recruitment drawn from open-source data. Contrary to the conventional wisdom, I find no evidence that fragile and failed states “breed” terrorist recruits. To the contrary, the greatest sources of recruits are strong autocratic states; the threat stems from illegitimate, rather than incapable, states.*

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<sup>96</sup> Barack Obama, “The War We Need to Win”, speech delivered at the Woodrow Wilson International Center for Scholars, 1 August, 2007. Retrieved at: <http://www.wilsoncenter.org/sites/default/files/obamasp0807.pdf>

## 1. Introduction

On Christmas day 2009, a teenager named Umar Farouk Abdulmutallab boarded a Northwest Airlines flight bound from Amsterdam to Detroit. As the plane began its final descent into Detroit Wayne Airport, he attempted to detonate a high-explosive device hidden under his clothes, but was tackled, disarmed, and detained by passengers before the bomb exploded.<sup>97</sup> Details of the would-be attacker's life soon emerged.

Abdulmutallab was a Nigerian national, and had recently traveled to Yemen, ostensibly for language training. Under questioning, Abdulmutallab claimed to have received the bomb as well as training from Al Qaeda in the Arabian Peninsula, an offshoot of the global terrorist network operating in Yemen.<sup>98</sup>

To many analysts, the foiled attack served as yet another reminder of the security threat posed by crumbling states. Attention quickly focused on Abdulmutallab's homeland. In 2004, the United States government's 9/11 Commission had cited Nigeria's potential appeal as hub for transnational terrorist organizations, and found that Al Qaeda had formed "cooperative" informal ties with local terrorist groups.<sup>99</sup> Five years later, commentators described Nigeria as a potentially virulent source of transnational terrorism, a state "consumed by its own corruption... rapidly becoming more like Somalia"<sup>100</sup>, and undergoing a "systemic process of failure" that might make it "attractive to Al-Qaeda."<sup>101</sup> Similar anxiety centered upon Yemen. A perennial contender on *Foreign Policy* magazine's "Failed States Index", Yemen was also home to a particularly ambitious local Al-Qaeda franchise that had been linked with a range of plots against U.S. interests, including recruiting local combatants, and priming and preparing would-be terrorist operatives like Abdulmutallab.

Before the September 11th attacks against the United States, fragile and failing states were largely considered a humanitarian tragedy rather than security threat. And the potential connection between failed states and transnational terrorism primarily concerned a small circle of international legal scholars, who debated the extent to which incapacitated governments could be held responsible for the actions of terrorist organizations operating

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<sup>97</sup> Anahad O'Connor and Eric Schmitt, "Terror Attempt Seen as Man Tries to Ignite Device on Jet", *the New York Times*, December 26, 2009

<sup>98</sup> Eric Schmitt and Eric Lipton, "Officials Point to Suspect's Claim of Qaeda Ties in Yemen", *the New York Times*, December 26, 2009

<sup>99</sup> The U.S. 9/11 Commission, *Final Report of the National Commission on Terrorist Attacks Upon the United States*, 2004, pp. 58, 366

<sup>100</sup> Todd Moss, "After the Plane Bomber, Where in the World is Nigeria's President?" Center for Global Development: Views from the Center", retrieved at: <http://blogs.cgdev.org/globaldevelopment/2010/01/after-the-plane-bomber-where-in-the-world-is-nigerias-president.php>

<sup>101</sup> Ray Walser "Abdulmutallab, Nigeria and al-Qaeda: Are We Sufficiently Focused on Africa?", The Foundry, Heritage Foundation, 8 January 2010, retrieved at: <http://blog.heritage.org/2010/01/08/abdulmutallab-nigeria-and-al-qaeda-are-we-sufficiently-focused-on-africa/>

from within their borders.<sup>102</sup> After the attacks, analysts and policymakers focused on crumbling states as focal points for a global terrorist threat, not simply as potentially passive and unwilling hosts for transnational terrorist networks, but as active “breeders” of terrorist recruits.<sup>103</sup>

The consensus that failing states fuel terrorism is widespread. The final report of the United Nations High-Level Panel on Threats, Challenges, and Change argued that “terrorism flourishes in environments of despair, humiliation, poverty, political oppression, extremism and human rights abuse...and it profits from weak State capacity to maintain law and order.”<sup>104</sup> Among American politicians, there is near-unanimity. All of the major candidates for the 2008 US presidential campaign used their statements in *Foreign Affairs* to draw a link between failed states and the threat of transnational terrorism.<sup>105</sup> And a number of politicians— including United States President Barack Obama and his challenger in the 2012 election, Mitt Romney, highlighted a specific risk: that the toxic combination of poverty, and inept, illegitimate governance will prime potential recruits, facilitating their mobilization by radicals and extremists.<sup>106</sup> Stephen Krasner and Carlos Pascual explain how these factors combine to create terrorist recruits: “left in dire straits, subject to depredation, and denied access to basic services, people become susceptible to the exhortations of demagogues and hatemongers.”<sup>107</sup> According to former U.S. Secretary of Defense Robert Gates, the risks are stark: “in the decades to come, the most lethal threats to the United States’ safety and security— a city poisoned or reduced to rubble by a terrorist attack— are likely to emanate from states that cannot adequately govern themselves or secure their own territory.”<sup>108</sup> The consensus view, in short, is that the weaker the state, the greater its potential to fuel transnational terrorism by producing flows of recruits.

Do fragile and failed states “breed” terrorists? Among policymakers and analysts the connection between crumbling states and terrorism is often drawn on the basis of a few, high-profile data points. Al Qaeda’s presence in war-torn Afghanistan prior to the September 11th attacks is frequently invoked; so too is the massive upsurge in suicide

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<sup>102</sup> See W. Michael Reisman, “International Legal Responses to Terrorism”, *Houston Journal of International Law*, Vol. 22, No. 1, Fall 1999, p. 50, and Lori Fisler Damrosch “Sanctions Against Perpetrators of Terrorism”, *Houston Journal of International Law*, Vol. 22, No. 1, Fall 1999, p. 68, Louis Henkin, “That ‘S’ Word: Sovereignty, and Globalization, and Human Rights, Et Cetera”, *Fordham Law Review*, Vol. 68, 1999, No. 1, p. 9

<sup>103</sup> Marla C. Haims, David C. Gompert, Gregory F. Treverton, Brooke K. Stearns, “Breaking the Failed-State Cycle”, RAND Corporation, p. 1, 2008

<sup>104</sup> United Nations High Level Panel on Threats, Challenges, and Change, *A More Secure World: Our Shared Responsibility*, 2004, p. 47

<sup>105</sup> Rudolph Giuliani, “Toward a Realistic Peace: Defending Civilization and Defeating Terrorists by Making the International System Work”, *Foreign Affairs*, Vol. 86, No. 5, 2007, p. 11”; Hillary Rodham Clinton, “Security and Opportunity for the Twenty-First Century”, *Foreign Affairs*, Vol. 86, No. 6, 2007, p. 15; John McCain, “An Enduring Peace Built on Freedom: Securing America’s Future”, *Foreign Affairs*, Vol. 86, No. 6, 2007 p. 20

<sup>106</sup> Barack Obama, “Renewing American Leadership”, *Foreign Affairs*, Vol. 86, No. 4, 2007, p. 11; John Edwards, “Reengaging with the World: A Return to Moral Leadership”, *Foreign Affairs*, Vol. 86, N. 5, 2007, p. 33; Mitt Romney, “Rising to a New Generation of Global Challenges”, *Foreign Affairs*, Vol. 86, No. 4, pp. 26-7; Chuck Hagel “A Republican Foreign Policy”, *Foreign Affairs*, Vol. 83, No. 4, 2004

<sup>107</sup> Stephen D. Krasner and Carlos Pascual, “Addressing State Failure”, *Foreign Affairs*, Vol. 84, No. 4, 2005, p. 153

<sup>108</sup> Robert M. Gates “Helping Others Defend Themselves: The Future of U.S. Security Assistance”, *Foreign Affairs*, May/June 2010

attacks and other terrorist tactics during the miasma of post-invasion Iraq, as well as occasional— if unsettling— cases like that of Umar Farouk Abdulmutallab. These data points, though suggestive, are potentially quite misleading. While Al Qaeda was based in Afghanistan, only one of the nineteen terrorists who actually took part in the attacks came from a state which might be described as having “failed”: Lebanon. Fifteen other attackers came from Saudi Arabia, two from the United Arab Emirates, and one from Egypt.<sup>109</sup> The upsurge of terrorist violence in post-invasion Iraq was essentially domestic, employed by insurgents as an asymmetric tactic against vastly better armed and equipped occupying forces, rather than as a transnational weapon.

In this chapter, I present a new empirical test of the conventional wisdom linking fragile and failing states with terrorist transnational terrorist recruitment, using a panel dataset of 188 countries from 1980 to 2006. This analysis presents several refinements over prior research. First, I utilize a novel measure of state fragility, a risk index developed by the Canadian Indicators for Foreign Policy Project (CIFP) for the Canadian Ministries of Defense and Foreign Affairs.<sup>110</sup> Because the index was designed as a tool for policymakers, it more closely matches the dominant conceptualizations of state fragility and failure among policymakers than the proxies and indices utilized in prior empirical research. Second, I filter and refine an open-source dataset of transnational terrorist attacks to derive a dependent variable with less measurement error, and a narrower operationalization of transnational terrorism that has better measurement validity. Third, I specify and test several distinct causal pathways through which analytically distinct dimensions of state fragility— breakdowns in state authority, legitimacy, and public goods provision— could separately drive the supply and the demand sides of terrorist recruitment. Unpacking the separate dimensions state fragility also affords an opportunity to test whether the corrosion of specific state functions rather than a shock to overall state capacity, is linked with transnational terrorism. This approach may offer more targeted and helpful guidance to analysts and policymakers.

The core finding I present in this chapter is simple: the conventional wisdom is wrong. Fragile and failed states are no more likely than average polities to “breed” and export terrorist recruits. The hallmark of state failure— the collapse of political authority and territorial control— is, if anything, negatively related to the production of transnational terrorist recruits. In addition, I find no relationship between the supposedly toxic combination of illegitimacy and weak authority and the production of transnational terrorism. Instead, the opposite is the case: states that have weak or contested political legitimacy but *robust* authority— for instance, many of the authoritarian states that were toppled during the Arab Spring— are far more likely to generate terrorist recruits.

The chapter consists of five sections. In section two, I unpack the broad-brush connection between fragile states and terrorist recruitment, and isolate three subsidiary causal

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<sup>109</sup> This point is made by Anna Simons and David Tucker, “The Misleading Problem of Failed States: a ‘Socio-Geography’ of Terrorism in the Post-9/11 Era”, *Third World Quarterly*, Vol. 28, No. 2, 2007, p. 388

<sup>110</sup> See David Carment, Stewart Prest, and Yiagadeesen Samy, *Security, Development, and the Fragile State: Bridging the Gap between Theory and Policy*, 2009. Also: Canadian Indicators for Foreign Policy: <http://www4.carleton.ca/cifp>

mechanisms, which I review and formalize as testable propositions. In the third section, I introduce and discuss the data sources, as well as a set of robustness checks that are woven throughout the analysis. In the fourth section, I present the main empirical analysis: a series of cross-sectional time-series negative binomial regressions. Section five concludes by noting remaining theoretical puzzles and empirical challenges, in particular the analytic and data challenges created by significant variation in subnational state capacity.

## **2. Unpacking the conventional wisdom: three mechanisms through which state fragility might “breed” terrorism**

Do fragile and failed states generate international terrorism? If so, how? Over the past decade, a large and growing body of research has attempted to trace the linkages between the state fragility and international terrorism. For the most part, research has consisted of qualitative analyses that have aimed to build theory, identify and explore the dynamics of specific country cases, and more precisely specify the causal mechanisms linking the breakdown of state capacity with the international terrorism.<sup>111</sup> The relatively few empirical analyses that push beyond single cases to systematically test the link between fragile states and terrorism appear to validate policymakers’ fears. But as I discuss below, these studies have had to contend with data limitations that create difficult tradeoffs between measurement validity and effective temporal and spatial coverage, and have selected proxies that may create a misleading picture of the relationship between institutional weakness and transnational terrorism.

In several pathbreaking analyses, Piazza utilized a dataset of state failure events produced by the CIA-funded Political Instability Task Force,<sup>112</sup> and identified a strong connection between acute episodes of political instability and terrorism. Failing states, he found, both suffered from increased domestic terrorist attacks, and were more likely than other states to export terrorists abroad to conduct attacks.<sup>113</sup> Moreover, he found a positive correlation between instability and terrorist activity, suggesting that failed rather than merely weak states were likely to be hotspots for global terrorism. In a 2007 study, Lai utilized civil and interstate war as proxies for state failure, arguing that states involved in civil conflict were likely to have weaker capacity to control both borders, and would thus offer terrorists a lower-risk, lower-cost space in which to operate, while states engaged in interstate conflict

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<sup>111</sup> Piazza, *ibid.*, emphasizes this point. See Ray Takeyh and Nikolas Gvosdev, “Do Terrorist Networks Need a Home?”, *the Washington Quarterly*, Summer 2002, p. 100; Aiden Hehir, “The Myth of the Failed State and the War on Terror: A Challenge to the Conventional Wisdom”, *Journal of Intervention and Statebuilding*, Vol. 1 No. 3; Corinne Graff, “Poverty, Development, and Violent Extremism in Weak States”, in Susan E. Rice, Corinne Graff, and Carlos Pascual, eds., *Confronting Poverty: Weak States and U.S. National Security*, 2010; Ken Menkhaus, “Quasi-States, Nation-Building, and Terrorist Safe Havens”, *the Journal of Conflict Studies*, Fall 2003; Stewart Patrick, “Weak States and Global Threats: Fact or Fiction?”, *the Washington Quarterly*, Vol. 29, No. 2, and Patrick, “‘Failed’ States and Global Security”, *ibid.*

<sup>112</sup> formerly known as the State Failure Task Force

<sup>113</sup> James A. Piazza, “Incubators of Terror: Do Failed and Failing States Promote Transnational Terrorism?”, *International Studies Quarterly*, Vol. 52 2008, pp. 469-488, and James A. Piazza, “Draining the Swamp: Democracy Promotion, State Failure, and Terrorism in 19 Middle-Eastern Countries” *Studies in Conflict and Terrorism*, Vol. 30 No. 6



would have reduced ability to control their borders. Utilizing similar regression techniques, he found the same positive relationship between state failure and terrorism.<sup>114</sup>

However, both approaches to measuring state failure adopt measurement strategies that raise problems for inference. While the Political Instability Task Force defined state failure as “instances in which central state authority collapses for several years”<sup>115</sup>, in order to boost the temporal and spatial coverage of its dataset, it operationalized and coded any one of four event types as state failure: revolutionary wars, in which challengers seek to overthrow or displace the central government; insurgencies or sustained violent uprisings by ethnic, religious, or other identity groups; genocides or politicides; and ‘adverse regime changes’, a category which includes shifts towards authoritarian rule, elite or regime instability, or state collapse.<sup>116</sup> This approach is problematic. Revolutionary war, ethnic war and genocide, politicide, and regime change are all forms of political instability. They *may* be accompanied by the weakening of state authority. But important instances of political instability may also reflect state *strength* rather than weakness.

For instance, the PITF’s coding for Sudan from 1983 through 2005 identifies the country as experiencing severe ethnic war and genocide. In this case, the severity of violence is a signal of strength and statecraft rather than failure or weakness. Prunier and Gisselquist describe Sudan as a “successfully” failed state, arguing that the state’s political elites have “knowingly created state failure in the process of achieving their own narrow objectives”— maintaining the political and economic dominance of the North of the country, under the stewardship of a narrow Islamist elite, while systematically neglecting public goods provision and prosecuting a genocidal, scorched earth counterinsurgency campaign in the South.<sup>117</sup> By contrast, the PITF codes the unified state of Yemen as having only sporadic revolutionary and ethnic war during a span of time in which the state effectively ceased to exist across large swaths of the country. The use of civil and interstate war as proxies raises similar problems. Both internal and international armed conflict may indeed reduce the ability of a state to govern its territory and secure its borders. And in some instances, war may have the opposite effect: governments facing rural insurgency may flood the countryside with military units, seeking to pacify restive

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<sup>114</sup> Brian Lai, “Draining the Swamp: An Empirical Examination of the Production of International Terrorism, 1968-1998”, *Conflict Management and Peace Science*, Vol. 24, No. 4, 2007

<sup>115</sup> Jack Goldstone, et al., “Introduction/Measuring State Failure”, State Failure Task Force Report: Phase III Findings, p. 3

<sup>116</sup> The Task Force adopted a broader operationalization for several reasons. First, given the extremely large number (1300+) explanatory variables they sought to test, the relatively small number of cases (<20) of true institutional collapse was simply too small a sample. Substantially loosening the definition of state failure provided a far larger basis for statistical analysis. A second, more interesting justification concerned the hazy line between weak and failing states: the SFTF has noted that events which fall below the threshold of institutional collapse remain objects of analytical and policy concern, and thus has sought to probe a range of events that are “typically associated with state breakdown.” Notwithstanding these justifications, the shift introduces significant conceptual slippage: the events counted as state failure do not necessarily reflect the underlying concept. See Monty G. Marshall, Ted Robert Gurr, and Barbara Harff, “PITF - State Failure Problem Set: Internal Wars and Failures of Governance, 1955-2008”, 29 April 2009 Revision, retrieved at: <http://globalpolicy.gmu.edu/pitf/PITFProbSetCodebook2008.pdf>

<sup>117</sup> See Gérard Prunier and Rachel Gisselquist, “The Sudan: A Successfully Failed State”, in Rotberg ed. *State Failure and State Weakness in a Time of Terror*, p. 104

populations, while interstate war may lead to the militarization and fortification of borders.<sup>118</sup>

Collectively, Lai and Piazza's findings suggest that various forms of political disorder and violence may be linked with both domestic and transnational terrorism. But given the potential conceptual mismatch and divergence from policymakers' and scholars' conceptualization of state fragility, we cannot be sure of the strength of their causal inferences. Moreover, even if crumbling states do generate transnational terrorist recruits, the general empirical relationship does not tell us why.

If fragility consists of interlocking deficits in institutional legitimacy, public service provision, and territorial control, it is unclear whether each of these deficits is individually sufficient to drive the supply of recruits to international terrorist organizations or, instead, if such deficits are *jointly necessary* to fuel terrorism. In the following sub-sections, I assess the literature on the link between terrorism and each dimension of state fragility. The weakening of state territorial control is thought to primarily influence the demand side of the international terrorist labor market, by influencing where transnational organizations locate their operations and source recruits. The other two mechanisms, illegitimate governance and weak public service provision, are thought to function on the supply side, by increasing the number of potential recruits, and lowering the cost. I outline each mechanism, and formalize a corresponding set of testable propositions regarding the link between each dimension of fragility and the production of terrorist recruits.

### Weak territorial control

Just as firms strategically locate in order to reduce regulatory burdens and arbitrage price differentials in the factors of production, terrorist groups and "nihilist outlaws" might preferentially locate in fragile and failing states, in order to reduce the cost and risk of operations, most importantly the recruitment and training of operatives.<sup>119</sup> The *Country Report on Terrorism*, assembled by the US Department of State's coordinator for counterterrorism, notes that "ungoverned, under-governed, or ill-governed areas" offer terrorists an attractive location to "recruit, train, and operate"<sup>120</sup>, while former World Bank president Robert Zoellick, suggests terrorist organizations "recruit, train, and prosper" within "broken states."<sup>121</sup>

The primary attraction of fragile and failed states as operational hubs is in the porosity and weakness of state surveillance, border control and policing, permissive conditions that

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<sup>118</sup> See John Herz "Rise and Demise of the Territorial State", *World Politics*, Vol. 9 No. 4, 1957. Though Herz notes that some dimensions of total war, such as psychological warfare, economic blockade, and nuclear war, all reach through the "hard shell" of the state.

<sup>119</sup> Ray Takeyh and Nikolas Gvosdev, "Do Terrorist Networks Need a Home?", *the Washington Quarterly*, Summer 2002, p. 98, Sebastian Mallaby, "The Reluctant Imperialist: Terrorism, Failed States, and the Case for American Empire", *Foreign Affairs*, Vol. 81, No. 2, 2002, p. 2

<sup>120</sup> Office of the Coordinator for Counterterrorism, United States Department of State, *Country Reports on Terrorism 2009*, p. 208., retrieved at: <http://www.state.gov/documents/organization/141114.pdf>

<sup>121</sup> Robert Zoellick, "Fragile States: Securing Development" *Survival*, Vol. 50 No. 6, p. 68

allow terrorist groups to initially infiltrate and set up operations.<sup>122</sup> Taykeh and Gdosev argue that once terrorist groups establish themselves, states with weak authority make an ideal “corporate headquarters”, because the government lacks the coercive power to effectively interfere with terrorist operations.<sup>123</sup> Lai suggests lower state surveillance and pressure reduces the operating costs of terrorist groups, allowing them to reallocate and channel greater resources into producing attacks.<sup>124</sup> In a morose analysis of Afghanistan, the London Times concluded that “(terrorists) fill a space and train... recruits where the writ of constitutional government does not run.”<sup>125</sup>

Several possible causal pathways could connect terrorist group basing in fragile states with local recruitment. Because recruitment requires that terrorist groups “advertise”, it potentially exposes them to detection, or penetration by police or informants.<sup>126</sup> These operational risks may be mitigated in fragile states with weak security and intelligence services, and as a result terrorist organizations may be able to more openly and aggressively seek recruits. This mechanism could also work on the supply side: Lai notes that in weak states, potential recruits will be less worried that they will be detected by government agents; as a result, non-state actors will have a larger potential local pool from which to recruit operatives.<sup>127</sup> McAllister argues that interdiction efforts elsewhere may drive terrorist organizations to recruit operatives locally, and notes that as Al Qaeda’s network expanded and came under increasing pressure from global counterterrorist efforts, it began to increasingly rely on “local walk-ins.”<sup>128</sup>

Terrorist organizations may even prefer to recruit operatives from conflict zones. Campos and Gassebner argue that endemic civil conflict and political instability produces a potential pool of recruits with a specific and useful set of “military, tactical, and organizational skills needed to carry out terrorist acts.”<sup>129</sup> Socio-psychological explanations, particularly theories of social learning, suggest that violent conflict can also produce populations more susceptible to recruitment to terrorism, as youths witness violence and its valorization, and are exposed to propaganda and messaging.<sup>130</sup>

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<sup>122</sup> Robert Rotberg, “The New Nature of Nation-State Failure”, *the Washington Quarterly*, Vol. 25, No. 3; Patrick, “Weak States and Global Threats”, *ibid.*, pp. 34-6; Eizenstat, Porter, and Weinstein, “Rebuilding Weak States”, p. 137

<sup>123</sup> Takeyh and Gvosdev, *ibid.*

<sup>124</sup> Lai, *ibid.*, p. 299

<sup>125</sup> “The Gathering Storm: Failed states, where lawful authority breaks down and terrorist groups move in, are a security threat and present an emerging humanitarian crisis” *The Times*, 2 January 2010, retrieved at: [http://www.timesonline.co.uk/tol/comment/leading\\_article/article6973468.ece](http://www.timesonline.co.uk/tol/comment/leading_article/article6973468.ece)

<sup>126</sup> Philip B. Heymann, “Dealing with Terrorism: An Overview”, *International Security*, Vol. 26, No. 3, Winter 2001/02, p. 29

<sup>127</sup> Lai, *ibid.*, pp. 299-300

<sup>128</sup> Brad McAllister, “Al Qaeda and the Innovative Firm: Demythologizing the Network” *Studies in Conflict and Terrorism*, Vol. 27, 2004, pp. 304-5

<sup>129</sup> Nauro Campos and Martin Gassebner “The Roots of Terrorism: Economic Development, Political Instability and The Escalation Effect”, working paper, February 2011, pp. 18-19

<sup>130</sup> Jeff Victoroff, “The Mind of the Terrorist: A Review and Critique of Psychological Approaches”, *Journal of Conflict Resolution*, Vol. 49, No. 1, p. 18

A number of scholars have challenged the argument that states with failed territorial control would offer a permissive environment for international terrorist groups to operate. Newman examines a sample of 54 terrorist organizations, and finds that the most violent groups have emerged and operated in states which perform relatively poorly on a battery of governance and state capacity indicators. However, he also finds that terrorist groups have both originated and operated in developed democracies, and that many of the world's weakest states have neither spawned nor hosted terrorist groups.<sup>131</sup> Hehir examines the number of groups on the United States' foreign terrorist organization list operating within failed states, and finds that apart from several usual suspects—Afghanistan, Iraq, and Pakistan—failed states do not host an abnormally high number of terrorist groups.<sup>132</sup>

Several scholars have derided the “seemingly self-evident set of assumptions about the kinds of operating environment terrorist networks need”,<sup>133</sup> and argue that weak, rather than failed, states provide a more effective base for terrorist organizations. One line of argument focuses on operational security. Ken Menkhaus suggests that while it might seem intuitive that terrorist organizations would thrive in a weak state environment free of surveillance or control by state institutions, in practice failed states provide little security, privacy, and local operational safety to transnational terrorists. Fragile states are violent and unstable. They also contain relatively few foreigners; a foreign terrorist organization would stand out, and suffer from the same vulnerabilities as UN peacekeepers or humanitarian aid workers: kidnapping, violence, extortion.<sup>134</sup> As a result, far from offering safe haven, failed states may present terrorists with far greater operating costs and operational risks than more stable environments.<sup>135</sup> For this reason, terrorist organizations may prefer to operate in somewhat fragile states which still maintain “the veneer of sovereignty.”<sup>136</sup>

Second, Stewart Patrick argues that transnational terrorist groups may prefer to operate in “badly governed” rather than failed states because of their infrastructural needs: like any multinational organization, terrorist networks need access to global infrastructure: banking systems, telecommunications, and transportation. These systems may be absent or intermittent in fragile states, but still accessible and functioning in weak institutions.<sup>137</sup> Lastly, Simons and Tucker argue that failed states may not necessarily lead to more plentiful and accessible recruits: skilled fighters would also be in heavy demand

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<sup>131</sup> Newman, *ibid.*, pp. 475, 481, 483-484

<sup>132</sup> Hehir, *ibid.*, pp. 314-317

<sup>133</sup> Ken Menkhaus, “Quasi-States, Nation-Building, and Terrorist Safe Havens”, *the Journal of Conflict Studies*, Fall 2003, p. 7

<sup>134</sup> *ibid.*, pp. 12-13

<sup>135</sup> Simons and Tucker, *ibid.*, p. 389

<sup>136</sup> Cristiana C. Brafman Kittner, “The Role of Safe Havens in Islamist Terrorism”, *Terrorism and Political Violence*, Vol. 19, No. 3, 2007, p. 310

<sup>137</sup> Patrick, “Weak States and Global Threats”, p. 35

<sup>138</sup> Simons and Tucker, *ibid.*, p. 388

locally,<sup>138</sup> potentially raising the market price and recruitment cost to terrorist organizations.

Two testable propositions emerge from these debates:

*Hypothesis 1a: States with fragile and failed authority will produce more transnational attackers than states with average to strong authority*

*Hypothesis 1b: States with fragile authority will produce more terrorist attackers than states with failed authority*

### Illegitimate rule

The 1996 communiqué in which Osama bin Laden first declared *jihad* against the United States, linked a “volcanic” upwelling of rage across the Muslim world to “severe oppression, suffering, excessive iniquity, humiliation.”<sup>139</sup> On this point, bin Laden and Western governments agree. The 2006 National Security Strategy of the United States argued that “transnational terrorists are recruited from people who have no voice in their own government and see no legitimate way to promote change in their own country. Without a stake in the existing order, they are vulnerable to manipulation by those who advocate a perverse vision based on violence and destruction.”<sup>140</sup> The US government also argues that there is a connection between human rights abuses and terrorism: in its 2001 Country Report on Human Rights, the State Department declared that “only through the promotion and protection of human rights and fundamental freedoms can the international community be secure from the scourge of terrorism.”<sup>141</sup> The Organization for Security and Cooperation in Europe has linked radicalization and extremist violence to a cluster of political root causes, including repression, weak rule of law, and disenfranchisement.<sup>142</sup>

Scholars have argued that there is a direct and powerful linkage between political oppression and terrorist violence. In a seminal article, Martha Crenshaw argues that terrorist violence can arise from a “lack of opportunity for political participation” that creates resentment and dissatisfaction.<sup>143</sup> Authoritarian rule that effectively excludes some portions of the political spectrum from electoral competition may also force opposition groups underground, and encourage them to take up terrorism as a tool of resistance. Over time, authoritarian states may also generate hardened and more extremist opposition

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<sup>139</sup> Osama Bin Laden, with Robert O. Marlin, ed., *What Does al-Qaeda Want?: Unedited Communiques*, 2004, p. 4

<sup>140</sup> White House, *The National Security Strategy of the United States of America*, March 2006, introduction, p. 10

<sup>141</sup> U.S. Department of State, “Introduction”, *2001 Country Reports on Human Rights Practices*, Section I., 2002. Retrieved at: <http://www.state.gov/g/drl/rls/hrrpt/2001/8147.htm>

<sup>142</sup> See Organization for Security and Cooperation in Europe, Report from an “Expert Meeting on Security, Radicalization and the Prevention of Terrorism” 28-29 July, 2008, Istanbul

<sup>143</sup> Martha Crenshaw, “The Causes of Terrorism”, *Comparative Politics*, Vol. 13, No. 4, 1981, pp. 383-4

movements, by eroding the “public virtues of political moderation and compromise, which are necessary ingredients of nonviolent political expression,”<sup>144</sup> and encouraging anti-regime activists to more extreme positions.<sup>145</sup> In effect, repression weakens support for moderate opposition elements in favor of more radical groups or leaders.<sup>146</sup> Similarly, Muravchik argues that heavy-handed repression and a “climate of unfreedom” under authoritarian rule erode dignity and generate anger.<sup>147</sup> Paul Pillar states the argument simply and forcefully: “democracy is bad news for terrorists. The more peaceful channels people have to express grievances and pursue their goals, the less likely they are to turn to violence.”<sup>148</sup>

All of this would suggest a simple linear relationship between political oppression and terrorism. However, a counter-theory suggests that terrorist recruits may flow from partial democracies and weak autocracies. Windsor notes that illegitimate rule is neither necessary nor sufficient to generate terrorist violence: many repressive regimes have not generated terrorist groups, and terrorist groups have also emerged in democratic societies.<sup>149</sup> Democracies might mitigate the risk of terrorism by offering non-violent means for channeling political opposition, but are restrained in prosecuting counterterrorist campaigns by robust civil and political rights. Authoritarian states, on the hand, have access to a wider and more effective array of surveillance and repression but generate greater violent dissent. Weakly authoritarian regimes could possess the vulnerabilities of both forms of government, but the advantages of neither.<sup>150</sup> In this vein, Martha Crenshaw notes that terrorism is more likely to emerge in “situations where paths to the legal expression of opposition are blocked, but where the regime's repression is inefficient.”<sup>151</sup> These arguments have found some empirical support: Abadie shows that the terrorism risk is highest for countries with intermediate levels of political rights; both democracies and strong autocracies exhibit lower risk levels.<sup>152</sup> Krueger and Laitin find that terrorists appear to come primarily from partially-democratic countries and unstable polities,<sup>153</sup> and Krueger and Malečková find that, controlling for the effect of poverty,

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<sup>144</sup> Piazza, *ibid.*, p. 522

<sup>145</sup> An implication of this argument is that organizations that employ terrorism are not irrational, but instead select a specific strategy of violence as the optimal means to achieve their political objectives, given their resources and constraints. See Martha Crenshaw “Theories of Terrorism: Instrumental and Organizational Approaches”, in David C. Rapoport, ed. *Inside Terrorist Organizations*, 1988, pp. 14-6

<sup>146</sup> Windsor, *ibid.*, p. 45

<sup>147</sup> Joshua Muravchik, “Freedom and the Arab World”, *The Weekly Standard*, 31 December 2001

<sup>148</sup> Scott Shane, As Regimes Fall in Arab World, Al Qaeda Sees History Fly By, NY Times, 27 February 2011, retrieved at: <http://www.nytimes.com/2011/02/28/world/middleeast/28qaeda.html?emc=eta1>

<sup>149</sup> Windsor, *ibid.*, p. 44

<sup>150</sup> Krieger and Meierrieks, “What Causes Terrorism?”, *ibid.*, p. 7; Heymann, *ibid.*, p. 34

<sup>151</sup> Martha Crenshaw, “The Causes of Terrorism”, *ibid.* pp. 383-4

<sup>152</sup> Alberto Abadie, “Poverty, Political Freedom, and the Roots of Terrorism”, *American Economic Association Papers and Proceedings*, Vol. 96, No. 2, 2006, pp. 51, 54-6

<sup>153</sup> Alan B. Krueger and David D. Laitin, “Kto Kogo? A Cross-country Study of the Origins and Targets of Terrorism”, in Philip Keefer and Norman Loayza eds., *Terrorism, Economic Development, and Political Openness*, 2008, p. 161

countries with weak civil liberties are more likely to generate terrorist recruits. The effect for political freedoms is similar, though weaker.<sup>154</sup>

It would seem intuitive that oppression, whether incomplete or crushing, would principally fuel domestic terrorism. However, if, as Karin von Hippel argues, the “real terrorist breeding grounds” are authoritarian and semi-authoritarian states that are propped up by allies, then opponents of these regimes may be driven to strike against patron states which they believe to be cynically sustaining authoritarian rule while espousing support for open politics and human rights.<sup>155</sup> This argument is applied most often to terrorism directed against the United States by islamists angered by American support for secular authoritarian regimes.<sup>156</sup> Robert Pape’s analysis of global suicide terrorism dovetails with this argument. Pape notes that “what nearly all suicide terrorist attacks have in common in a specific secular and strategic goal: to compel modern democracies to withdraw military forces from territory that the terrorists consider to be their homeland.”<sup>157</sup> This applies directly to Al Qaeda, as one of the group’s foremost objectives was the removal of U.S. soldiers from Saudi soil.<sup>158</sup> In sum, domestic repression may yield both localized and transnational terrorism.

Debates over the relationship between legitimacy and terrorism yield three testable propositions:

*Hypothesis 2a: States with fragile or failed legitimacy will produce more transnational terrorist attackers than states with legitimate institutions*

*Hypothesis 2b: Weakly autocratic states will generate more terrorist attackers than strongly autocratic states*

*Hypothesis 2c: States with fragile or failed legitimacy and fragile or failed authority will be associated with more terrorist attackers than illegitimate states with higher levels of authority*

### Public service deficits and poverty

Of all the potential mechanisms linking state fragility and terrorist recruitment, weak public service provision has received the most sustained attention. If, as Carlos Pascual and Stephen Krasner have argued, poverty, immiseration and desperation make people

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<sup>154</sup> Alan B. Krueger and Jitka Malečková, “Education, Poverty and Terrorism: Is There a Causal Connection?”, *Journal of Economic Perspectives*, Vol. 17, No. 4, 2003, pp. 139-141

<sup>155</sup> Karin Von Hippel, “The Roots of Terrorism: Probing the Myths”, *the Political Quarterly*, Vol. 73, Issue Supplement S1, August 2002 pp. 35-6

<sup>156</sup> See Daniel Byman, *The Five Front War: the Better Way to Fight Global Jihad*. Barry Rubin argues strenuously against this narrative: see Rubin “The Real Roots of Arab Anti-Americanism” *Foreign Affairs*, Vol. 81, No. 6, 2002.

<sup>157</sup> Robert A. Pape, *Dying to Win: The Strategic Logic of Suicide Terrorism*, 2005, p. 4

<sup>158</sup> *ibid.* p. 42

susceptible to terrorist rhetoric,<sup>159</sup> then the collapse of health, education, and other core services could both increase the supply of potential recruits, and simultaneously drive down the costs of recruiting operatives.<sup>160</sup> Analysts have advanced three basic arguments as to why.

Some argue that terrorist organizations view gaps in social service provision as an opportunity, and construct parallel public service systems in order to cultivate recruits. Hezbollah famously operates both primary schools and terrorist training camps. Lai notes that Hamas cultivated support in Gaza and the West Bank by similarly moving to fill the vacuum in basic social service provision.<sup>161</sup> Piazza advances the same argument, noting that non-state actors may exploit state weakness by building “autonomous political, economic, and social institutions”, and cites the proliferation of radical *madrassah* in Pakistan as an example.<sup>162</sup>

A second cluster of explanations focuses on the rationalist calculations of impoverished and vulnerable populations. Stern examined the dynamics of insurgent recruitment in Pakistan, and found that while poor families tended to send sons to fight in the jihad against Indian control over Kashmir, wealthier families tended to send money rather than recruits.<sup>163</sup> The father of a Pakistani *jihadi* admitted that poor parents with many children are willing to give a child to jihad because they will “die in disease if not in war.”<sup>164</sup> A third explanation suggests that poverty may not directly generate recruits, but instead acts as accelerant for political grievances. Susan Rice argues that poverty and disillusionment may sharpen existing religious or identity-rooted grievances, and render youths more vulnerable to terrorist recruitment.<sup>165</sup> Blomberg and Hess, drawing on a speech by Osama bin Laden, suggest that economic motivations can spark terrorism by amplifying the effect of other, non-economic grievances. Bin Laden commented that “the ordinary man knows that (Saudi Arabia) is the largest oil producer in the world, yet at the same time he is suffering from tax and bad services. Now the people understand the speeches of the ulemas in the mosques– that our country has become an American colony.”<sup>166</sup>

A number of scholars have attacked the link between poverty and terrorism. Krueger and Malečková used biographical data on 129 Hezbollah fighters who were killed in action, and found that on average, the fighters were better educated and less impoverished than the Lebanese population, as well as the minority Shia population from which the organization draws the bulk of its recruits. Using a larger cross-national dataset of terrorist

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<sup>159</sup> Krasner and Pascual, *ibid.*

<sup>160</sup> Tim Krieger and Daniel Meierrieks, “What Causes Terrorism?”, *Public Choice*, Vol. 147, Nos. 1-2, p. 6

<sup>161</sup> Lai, *ibid.*, pp. 299-300

<sup>162</sup> Piazza, “Incubators of Terror..”, *ibid.*, p. 471

<sup>163</sup> Jessica Stern, “Pakistan’s Jihad Culture”, *Foreign Affairs*, Vol. 79, No. 6 Nov/Dec 2000

<sup>164</sup> *ibid.* pp. 120-122

<sup>165</sup> Susan Rice “The New National Security Strategy: Focus on Failed States”, Brookings Institution Policy Brief No. 116, February 2003, p. 2

<sup>166</sup> Blomberg and Hess, “from (no) butter to guns, *ibid.*, p. 85, citing The Washington Post, 23 August, 1998



attacks, they also found no relationship between participation in terrorism and several national-level proxy measures for material wellbeing and life opportunities.<sup>167</sup> Studies using micro-level data drawn from individual profiles, as well as field interviews and ethnographic accounts, also suggest that the link between poverty and recruitment is complex and contingent. Marc Sagerman examined data on the lives of 172 transnational terrorists, and found that most had attended at least some college, and that over 40% were professionals.<sup>168</sup> Nasra Hassan, an international aid worker with UNWRA, a UN agency tasked with providing humanitarian assistance and advocacy for Palestinian refugees, interviewed several hundred people “involved in the most militant camps of the Palestinian cause”, including thwarted suicide bombers, bombers in training, the families of successful attackers, and operatives within Hamas al-Qassam, and other groups. She found that many suicide bombers were middle-class and employed, and none were uneducated or severely impoverished.<sup>169</sup>

It is possible that the relatively high levels of education and wealth among terrorist recruits reflects the *demand* for terrorist operatives, rather than the *supply*. Ethan Bueno de Mesquita argues that the relatively privileged background of terrorists may be misleading, as this data reflects only those who are successfully recruited rather than the larger pool of those who are willing to join terrorist organizations. Drawing on a game theoretic model, he argues that individuals with limited market opportunities and strongest antipathy towards political institutions are more likely to attempt to join a terrorist group; however, terrorist groups strategically screen candidates, selecting the best-educated candidates, who they believe will make better operatives.<sup>170</sup> In short, while poverty and low educational attainment increase the overall supply of terrorist recruits, the fact that terrorist operatives tend to be of average or above-average education and wealth can be explained by the selection imperatives of terrorist groups rather than the overall population of recruits.<sup>171</sup> de Mesquita’s model— and its implication of a labor market discontinuity— appears to be borne out by qualitative research. During Hassan’s fieldwork among Palestinian terrorist organizations, a Hamas leader reported that “our biggest problem is the hordes of young men who beat on our doors, clamoring to be sent. It is difficult to select only a few. Those whom we turn away return again and again, pestering us,

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<sup>167</sup> The proxy measures were all national-level: GDP, literacy rates, and tertiary school enrollment. See Krueger and Malečková, *ibid.*, pp. 130-135, 140

<sup>168</sup> Marc Sagerman, *Understanding Terror Networks*, 2004

<sup>169</sup> Nasra Hassan “An Arsenal of Believers: Talking to the ‘human bombs’”, *The New Yorker*, 19 November, 2001, retrieved at: [http://www.newyorker.com/archive/2001/11/19/011119fa\\_FACT1](http://www.newyorker.com/archive/2001/11/19/011119fa_FACT1)

<sup>170</sup> See Ethan Bueno de Mesquita, “The Quality of Terror”, *American Journal of Political Science*, Vol. 49, No. 3, 2005

<sup>171</sup> Bueno de Mesquita draws empirical support for his model from the extensive guidelines on recruitment found in an Al Qaeda training seized by British police. The manual instructs Al Qaeda commanders to look for “...intelligence and insight, ability to observe and analyze, truthfulness and counsel...”, and an array of other attributes which would presumably correlate with education and labor market opportunities. Field data collected by Hassan provides yet more support: Palestinian terrorist groups screen candidates, selecting those with discretion and discipline. They also select operatives who can pass as Israeli. Passing requires Hebrew language skill, which correlates both with education and with economic opportunity, as jobs within Israel generally pay higher wages. See Hassan *ibid*, Mesquita, *ibid*. p. 523. Alan Krueger echoes this argument, but notes that while terrorist organizations select operatives which maximize their chance for success, they also need to thwart profiling efforts by governments, and so might avoid highly restrictive [and therefore predictable] recruitment patterns. Presumably this would preclude selecting from among the more limited pool of highly educated candidates. See Krueger, *What Makes A Terrorist?*, pp. 5-6, 49

pleading to be accepted.”<sup>172</sup> In her analysis of Pakistani militant recruitment, Stern found that a mid-level operative in Lashkar-e-Taiba earned over seven times the average salary, an exorbitant wage which could be explained by an imperative to recruit higher-skilled operatives.

Nonetheless, Krueger notes that even if terrorism is primarily an occupation of economic elites, carried out by the well-resourced and well-educated, “Robin Hood” terrorists may be motivated to utilize violence by poverty and inequality.<sup>173</sup> If poverty and the collapse of public services expand the supply of potential operatives (and reduce the cost of unskilled recruits), we would expect that:

*Hypothesis 3: States with fragile or failed capacity for public goods provision will be associated with higher levels of transnational attacks than states with average capacity*

#### **4. Data and empirical strategy**

In order to test the relationship between state fragility (and its sub-components) and transnational terrorist recruitment, I estimate a series of cross-sectional time-series negative binomial regression models. In this section, I begin by outlining the data sources used to construct the dependent and independent variables, identify relevant measurement challenges and their implications, and discuss model specification and a series of robustness checks woven throughout the empirical analysis. Results are presented in the following section.

##### Constructing the dependent variable: international terrorist recruitment

In order to measure transnational terrorist recruitment, I use ITERATE, a dataset constructed from open media reports of terrorist attacks. ITERATE is employed in a range of quantitative analyses of terrorist events,<sup>174</sup> because uniquely among open source terrorism datasets, it provides information on the national origin of the attackers in each catalogued event.<sup>175</sup>

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<sup>172</sup> Hassan, *ibid.*

<sup>173</sup> Krueger, *What Makes a Terrorist?*, 2007, p. 47

<sup>174</sup> See, for instance Todd Sandler and Walter Enders, “Economic Consequences of Terrorism in Developed and Developing Countries: An Overview”; S. Brock Blomberg and Gregory D. Hess, “From (No) Butter to Guns? Understanding the Economic Role in Transnational Terrorism; and S. Brock Blomberg and Gregory D. Hess, “The Lexus and the Olive Branch: Globalization, Democratization, and Terrorism”, in Philip Keefer and Norman Loayza eds., *Terrorism, Economic Development, and Political Openness*, 2008

<sup>175</sup> It is important to note that this captures attackers’ *national origin*, rather than the site of their recruitment: for instance, a Nigerian national recruited in Yemen would be coded as from Nigeria. The gap in data on recruitment site is problematic, but endemic to open-source databases on global terrorism. The two other major databases in wide use—Global Terrorism Database [GTD], and the RAND Corporation’s Database of Worldwide Terrorism Events [RDWTI]—are both constructed from open source data; neither contains information on the national origin of attackers, nor data on the site at which terrorist operatives were recruited.

In order for an event to be counted within the dataset,<sup>176</sup> it must meet several criteria.<sup>177</sup> The event must:

1. involve the use of violence for political purposes;
2. have been “intended to influence the attitudes and behavior of a target group wider than the immediate victims”; and
3. “transcend national boundaries”, in terms of its victims, participants, or ramifications

These criteria screen out many forms of violence that are often lumped together with terrorism, including insurgent attacks (which have clear political intent, but do not necessarily attempt to influence the political calculus of a wider target group), mass violence (such as ethnic riots), and civil wars.<sup>178</sup> However, though ITERATE is designed to solely capture the dynamics of international terrorism, the expansiveness of its last criterion effectively includes a large number of terrorist events that may have international ramifications, but are strictly domestic in scope. For instance, a terrorist attack launched by Algerian nationals on the United States embassy in Algiers, would have international ramifications, and so would be included in the data as an international attack. Such events are clearly important in both human and geopolitical terms. However, the primary concern driving Western policymakers is not terrorism *within* fragile or failing states, but the risk that instability will metastasize and that terrorists *from* crumbling states will be recruited to strike overseas. In order to provide a direct test of the connection between state fragility and transnational terrorism, I apply an additional, more restrictive criterion: for an event to be included in the dataset, the attack must involve an attack by nationals of one country on the soil of another.

The challenges inherent to tracking international terrorism introduce several other potential sources of bias and measurement error, which I address through a combination of data cleaning and robustness checks. First, there is compelling evidence that authoritarian governments systematically repress reports of terrorism occurring within their borders. In an analysis of publicly available terrorism datasets, Drakos and Gofas find pervasive underreporting of terrorist incidents, which is strongly and positively correlated

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<sup>176</sup> ITERATE, like the Global Terrorism Database and the Database of Worldwide Terrorism Events, only contain instances of attacks, rather than failed or thwarted attempts. Cases like Abdulmutallab’s failed bombing attempt, although politically important, are not captured in any openly available dataset. This represents a significant loss of data, though perhaps not a significant methodological problem for this analysis: while some terrorist groups are more likely to succeed in launching attacks than others, it is unlikely that operatives of a specific nationality are more or less likely to successfully complete an attack than others.

<sup>177</sup> The full definition of terrorism employed by the ITERATE project is: “The use, or threat of use, of anxiety-inducing, extra-normal violence for political purposes by any individual or group, whether acting for or in opposition to established governmental authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims and when, through the nationality or foreign ties of its perpetrators, its location, the nature of its institutional or human victims, or the mechanics of its resolution, its ramifications transcend national boundaries.” See Edward Mickolus, Todd Sandler, Jean Murdock, and Peter Flemming, Codebook for International Terrorism: Attributes of Terrorist Events [ITERATE], 2009, [www.vinyardsoftware.com](http://www.vinyardsoftware.com)

<sup>178</sup> In an examination of the RAND-MIPT data, using incident descriptions to validate (or invalidate) their designation as terrorist violence, I found a large proportion of insurgency and civil-war related attacks, with particularly pervasive overcounting in Colombia.

with lack of media freedom and authoritarian governance.<sup>179</sup> Filtering out the large number of essentially domestic terrorist attacks reduces the vulnerability of the data to undercounting that is correlated with an important explanatory variable, state legitimacy. While authoritarian states have an interest in obscuring evidence of internal dissent by suppressing reports of attacks *within* their borders, they have considerably less ability to obscure the nationality of terrorists who launch attacks on foreign soil.

The identification and coding of terrorists associated with Palestinian groups poses a second challenge. For some events, the media sources employed by ITERATE were unable to determine with reasonable accuracy whether terrorist attackers were Palestinian in origin, or nationals of other Middle Eastern states. For incidents in which a Palestinian terrorist organization is linked to an attack, but the nationality of the terrorists who took part in the attack cannot be firmly established, ITERATE utilizes an aggregate identity category, Palestinian / Arab.<sup>180</sup> The downside to this approach is a potentially inflated estimate of terrorist recruits flowing from the Palestinian territories. Although I allocate these attacks to the Palestinian territories, as a robustness check, I also estimate all models without these events.

Third, for some incidents, ITERATE identifies a terrorist attacker as a national of a politically salient subnational area, such as Northern Ireland and Chechnya, or an unrecognized political entity, such as Kurdistan.<sup>181</sup> Because administrative statistics and country-year level fragility metrics are unavailable for these territories, I filter and recode attacks related to these territories. Kurdistan is the largest and most significant unrecognized political entity. Because it stretches across peripheral regions of several countries, I assign transnational attacks by Kurdish terrorists to Iran, Iraq, Syria, and Turkey, on a population-weighted basis derived from the percentage of ethnic Kurds in each country.<sup>182</sup> Contested subnational areas, such as Northern Ireland and Chechnya, are treated differently. The majority of terrorist attackers emanating from these areas carry out attacks within the contested territory; these attacks are effectively treated as domestic and are removed from the dataset during the first-stage filtering. However, some attacks are transnational: for instance, attacks carried out by the Irish Republican Army in West Germany.

In the main empirical analysis, I assign attacks originating in contested subnational areas to the “parent” country. However in many cases, governance within contested

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<sup>179</sup> See Konstantinos Drakos and Andreas Gofas, “The Devil You Know But Are Afraid to Face: Underreporting Bias and Its Distorting Effects on the Study of Terrorism”, *Journal of Conflict Resolution*, Vol. 50, No. 5, 2006

<sup>180</sup> ITERATE has since adopted a new code for the Gaza strip, but the broader Palestinian / Arab coding covers nearly all incidents in the time series under analysis

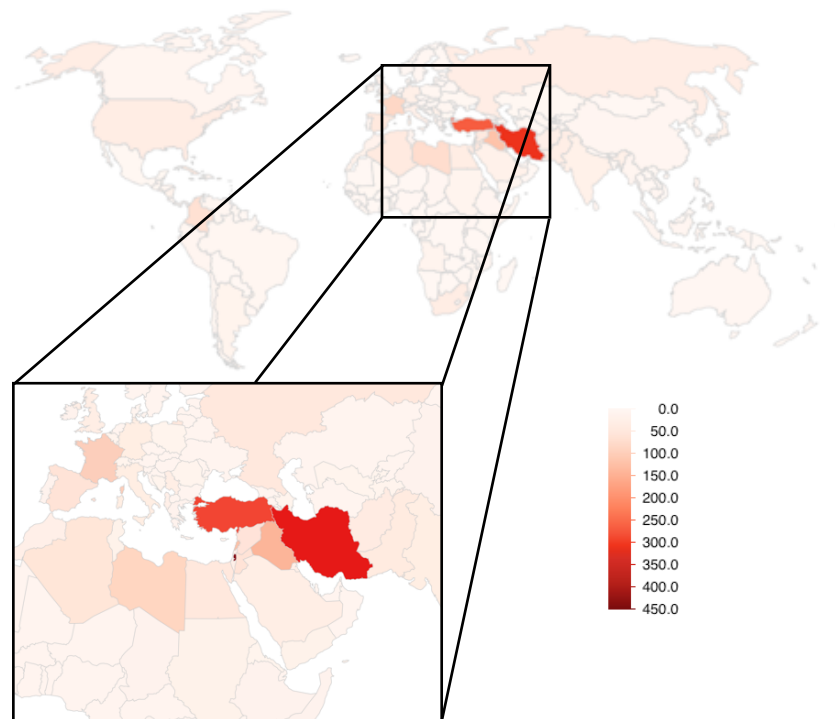
<sup>181</sup> Personal correspondence with ITERATE project researchers

<sup>182</sup> From 1980 to 2006, ITERATE identifies a total 163 transnational attacks conducted by Kurdish terrorists. These are allocated as follows: 102 to Turkey, 33 to Iran, 25 to Iraq, and 3 to Syria. Over half the attacks (83 in total) by Kurdish terrorists took place in (West) Germany. Only 21 attacks (or 13 percent) took place within Turkey, and only 18 attacks (roughly 11 percent) took place within Iraq. Treating attacks taking place in Turkey and Iraq as cases of domestic terrorism and therefore excluding them from the analysis makes no substantive impact upon the model estimates reported below.

subnational regions frequently differs significantly from patterns of governance in other parts of the “parent” country. For instance, human rights abuses and restrictions on civil rights in Chechnya significantly outstrip those in other areas of Russia. For these regions, utilizing national-level metrics may present misleading picture. As an additional robustness check, I estimate the full series of models using an alternate dataset that excludes these incidents. I find minor differences in coefficient estimates, but no changes in sign or statistical significance across any of the models. These results are presented in appendix C.

The original ITERATE dataset covering 1980-2006 includes 8,934 discrete events. 3,513 incidents were dropped because they were purely domestic attacks. Of the remaining 5,421 events, 2,937 were removed because there was no information available on the nationality of the attacker. Finally, many incidents included attackers for multiple countries. Because the dependent variable of interest is terrorist *recruitment*, I code each national participating in an attack as a separate incident; in effect, this shifts the unit of analysis from attack to attacker. Together, these steps yield a total of 2,420 international terrorist attackers, which are aggregated into country year counts. This annual count comprises the dependent variable in the analysis.<sup>183</sup> Figure 1 shows the global distribution

Figure 2.1: Distribution of transnational terrorist attackers, 1980-2006



<sup>183</sup> Although ITERATE contains information on deaths and property damage caused in many attacks, these data are not available for all incidents: some of the news outlets that are used to compile the dataset report such information, and some do not. For this reason, and in order to avoid potential bias stemming from media suppression, I utilize a straightforward event count as the dependent variable.

In the 25 year span under analysis, the Palestinian Territories produced the largest volume of transnational terrorist recruits, 424 in total. Iran was a distant second place, with slightly over 300. A substantial number of terrorists emerged from wealthy, democratic countries: 84 from France, 49 from Spain, over 30 from the United States. Stable authoritarian and semi-authoritarian regimes, including Algeria, Syria, Jordan, Russia, and Saudi Arabia, each exported several dozens of terrorist attackers. Also notable is the relative absence of terrorist recruits from sub-Saharan Africa, a region home to endemically-fragile states. We turn to this issue— the definition and global distribution of state fragility— next.

### Independent variables

In order to measure state fragility, I utilize a novel country risk index constructed by the Canadian Indicators for Foreign Policy project (CIFP).<sup>184</sup>

The CIFP index and its subcomponents ranges from a low of 1, reflecting the lowest fragility among states within a given year, and a high of 9. States are coded as strong if their score is below 3.5; capable if their score falls between 3.5 and 4.4, average if their scores lie between 4.5 and 5.4, fragile if between 5.5 and 6.4, and failed if above 6.5. This matches the guidance of the CIFP's designers, who note that scores between 1-3 indicate strong performance relative to the global average, high scores between 7-9 indicate poor performance, with scores between 4 and 6 converging around the global average.<sup>185</sup>

In order to estimate the relationship between varying degrees of state fragility and terrorist recruitment, I construct a series of dummy variables using the composite fragility index and its underlying metrics for authority, legitimacy, and capacity. The dummy variables allow for a more precise test of the conventional wisdom. What is in question is not whether a decline from, for instance, an extremely high level of capacity to a high level of capacity is associated with an increase in terrorist recruitment, but whether states that are within specific ranges of capacity— fragile and failed— generate more terrorist attacks than stronger polities. In all statistical models I use the middle category of states clustering around the global mean as a reference group to which strong, capable, fragile, and failed states are compared.<sup>186</sup>

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<sup>184</sup> The index was designed by David Carment, Stewart Prest, and Yiagadeesen Samy. See Carment, Prest and Samy, *Security, Development, and the Fragile State: Bridging the Gap between Theory and Policy*, 2009

<sup>185</sup> This approach also matches— and is slightly more conservative than— a coding for failure used by Carment, Prest and Samy in their own empirical analyses of the relationship between long-run fragility and discrete episodes of war, coups, and state collapse, in which they code country years with a score of 6 and above as instances of state failure. *ibid.*, pp. 110-111

<sup>186</sup> I use the mean category as the reference group for several reasons. First, the CIFP index was designed to measure relative country risk, operationalized as fragility relative to the global mean. Using the mean category as the reference group in the empirical analysis is consistent with the construction of the underlying index. Second, across nearly all variables, the average category contains the largest number of cases, and so estimates of its characteristics will be more precise than estimates of smaller groups located in the thin tails of the distribution. See Melissa A. Hardy, *Regression with Dummy Variables*, Sage University Series: Quantitative Applications in the Social Sciences, 1993

## Empirical strategy

I estimate the relationship between fragile states and transnational terrorism with several batteries of negative binomial regressions. Several key features of the data strongly suggest the use of a negative binomial estimator over ordinary least squares regression.

The dependent variable, terrorist recruitment, is measured as an count of events: the number of transnational attacks committed by recruits from a given country in a given year. Count data can only take on a value of zero or some positive integer. In a cross-national time-series analysis, the count is produced by aggregating events into sum totals within given time periods, in this case, country years. This kind of data is not truly continuous and interval-level, and modeling it with linear regression techniques can produce biased and inefficient estimates.<sup>187</sup>

The workhorse model for event count analysis, the poisson, assumes that the underlying data are normally distributed, and that the events are also randomly distributed, with no dependence between the events that comprise the count.<sup>188</sup> The first assumption doesn't hold. Terrorist attacks are not normally distributed, but instead highly over-dispersed across the country years in the panel. The standard deviation of attacks is 2.564, and mean is 0.477; the variance of 6.57 is over 13 times greater than the mean. The second assumption is also problematic, as there is good reason to expect strong patterns of dependence between attacks.<sup>189</sup> In some instances, the occurrence of a terrorist attack may make subsequent attacks more likely, potentially via demonstration or learning effects. On the other hand, security measures taken after an attack may either make subsequent attacks less likely to succeed (and to be recorded in datasets such as ITERATE). Or the *anticipation* of more stringent security measures may deter terrorists from launching attacks. Although impossible to directly observe in aggregated cross-national data, both forms of dependence are likely to be present. The negative binomial estimator relaxes the poisson's strict assumptions, and produce unbiased estimates of standard errors with over-dispersed and dependent data. All models use a random effects estimator.<sup>190</sup>

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<sup>187</sup> Gary King "Event Count Models for International Relations: Generalizations and Applications", *International Studies Quarterly*, Vol. 33, No. 2, 1989

<sup>188</sup> King, *ibid.*, p. 129

<sup>189</sup> See Manus I. Midlarsky, "Analyzing Diffusion and Contagion Effects: The Urban Disorders of the 1960s", *American Political Science Review*, Vol. 72, No. 3, 1978; Manus I. Midlarsky, Martha Crenshaw, and Fumihiko Yoshida "Why Violence Spreads: the Contagion of International Terrorism", *International Studies Quarterly*, Vol. 24, No. 2, 1980

<sup>190</sup> Several prior studies, including Krisztina Kis-Katos, Helge Liebert, Günther G. Schulze "On the Origin of Domestic and International Terrorism", *European Journal of Political Economy*, Vol. 27, 2011, instead utilize fixed-effects models. This approach would offer the significant advantage of "wash-outing" unobserved variation across countries in the sample by calculating separate regression lines for each; in essence, strictly measuring the impact of variation in state fragility for each country on the level of terrorist recruitment over time, rather than measuring the impact of variation fragility *between* countries on terrorist activity. However, regression lines cannot be computed for countries which do not export any terrorists, in this case, 80 out of the 188 states in the dataset. Dropping these countries from the analysis would ask a subtly different question: of the states that *do* export terrorists, do declines in state capacity correlate with increases in the scale of recruitment?

As a first-cut robustness check, I estimate the models with several different coding schemes for the dependent variable. As I discussed above, the ITERATE project addresses the difficulties in identifying the national origin of some Middle Eastern terrorists by utilizing an aggregate Palestinian/Arab category where a specific country of origin cannot be definitively determined. While reasonable, this approach may significantly overestimate the number of Palestinian terrorists, and so I estimate each model both with and without the West Bank / Gaza data.

As a second robustness check, for the core empirical analysis I estimate the same negative binomial models while using a series of lags and period averages for the independent variables. This approach addresses several potential concerns. First, there is no reason to suspect that severe state fragility or failure at time  $t$  is likely to produce a recruit within the same year; it is possible, even probable, that fragility's effects take longer time to effect the strategic choices of terrorist organizations and potential recruits. In short, a period of fragility at  $t$  could yield an attack anywhere from  $t+1...t+n$ . It is also possible that various dimensions of fragility might operate on different time scales: degraded authority and legitimacy might quickly produce recruits, while weak social services might produce or amplify transnational terrorism over longer periods of time. To account for these possibilities, I present a model with a single year lag, and additionally computed lags out to ten years, with no change in substantive results. Secondly, it is possible that long-run periods of state fragility or failure are necessary to generate recruits; brief dips in state capacity may not be sufficient to produce an effect. I address this potential concern by estimating the relationship between averaged fragility indicators and summed attacks over five year periods.<sup>191</sup>

The composite time-series cross-sectional dataset covers 188 countries across 27 years, from 1980 to 2006; the panel is strongly but not perfectly balanced, and consists of a total of 5,057 country-years. In addition to the measures of state fragility and terrorist recruitment, I employ several statistical controls drawn from the World Bank's World Development Indicators, population and area in square kilometers, which are logged to control for scale effects.

## 5. Results

I begin with a simple model which estimates the relationship between composite state fragility levels and the production of transnational terrorist attackers. This model scans for a preliminary smoking gun, by testing if fragile and failed states are associated with the production of higher levels of attackers than strong, average, and capable states. Table 2.1 presents the results, which are expressed in incident-rate ratios for ease of interpretation. Incident-rate ratios capture *relative differences* in the frequency of events. A score of 1.0

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<sup>191</sup> As a third robustness check I employed an alternative coding scheme for the explanatory variables, with lower thresholds for fragility. The alternate coding specification identifies strong states as those with a CIFP score of less than or equal to three, average states as those between 3 and 6, and fragile states as those with a CIFP score of greater than six. The results support those presented in the main analysis.



indicates a frequency identical to that of the baseline; 1.05 a 5% greater frequency; 0.05 a 95% lesser frequency, and so on.

Table 2.1 shows that the basic conventional wisdom does not hold. While strong and capable states are significantly less likely to be the source of transnational attacks than average states, neither fragile or failed polities are more likely to produce transnational terrorists. All else equal, strong states produce almost 85 percent fewer terrorist attacks than average states, while capable states produce nearly 65 percent fewer attacks. There is no statistically significant difference between fragile and failed states and those clustering around the global average. As expected, the variable controlling for population size is strongly and positively associated with transnational attacks: all else equal, larger countries produce more terrorist recruits. Both results are stable, both substantively and in terms of statistical significance, whether or not attacks identified as emanating from the Palestinian territories are included in the analysis.

*Table 2.1: Negative binomial regression of state fragility on the incidence of transnational attacks*

	1	2
	Full data	Ex. West Bank / Gaza
Strong	0.137*** (0.054)	0.150*** (0.061)
Capable	0.366** (0.117)	0.378** (0.125)
Fragile	1.011 (0.363)	0.716 (0.240)
Failed	0.914 (0.340)	0.614 (0.212)
Population	2.207*** (0.493)	2.095*** (0.424)
Area	0.833 (0.149)	0.947 (0.162)
Observations	5057	5040

The baseline (reference category) is average fragility. Coefficients displayed as incident-rate ratios. Standard errors, clustered on country, appear in parentheses. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

This preliminary (non)smoking gun is important, but gives little traction on the specific causal mechanisms identified in section 3. I next present a series of models which estimate the relationship between three analytically distinct sub-dimensions of state fragility– authority, legitimacy, and capacity– and the incidence of transnational terrorist attacks. Table 2.2 presents three models: a benchmark model; a model in which the

independent variables are lagged one year; and a model which regresses transnational attacks on the averaged fragility scores over a five year period. I estimate each model both with and without the West Bank / Gaza data.

I begin by testing the relationship between the corrosion of state authority and the incidence of transnational terrorist attacks. This test addresses the strongest mechanism embedded in the conventional wisdom: states with weak or failed systems of territorial control offer terrorist organizations safe spaces to operate, and find and train recruits. I also test an alternate theory, which suggests that states with weak, rather than failed, authority, are most attractive operational spaces for terrorist organizations. These propositions correspond to hypotheses 1a and 1b.

I find no evidence that the corrosion of state authority is associated with transnational terrorist recruitment. Across all of the model specifications, there is no statistically significant relationship between fragile or failed authority and transnational attacks. To the contrary, across the various models failed authority is consistently and negatively associated with transnational attacks; however, the relationship is only statistically significant in the benchmark model. This finding accords with what we know from Al Qaeda's failed attempts to build a beachhead in Somalia in the early 1990s, as the Somali national government effectively ceased to exist. In 1992, a trusted operative, Abu Hafs, was dispatched from Al Qaeda's base in Khartoum, in order to recruit fighters to launch a local front against the UN peacekeeping mission. However, his mission soon encountered the same challenges facing peacekeepers: insecurity, high operating costs, extortion, and an impenetrable local clan structure that frustrated efforts to recruit significant numbers of operatives;<sup>192</sup> al Qaeda abandoned the effort.

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<sup>192</sup> David Shinn, "Al Shabaab's Foreign Threat to Somalia", *Orbis*, Vol. 55, No. 2, 2011, pp. 204-205. See also "Al Qaeda's Misadventures in the Horn of Africa", Harmony Project, Combating Terrorism Center at West Point, p. 5

Table 2.2: Negative binomial regression of state authority, legitimacy, and capacity levels on number of transnational terrorist attackers

	<i>benchmark model</i>		<i>one year lag</i>		<i>five year periods</i>	
	1	2	3	4	5	6
	Full data	Ex. West Bank / Gaza	Full data	Ex. West Bank / Gaza	Full data	Ex. West Bank / Gaza
Strong authority	0.584 (0.206)	0.394* (0.171)	0.548+ (0.192)	0.361** (0.143)	0.699 (0.299)	0.436+ (0.215)
Strong legitimacy	0.714 (0.368)	1.034 (0.493)	0.666 (0.290)	0.963 (0.382)	0.293* (0.154)	0.472 (0.221)
Strong capacity	0.229** (0.128)	0.186** (0.097)	0.242** (0.132)	0.199** (0.100)	0.638 (0.415)	0.443 (0.278)
Capable authority	1.055 (0.351)	0.939 (0.326)	1.071 (0.357)	0.947 (0.329)	1.797 (0.714)	1.473 (0.569)
Capable legitimacy	0.603 (0.280)	0.769 (0.354)	0.645 (0.271)	0.803 (0.341)	0.491 (0.251)	0.656 (0.313)
Capable capacity	0.684 (0.282)	0.556 (0.215)	0.654 (0.230)	0.546+ (0.189)	0.838 (0.372)	0.607 (0.246)
Fragile authority	1.308 (0.321)	1.355 (0.362)	1.320 (0.333)	1.328 (0.373)	1.528 (0.480)	1.366 (0.439)
Fragile legitimacy	1.680 (0.619)	1.227 (0.427)	1.793 (0.695)	1.286 (0.468)	1.659 (0.611)	1.117 (0.385)
Fragile capacity	0.331*** (0.105)	0.299*** (0.093)	0.330*** (0.105)	0.294*** (0.092)	0.297** (0.118)	0.249*** (0.096)
Failed authority	0.504+ (0.189)	0.756 (0.261)	0.583 (0.228)	0.922 (0.325)	0.604 (0.262)	1.045 (0.441)
Failed legitimacy	3.102* (1.567)	3.545* (1.778)	2.639+ (1.443)	3.013* (1.662)	2.431 (1.379)	2.885* (1.468)
Failed capacity	1.031 (0.813)	0.093*** (0.047)	0.876 (0.653)	0.102*** (0.053)	1.368 (1.133)	0.108*** (0.056)
Population	2.060*** (0.339)	1.814*** (0.278)	2.095*** (0.334)	1.844*** (0.266)	2.280*** (0.343)	1.954*** (0.280)
Area	0.811 (0.104)	0.920 (0.117)	0.795+ (0.102)	0.905 (0.114)	0.787* (0.094)	0.912 (0.103)
Observations	5,057	5,040	4,869	4,853	1,126	1,122

The baseline (reference category) is average. Coefficients displayed as incident-rate ratios. Standard errors, clustered on country, appear in parentheses. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

Hypothesis 1b, the argument that terrorist organizations prefer to operate and find recruits in states with weak rather than failed authority, also finds no compelling empirical support. The relationship between fragile authority and terrorist recruitment is positive, but is not statistically significant in any of the models. All else equal, states with strong authority produce fewer terrorist attackers than states with average authority. This relationship is particularly apparent when the West Bank and Gaza are excluded from the analysis; the estimation difference may result from the fact that over some periods of time, Israel exerted strong control over the Palestinian territories, which was contested with asymmetric violence, including terrorist attacks.

I now turn to institutional legitimacy. The conventional wisdom suggests that states with either fragile or failed legitimacy will be the source of more transnational terrorist attackers than legitimate polities. This is expressed as hypothesis 2a. I also examine an alternate argument, captured in hypothesis 2b, which suggests that weakly autocratic states, which might have lower capacity for surveillance and social control, will produce more attacks than strongly autocratic states.

Controlling for levels of state authority and capacity, failed legitimacy is strongly and significantly associated with the production of transnational terrorist attackers. The benchmark model estimates that states with failed legitimacy produce over 300% more terrorist attackers than states with average legitimacy. By contrast, the results provide no support for hypothesis 2b: while fragile legitimacy is positively correlated with transnational attacks, the impact is smaller than that of failed legitimacy, and is not statistically significant in any of the model specifications.

However, according to policymakers, the production of terrorist recruits is not driven simply by a lack of liberty, but by a combination of oppression and weak public authority. In an opinion piece in the *New York Times* published on the first anniversary of the September 11th attacks, former President George W. Bush argued that “poverty, corruption and repression are a toxic combination in many societies, leading to weak governments that are unable to enforce order or patrol their borders and are vulnerable to terrorist networks....”<sup>193</sup> In short, motive must combine with means in order to produce terrorist recruits. I formalized this argument in hypothesis 2c.

In order to test this hypothesis, I interact a new dummy variable which aggregates fragile and failed legitimacy with the dummy variables for each level of state authority. Dummy variables for capacity were included, along with the control variables. Table 2.3 presents the results. The interaction term capturing the mixture strong authority *and* fragile/failed legitimacy is strongly and positively significant. Strong, illegitimate states produce 18-fold more terrorist attackers than states with fragile or failed legitimacy and average authority. The results hold if data from West Bank / Gaza are removed from the analysis, although the coefficient estimate drops from 18 to 7 times more attackers— still a large increase over

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<sup>193</sup> George W. Bush, “Securing Freedom’s Triumph”, *the New York Times*, 11 September 2002. Retrieved at: <http://www.nytimes.com/2002/09/11/opinion/securing-freedom-s-triumph.html>

the baseline. *Critically, states with both failed legitimacy and weak territorial control are no more likely to generate terrorist attackers than average states.*

The notion that transnational terrorist organizations prefer to recruit in weakly authoritarian regimes carries an intuitive appeal: in such environments, terrorist groups can tap into a pool of disaffected potential recruits, while facing somewhat lower operational risks. However, the results I present above cut strongly against this claim. There is no statistically significant difference between the number of transnational terrorists 'exported' by states with fragile and average legitimacy, whereas across nearly all model specifications, states with failed legitimacy produce around 300 percent more recruits. The interaction between authority and legitimacy provides an even more direct test of this proposition, and the results are stark: States that strongly repress the rights of their citizens while maintaining effective territorial control are significant producers of transnational terrorist recruits. Conditions of "inefficient repression", modeled as a combination of simultaneously corroded legitimacy and authority, do not appear to spur transnational terrorism. Instead, the more or less linear relationship between legitimacy and terrorist recruitment lends support to the proposition that the supply of recruits is driven by anger and disaffection with the political system; that is, principally by motive rather than by opportunity.

Table 2.3: Negative binomial regression of state fragility levels on the number of transnational terrorist attackers: interactions between authority and legitimacy

	1	2
	Full data	Ex. West Bank / Gaza
Strong authority and fragile/failed legitimacy	18.125*** (10.718)	7.191** (5.122)
Capable authority and fragile/failed legitimacy	1.694 (0.875)	2.035 (1.134)
Fragile authority and fragile/failed legitimacy	1.256 (0.502)	1.492 (0.652)
Failed authority and fragile/failed legitimacy	0.854 (0.807)	1.640 (1.487)
Strong authority	0.250** (0.113)	0.259** (0.123)
Strong legitimacy	1.059 (0.531)	1.271 (0.595)
Strong capacity	0.271* (0.155)	0.211** (0.111)
Capable authority	0.764 (0.277)	0.719 (0.266)
Capable legitimacy	0.777 (0.383)	0.913 (0.437)
Capable capacity	0.690 (0.306)	0.582 (0.239)
Fragile authority	1.241 (0.324)	1.160 (0.298)
Fragile capacity	0.306*** (0.086)	0.290*** (0.078)
Fragile/failed legitimacy	1.392 (0.604)	1.071 (0.451)
Failed authority	0.999 (0.873)	0.841 (0.724)
Failed capacity	0.580 (0.367)	0.125*** (0.058)
Population	1.986*** (0.328)	1.786*** (0.275)
Area	0.820 (0.106)	0.929 (0.119)
Observations	5,057	5,040

The baseline (reference category) is average. Coefficients displayed as incident-rate ratios. Standard errors, clustered on country, appear in parentheses. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

Last, I estimate the relationship between capacity, or the state's ability to provide core public services and economic opportunity to its citizens, and the incidence of international terrorism, while controlling for both authority and legitimacy. It is possible that low capacity expands the pool of potential terrorist recruits, both by stoking grievances and reducing the opportunity costs to violence. This yields hypothesis 3.

To see the results of this analysis, we return to table 2.3. While weak state capacity to provide public services is a humanitarian and development challenge, it does not appear to amplify the threat of transnational terrorism. To the contrary, fragile capacity to produce public services is *negatively* associated with the production of terrorist recruits in all models, with most specifications reaching statistical significance. States with strong capacity are also estimated to produce fewer terrorist attackers than average states, as are states with failed capacity. However, the negative relationship between failed capacity and the production of terrorist recruits is only statistically significant when the Palestinian territories are excluded from the analysis. This result suggests that polities with failed public service capacity don't generate significant numbers of recruits to transnational terrorist organizations, but the very large number of terrorist recruits emanating from the Palestinian territories masks this relationship.

#### Extension: hurdle model

A number of scholars, notably Alan Krueger and James Piazza, have suggested the use of more complex econometric techniques capable of extracting information from the large number of non-events— years in which terrorist activity *did not occur*— in cross-national time-series terrorism data.<sup>194</sup> Standard models for count data assume that the same underlying causal process determines both whether an event happens at all, and how frequently it occurs. But this might not necessarily be the case. For instance, whether a given country produces transnational terrorists recruits *at all* might depend upon whether any transnational terrorist organizations have a local presence. The *number* of recruits the organization is capable of attracting might depend on a different set of factors, including the extent of political repression or poverty, which could increase the size (and decrease the cost) of the recruiting pool.

In order to examine this somewhat more complicated causal structure, I estimate several hurdle models.<sup>195</sup> The hurdle model consists of a two-stage estimation process. The first stage is a logistic regression, which estimates the probability that a country will shift from a zero to a positive count. The second stage of the model is a zero-truncated negative binomial count model, similar to the models employed in the main empirical analysis above. The key difference is that all zero observations are excluded from the analysis, and the

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<sup>194</sup> Krueger *What Makes a Terrorist?* *ibid.*, p. 76, fn 2; Piazza "Incubators of Terror", *ibid.*, p. 477-8, and fn. 11.

<sup>195</sup> In order to estimate these models, I utilize Joseph Hilbe's "HNBLOGIT: Stata module to estimate negative binomial-logit hurdle regression" Statistical Software Component S456401, Boston College Department of Economics, 2005

model estimates the impact of a set of predictors on the scale of the incident count.<sup>196</sup> In short, the first stage estimates the probability that any recruits will be produced, while the second estimates the number of recruits.

In this extension, I examine another testable proposition emanating from the causal logics outlined in section three. First, weak territorial control and surveillance may be necessary condition to move a given country from a zero to non-zero probability of generating terrorist recruits, by offering transnational terrorist organizations a base from which to recruit and operate. Other factors— particularly poverty— determine the depth and cost of the potential pool of recruits, and thus determine the number of operatives that terrorist organizations can feasibly recruit. I formalize these as two additional hypotheses, which can be considered extensions of  $H_{1a}$ , and  $H_3 + H_6$ , respectively.

*Hypothesis 4: States with fragile or failed authority will have a higher probability of producing any terrorists than states with average authority*

*Hypothesis 5: of the states that do generate terrorist recruits, those with fragile or failed capacity, will produce greater numbers of terrorist recruits than states with average legitimacy and capacity.*

I begin with hypothesis 4. The results are shown in columns 1 and 3 of Table 2.4, which present the logistic regression estimates. These estimates do not support the proposition that fragile or failed authority is the key factor that shifts states from a zero to non-zero probability of producing recruits. Instead, consistent with the results from the main empirical analysis, the most powerful predictor is compromised legitimacy. States with failed legitimacy are over 5 times as likely as states with average legitimacy to generate terrorist recruits; states with fragile legitimacy are nearly twice as likely to do so. On the other hand, states with strong authority and capacity are significantly less likely to produce terrorist recruits.

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<sup>196</sup> Christopher W. J. Zorn, "An Analytic and Empirical Examination of Zero-Inflated and Hurdle Poisson Specifications", *Sociological Methods and Research*, Vol. 26, No. 3, 1998. See also A. Colin Cameron and Pravin K. Trivedi, *Regression Analysis of Count Data*, 1998, John Mullahy "Specification and Testing of Some Modified Count Data Models" *Journal of Econometrics*, Vol. 33, 1986



Table 2.4: Hurdle model of state fragility levels on the number of transnational terrorist attackers

	1	2	3	4
	Full data	Full data	Ex. West Bank / Gaza	Ex. West Bank / Gaza
	Logit	Negative binomial	Logit	Negative binomial
Strong authority	0.503+ (0.191)	0.498+ (0.184)	0.467* (0.180)	0.383* (0.187)
Strong legitimacy	1.572 (0.606)	1.475 (0.905)	1.728 (0.644)	2.226 (1.224)
Strong capacity	0.445+ (0.189)	0.049*** (0.034)	0.423* (0.178)	0.028*** (0.019)
Capable authority	0.971 (0.290)	0.748 (0.204)	0.955 (0.290)	0.751 (0.210)
Capable legitimacy	1.026 (0.318)	0.791 (0.441)	1.074 (0.336)	1.143 (0.544)
Capable capacity	0.864 (0.239)	0.377+ (0.195)	0.842 (0.234)	0.247** (0.116)
Fragile authority	1.243 (0.312)	1.263 (0.426)	1.249 (0.320)	1.296 (0.465)
Fragile legitimacy	1.948* (0.532)	1.140 (0.480)	1.855* (0.509)	0.789 (0.315)
Fragile capacity	0.396*** (0.109)	0.369* (0.153)	0.388*** (0.108)	0.327** (0.125)
Failed authority	0.898 (0.343)	0.314* (0.144)	1.053 (0.375)	0.445+ (0.216)
Failed legitimacy	5.517*** (2.765)	1.002 (0.510)	5.056** (2.615)	1.098 (0.579)
Failed capacity	0.356+ (0.203)	1.426 (1.257)	0.216** (0.106)	0.028*** (0.020)
Population	1.588*** (0.164)	1.125 (0.194)	1.540*** (0.153)	1.014 (0.155)
Area	0.962 (0.091)	0.911 (0.115)	1.005 (0.088)	1.078 (0.130)
Observations	5,057	5,057	5,040	5,040

The baseline (reference category) is average. Coefficients displayed as incident-rate ratios. Standard errors, clustered on country, appear in parentheses. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

What about the states that *do* generate terrorist attackers? Does broken public service provision determine the scale of terrorist recruitment? I now turn to columns 2 and 4, which present the estimates from the second-stage, zero-truncated negative binomial models. The estimates provide no support for hypothesis 5. States with fragile or failed capacity to produce public services produce *fewer* transnational terrorist recruits than states with average capacity. And there is no statistically significant difference between states with fragile and failed legitimacy, and those with average legitimacy. Lastly, consistent with the main empirical analysis, states with failed authority produce fewer attackers than states with average or even strong authority.

The results from the hurdle models support and clarify the findings I present in the main empirical analysis. The key factor which determines the production of transnational terrorist recruits is compromised domestic legitimacy. The corrosion of state authority and capacity render states less likely to produce terrorist recruits; and when they *do* produce recruits, to produce fewer.

## Conclusions

In 2005, the New York Times editorial page published a searing editorial, which argued that broken states challenged “not only our common humanity, but global security as well.” The *Times* pointed in particular to the “lethal combination of corrupt or destructive leaders, porous and unmonitored borders and rootless or hopeless young men (that turn failed states into) incubators of international terrorism.”<sup>197</sup> The belief that fragile and failing states serve as a potent generator of transnational terrorism has long since passed into conventional wisdom among policymakers, and is accepted across the political spectrum in the United States, within international organizations, and among America’s allies abroad.<sup>198</sup>

The results I present in this chapter—summarized in table 2.5, below—suggest otherwise. Fragile states, as defined and measured by policymakers, do not incubate terrorism or “breed” transnational terrorist recruits. Severe breakdowns in state authority and capacity to provide public goods are instead negatively related to the production of terrorist recruits. And while the combination of weak state authority and illegitimate rule may indeed be lethal for citizens who must suffer under oppressive and insecure conditions, these factors do not appear to drive terrorist recruitment. Instead, I find that the more prosaic cocktail of illegitimate governance and strong coercive capacity is a potent generator of recruits to transnational terrorist organizations.

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<sup>197</sup> “Thousands Died in Africa Yesterday”, *the New York Times*, 27 February 2005, retrieved at: <http://www.nytimes.com/2005/02/27/opinion/27sun1.html>

<sup>198</sup> See, for instance: UK Department for International Development (DFID) “Why We Need to Work More Effectively in Fragile States”, 2005, p. 10, “Executive Summary” *Australian Aid: Promoting Growth and Stability— a White Paper on the Australian Government’s Overseas Aid Program*, 2006, retrieved at: <http://www.aisaid.gov.au/publications/whitepaper/execsum.htm>

There is no evidence that fragile or failed authority is a critical factor enabling terrorist recruitment—as the test of hypothesis 4 shows, fragile and failed authority does not make a given state more likely to move from producing zero to some positive count of terrorist recruits. This in turn suggests that transnational terrorist organizations do not preferentially locate themselves in the most institutionally fragile environments.

A more limited analysis, focusing on the subset of countries that have produced terrorist recruits, also shows no support for the conventional wisdom. Even if we assume that recruitment is abetted by some other, latent or unmeasured factor, the degree to which service provision has corroded in a given state does not influence the extent to which it generates terrorist recruits. In short, state failure is not a necessary condition for transnational terrorist recruitment, nor does it seem to influence the scale of “production.”

*Table 2.5: Summary of findings*

Hypotheses	Finding	Strength of evidence
Hypothesis 1a: States with fragile and failed authority will produce more transnational attackers than states with average to strong authority	Rejected	Strong
Hypothesis 1b: States with fragile authority will produce more terrorist attackers than states with failed authority	Rejected	Weak
Hypothesis 2a: States with fragile or failed legitimacy will produce more transnational terrorist attackers than states with legitimate institutions	Supported	Strong
Hypothesis 2b: Weakly autocratic states will generate more terrorist attackers than strongly autocratic states	Rejected	Strong
Hypothesis 2c: States with fragile or failed legitimacy <i>and</i> fragile or failed authority will be associated with more terrorist attackers than illegitimate states with higher levels of authority	Rejected	Strong
Hypothesis 3: States with fragile or failed capacity for public goods provision will be associated with higher levels of transnational attacks than states with average capacity	Rejected	Strong
Hypothesis 4: States with fragile or failed authority will have a higher probability of producing <i>any</i> terrorists than states with average authority	Rejected	Strong
Hypothesis 5: Of the states that <i>do</i> generate terrorist recruits, those with fragile or failed legitimacy, or fragile or failed capacity, will produce greater numbers of terrorist recruits than states with average legitimacy and capacity.	Rejected	Moderate

These results carry several implications for policymakers. First, while successive U.S. Presidential administrations have aligned counterterrorism policy towards detecting and attacking terrorist networks operating in failed states, from Yemen to Somalia, efforts to support transitional democracies and to undercut powerful authoritarian states may yield greater reductions in the flow of recruits to transnational terrorist organizations. Second, with the sole (albeit important) exception of the Palestinian territories, there is no detectable link between the collapse of public service provision, and the production of terrorist recruits. This suggests that while supporting social services and poverty alleviation

efforts may yield security benefits in the unique circumstances of the Palestinian territories, elsewhere weak social service provision and poverty remain a humanitarian and moral concern rather than a global security threat.

This analysis presents a first step in testing the relationship between the various dimensions that comprise state fragility and transnational terrorism. Particularly given the large burden of terrorism emanating from contested subnational areas– Northern Ireland, Chechnya, Kurdistan, among others– the next stage should move below the national level, to examine variation in the quality of sub-national territorial governance and terrorist activity. International development agencies are only beginning to collect subnational data, and (somewhat predictably) subnational data are least likely to be available in fragile states with compromised security and weak institutional capacity for systematic data collection. Nonetheless, as we acquire the ability to see below the national level of the state, we will be better equipped to understand dynamics linked to sub-state fragility.

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## Power, Poverty and Pathogens: Do Fragile States Threaten Global Public Health?

*The security of the most affluent State can be held hostage to the ability of the poorest State to contain an emerging disease*<sup>199</sup>  
United Nations High-Level Panel on Threats, Challenges, and Change

*...the more we drive infections to the margins of human experience, the more we clear a path for possible catastrophic infection. We'll never escape the limits of the ecosystem.*<sup>200</sup>  
William H. McNeill

### Chapter Abstract

*Failing states—countries in which governing institutions have corroded or collapsed—are widely thought to pose a threat to global public health by harboring, incubating, and exporting dangerous pathogens with the potential to spark pandemic outbreaks. The emergence of a few luridly pathogenic agents in broken states, such as Ebola in the Democratic Republic of the Congo, give this assessment an intuitive plausibility. But deadly diseases have emerged in high-functioning and middle-income states as well: SARS in China, Nipah in Malaysia, Hantavirus in the United States. Such anecdotal evidence provides no adequate guidance. This chapter presents the first empirical analysis of the link between state fragility and pandemic outbreak risk, focusing particular attention on the factors that determine the emergence of zoonotic viral agents. Contrary to the conventional wisdom, fragile states are significantly less likely than higher capacity states to foster emerging viruses, controlling for disease surveillance capacity and a range of covariates linked to infectious disease dynamics. Instead, factors linked to the human/animal interface, ultra-high density urbanization, and acute population displacement, are most closely associated with the emergence of viral threats to human health.*

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<sup>199</sup> The Secretary-General's High-Level Panel on Threats, Challenges and Change, *A More Secure World: Our Shared Responsibility*, United Nations, 2004, p. 14

<sup>200</sup> William H. McNeill, "Patterns of Disease Emergence in History", in Stephen S. Morse, ed., *Emerging Viruses*, p. 36

## 1. Introduction

In the early Fall of 1967, several dozen workers at the Behringwerke AG pharmaceutical plant in Marburg, Germany fell ill. Although their symptoms initially presented as influenza, the resemblance soon ended as the disease rapidly ran its course. Patients began to suffer from hemophilia-like symptoms, followed by severe pain, massive tissue death, and finally, uncontrolled hemorrhaging. The horrific symptoms of the disease, and the speed with which it spread to embattled health care workers treating the patients, attracted global attention. The pathogen, dubbed Marburg Hemorrhagic Fever, was eventually tracked to shipments of wild monkeys imported from Uganda.<sup>201</sup>

The Marburg outbreak took place during a period of unprecedented optimism regarding humanity's ability to combat infectious diseases. The successful mass production of penicillin in the early 1940s, along with rapid advances in vaccine and pesticide technologies, fanned optimism that for the first time in human history infectious diseases might be contained and conquered. This view was held not just by techno-utopians, but at the highest levels of policy: in 1945, at the end of the Second World War, United States Secretary of State George Marshall argued that humanity was now able to eradicate diseases from the earth.<sup>202</sup> During the post-war period disease eradication became a pre-eminent goal, particularly in developed countries, as scientists working within major foundations and the World Health Organization conceived and launched efforts to eliminate Malaria and smallpox.

The glow of the early antibacterial age remained for several decades. In the late 1960s, U.S. Surgeon-General William Stewart reportedly argued that it was "time to close the book on infectious diseases, and declare the war against pestilence won."<sup>203</sup> Despite the ominous early signal from the Marburg outbreak, epidemiological optimism continued to hold sway through the 1970s. In 1972, Burnet and White projected that

the most likely forecast about the future of infectious disease is that it will be very dull. There may be some wholly unexpected emergence of a new and dangerous infectious disease, but nothing of the sort has marked the past fifty years. *There have been isolated outbreaks of fatal infections derived from exotic animals... (as in the case of ) Marburg virus...*

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<sup>201</sup> For a detailed and vivid account of the Marburg case, see Laurie Garrett, *The Coming Plague: Newly Emerging Diseases in a World Out of Balance*, 1994

<sup>202</sup> Frank Snowden, "Emerging and reemerging diseases: a historical perspective" *Immunological Reviews*, Vol. 225, 2008.

<sup>203</sup> Some debate exists over whether Stewart's famously mocked quote can be verified (see Brad Spellberg, "Dr. William H. Stewart: Mistaken or Maligned?", *Clinical Infectious Diseases*, Vol. 47, No. 2, 2008). However in 1951, the immunologist Sir Frank MacFarlane Burnet (who would go on to win a Nobel prize in 1960), wrote that "if one looks around the medical scene in North America or Australia, the most important current change he sees is the rapidly diminishing importance of infectious diseases. The fever hospitals are vanishing or being turned to other uses. With full use of the knowledge we already possess, the effective control of every important infectious disease, with the one outstanding exception of poliomyelitis, is possible." See Gerald B. Pier, "On the Greatly Exaggerated Reports of the Death of Infectious Diseases" *Clinical Infectious Diseases*, Vol. 47, No. 8, 2008

*similar episodes will doubtless occur in the future but they will presumably be safely contained.*<sup>204</sup>

Weiss and McMichael observe that the epidemiological optimists were in one important sense correct: the proportion of deaths worldwide from infectious disease in developed and middle-income countries has dropped over the course of the 20th century.<sup>205</sup> But the dynamics of infectious disease have been anything but dull, and optimism regarding humanity's ability to rapidly exert control over novel infectious diseases has now given way to deep unease.

Communicable diseases still account for around a quarter of all deaths worldwide, and in low-income countries infectious diseases, including HIV, are the biggest killers.<sup>206</sup> Moreover, in the decades since the Marburg infections, a steady stream of new, virulent microbial agents—HIV, ebola hemorrhagic fever, SARS coronavirus, various strains of highly pathogenic influenza—have steadily emerged.<sup>207</sup> Many novel viral agents have stubbornly resisted efforts to create workable vaccines, and the human costs have been high.<sup>208</sup> HIV has caused the deaths of over 36 million people worldwide,<sup>209</sup> and destabilized social structures and governing institutions across sub-Saharan Africa.<sup>210</sup> The global disruptions created by outbreaks of fast-moving novel pathogens such as SARS and H1N1 influenza have demonstrated the potential for infectious disease to wreak havoc in an era of global integration.

Little wonder that global health, traditionally conceived within international relations as “low politics”, is now a high priority item for policymakers. The U.S. National Intelligence Council warns that “new and reemerging diseases...will endanger US citizens at home and abroad”<sup>211</sup>, while the 2010 U.S. National Security Strategy notes that “pandemic disease threaten(s) the security of regions and the health and safety of the American people... an epidemic that begins in a single community can quickly evolve into a multinational health crisis that causes millions to suffer.”<sup>212</sup> The United Nations High Level Panel on Threats,

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<sup>204</sup> Frank M. Burnet and David White, *Natural History of Infectious Disease*, Cambridge University Press, 1972, p. 263 (emphasis added)

<sup>205</sup> Robin A Weiss and Anthony J. McMichael, “Social and Environmental Risk Factors in the Emergence of Infectious Diseases”, *Nature Medicine*, (supplement) Vol. 10, No. 12, pp. S70-71

<sup>206</sup> World Health Organization, “The Top Ten Causes of Death”, 2013 retrieved at: <http://who.int/mediacentre/factsheets/fs310/en/index2.html> and <http://who.int/mediacentre/factsheets/fs310/en/index1.html>

<sup>207</sup> Although the overall secular trend is towards lower mortality from infectious diseases in the developed world, the emergence of new diseases can introduce significant shocks. In the United States, for instance, deaths from infectious disease rose 58 percent from 1980 to 1992 (tracking relatively tightly with the emergence of the AIDS pandemic). See George J. Armelagos “The Viral Superhighway”, *The Sciences*, January/February 1998, p. 24

<sup>208</sup> U.S. National Intelligence Council, 2000, *ibid.*, p. 5

<sup>209</sup> According to the World Health Organization. If anything, this estimate is likely to be low. See World Health Organization, “HIV/AIDS Fact sheet N°360”, June 2013, retrieved at: <http://www.who.int/mediacentre/factsheets/fs360/en/>

<sup>210</sup> Mark Schneider and Michael Moodie, “The Destabilizing Impacts of HIV/AIDS” The Center for Strategic and International Studies, May 2002

<sup>211</sup> U.S. National Intelligence Council, 2000, *ibid.*

<sup>212</sup> The White House, *National Security Strategy of the United States*, 2010, p. 49

Challenges, and Change, tasked with defining an agenda for multilateral cooperation around global hazards in the 21st century, identified infectious disease as one of the greatest threats facing the globe.<sup>213</sup> In short: infectious disease has become part of the international security agenda for the new millennium.<sup>214</sup>

Scientists and policymakers have devoted considerable attention to identifying the sources and potential vectors for pandemic disease outbreaks. Increasingly, they have focused on the potential threat that fragile states may pose to global public health, by incubating and potentially exporting infectious diseases, particularly novel, virulent pathogens for which no cures exist.

Concerns regarding infectious disease outbreaks in fragile states were once primarily humanitarian, centering on the risk that the poorest and weakest states would become isolated from the international community by a “pathogenic wall”, interdicting travel and trade and deepening poverty for people trapped in already desperate circumstances.<sup>215</sup> Anxieties today are considerably wider, and center not upon the risks of isolation, but on the potential for epidemics to rapidly metastasize and spread across the globe. As one commentator notes, “hidden repositories of disease may occur in any country, but fragile states and ungoverned spaces... represent an ‘ideal home’ for any future viral mutation and propagation.”<sup>216</sup> Indeed, crumbling states are thought to be more likely to be sites for new diseases to emerge, and to subsequently “export” pathogens.<sup>217</sup> And many novel pathogens that have emerged in recent decades have come from developing countries.<sup>218</sup> The 2010 United States National Security Strategy, accordingly notes that the U.S. government “seek(s) to mitigate...the threat of emergent and reemergent disease in poorly governed states.”<sup>219</sup>

Do failing states—and the populations within them—pose a risk to global public health? The exact scope of that threat is unclear, and a glance at the anecdotal evidence reveals a mixed picture. There is little question that populations in the fragile states bear the brunt of the global burden of disease. Half of all infant and under-five deaths worldwide occur in

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<sup>213</sup> High-Level Panel on Threats, Challenges and Change, *ibid.*, pp. 9,

<sup>214</sup> Stefan Elbe “Our epidemiological footprint: The circulation of avian flu, SARS, and HIV/AIDS in the world economy” *Review of International Political Economy*, 2008, pp. 116-117; Harley Feldbaum, “U.S. Global Health and National Security Policy,” *Center for Strategic and International Studies Global Health Policy Center Report*, 2009., pp. 1-3

<sup>215</sup> Robert Kaplan, “The Coming Anarchy”, *The Atlantic*, February 1994, retrieved at: <http://www.theatlantic.com/magazine/archive/1994/02/the-coming-anarchy/304670>

<sup>216</sup> Frederick M. Burkle Jr., “Pandemics: State Fragility’s Most Telling Gap?”, in Patrick M. Cronin, ed., *Global Strategic Assessment 2009: America’s Security Role in a Changing World*, Institute for National Strategic Studies, U.S. National Defense University, 2009, p. 106. See also: Commission on Weak States and U.S. National Security, *On the Brink: Weak States and U.S. National Security*, pp. 1, 17, 24;

<sup>217</sup> Marla Haimes, et al, *Breaking the Failed State Cycle*, RAND Corporation, pp. 1, 6; U.K. Department for International Development (DFID), *Why We Need to Work More Effectively in Fragile States*, p. 5

<sup>218</sup> Stewart Patrick, ““Failed” States and Global Security: Empirical Questions and Policy Dilemmas” *International Studies Review* Vol. 9 No. 4, 2007, p. 656

<sup>219</sup> The White House, National Security Strategy of the United States of America, 2010 p. 49



fragile states,<sup>220</sup> along with a third of maternal deaths;<sup>221</sup> One third of people living in fragile states are malnourished; even more lack access to clean water.<sup>222</sup> A cluster of endemically unstable, weak states in Central and West Africa have been the site of multiple outbreaks of deadly novel viruses, including multiple strains of hemorrhagic fever, monkeypox, and HIV. These states also contain animal populations that are known to be reservoirs for virulent pathogens, and considered probable sources of new viral threats.<sup>223</sup> But just as novel diseases have come out of tropical Africa, deadly pathogens such as SARS and hantavirus have also emerged in wealthy, high capacity states (China, the United States) that are tightly integrated in global travel and trade networks. Anecdotal evidence, in short, is not a sufficient guide.

This chapter presents an empirical analysis of the sources of global pandemic disease risk, focusing on the emergence of zoonotic viruses, a class of pathogens widely regarded as posing a particularly severe threat. It presents a conceptual framework rooted in epidemiological theory, and assesses the impact of state fragility, as well as a range of other social, ecological, and political factors associated with disease dynamics, on viral emergence. The core finding of the research is that fragile states are systematically *less* likely to be sites for disease emergence than higher capacity states, even when controlling for disease surveillance capacity. This is not to suggest that fragile states pose no risk of fostering and spreading emerging diseases, but instead that the risk posed by state fragility has been greatly over-stated based on the data to hand. There is evidence that a second-order impact of violence and insecurity, internal population displacement, significantly increases the odds of disease emergence. However, the strongest predictors of disease emergence are related to patterns of human/animal interaction, human settlement, and agricultural practices, rather than state capacity.

The chapter proceeds in 5 sections. In section one, I outline the global security risks posed by global infectious disease outbreaks, and discuss the risks posed by emerging viruses. Section two presents a conceptual framework for evaluating potential drivers of disease emergence, centering upon a set of pathways through which social factors influence the emergence and diffusion of pathogens. The core of this section scrutinizes the factors driving elevated disease burdens and excess mortality in fragile states, identifying several causal mechanisms that might drive the emergence of deadly pathogens; it then assesses a set of alternate ecological, social, and infrastructural drivers of disease dynamics, and presents testable hypotheses which underpin the empirical analysis. Section three presents the data sources for the empirical analysis, and discusses inference challenges. Section four presents the results of the main empirical analysis, a battery of time-series negative binomial regression models, along with a set of robustness checks. Section five concludes.

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<sup>220</sup> OECD-DAC International Network on Conflict and Fragility, "Ensuring Fragile States are Not Left Behind", 2009, p. 1

<sup>221</sup> Newbrander, *ibid.* p. 6

<sup>222</sup> Ebrahim, G.J., "Neglected Tropical Diseases", *Journal of Tropical Pediatrics*, Vol. 55, No. 3, p. 141

<sup>223</sup> William Newbrander "Rebuilding Health Systems and Providing Health Services in Fragile States" U.S. Agency for International Development, Management Sciences for Health Occasional Papers, No. 7, 2007. p. 5

## 2. The scope and source of pandemic disease risk

Infectious diseases are now recognized as global hazards.<sup>224</sup> And pandemic disease outbreaks—outbreaks that affect large populations stretching across multiple countries or continents—are more than just risks, they are *catastrophic* risks: events with the potential to cause “serious damage to human well-being on a global scale.”<sup>225</sup> In a review of potential threats to the continued survival of humanity, Bostrom and Ćircović distinguish between severities of risk based upon three factors: *scope* (the number of people affected, ranging from personal to global), *intensity* (how badly they would be affected, ranging from imperceptible to fatal), and *probability* (the likelihood that the event will occur).<sup>226</sup> Global infectious disease outbreaks occupy an almost uniquely dangerous intersection

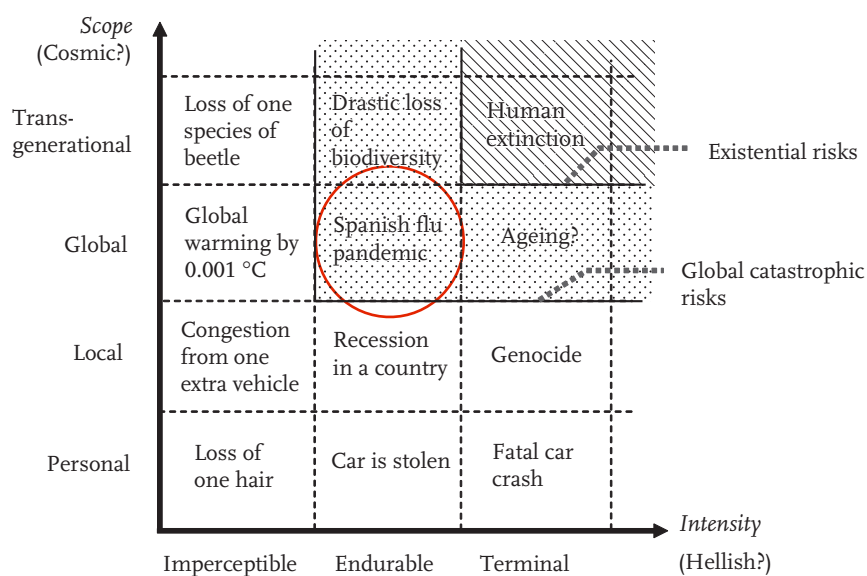


Figure 3.1: qualitative categories of risk. From Bostrom and Ćircović 2008 (indicative circle added)

between scale, impact, and probability.

<sup>224</sup> Harley Feldbaum, “U.S. Global Health and National Security Policy” *Center for Strategic and International Studies Global Health Policy Center report*, 2009., for brief discussion of the evolving emphasis on global infectious disease threat by the U.S. intelligence community and policymakers, see pp. 1-3. Laurie Garrett, “the Next Pandemic?”, *Foreign Affairs*, July/August, 2005; Maud Huynen et al. “The Health Impacts of Globalization: A Conceptual Framework”, *Globalization and Health*, Vol. 1, No. 14; David Relman et al., *Infectious Disease Movement in a Borderless World*, Workshop Summary of the National Academy of Science’s Forum on Microbial Threats, 2010, p. 2, see especially chapter 2; also, Stacey Knobler, et al., *The Impact of Globalization on Infectious Disease Emergence and Control*, Institute of Medicine, National Academy of Science, Forum on Microbial Threats, p. 2006

<sup>225</sup> Nick Bostrom and Milan M. Ćircović, “Introduction”, in Bostrom and Ćircović, eds., *Global Catastrophic Risks*, 2008, p. 1. Similarly, Chen argues infectious diseases and health crises tied to conflict and humanitarian emergencies ought to be considered human security threats, based upon four criteria: scale, urgency, intensity, and related externalities. See Lincoln Chen, “Health as a Human Security Priority for the 21st Century” Paper for Human Security Track III, Helsinki Process Track on Human Security, 2004

<sup>226</sup> *ibid.*, p. 3

The scope and impact of a disease outbreak is potentially unbounded. A pandemic outbreak has the potential to rapidly reach global scale, causing tens or potentially hundreds of millions of deaths. The 1918 influenza pandemic, an event that remains a key benchmark for the potential human security impacts of an acute public health emergency, killed between 20 and 100 million people worldwide, perhaps up to 3% of the global population.<sup>227</sup> To put this level of mortality in perspective, World War I is estimated to have led to the deaths of 19 million soldiers and civilians.<sup>228</sup> Significantly more Americans died in the 1918 pandemic than in both World Wars, or indeed, all 20th century conflicts put together.

The level of destruction caused by a major global pandemic is enduring (at least at the level of the human species) but constitutes a global hazard on a horrific scale, one which significantly outpaces even major war between multiple great powers. And the worst short-wave pandemics, such as the 1918 influenza pandemic, took place before the advent of mass international air travel, a feature of modern global integration that greatly intensifies the risks from infectious disease outbreaks.<sup>229</sup> Indeed, the potential *speed* of a pandemic outbreak, the potential for a new pathogen to rapidly overwhelm health systems before a cure (or even effective treatment protocols) can be established is a critical dimension of the risk.<sup>230</sup>

Historical experience also points to the potential for pandemics sparked by emerging diseases to devastate immunologically naive populations. The conquest of the Americas by European explorers was driven, to a very large extent, by the waves of pathogens that they unleashed on Mesoamerican populations with no immunity to old world diseases. Jared Diamond argues that “smallpox, measles, influenza, typhus, bubonic plague, and other infectious diseases endemic in Europe played a decisive role in European conquests, by decimating many peoples on other continents. For example, a smallpox epidemic devastated the Aztecs after the failure of the first Spanish attack in 1520.”<sup>231</sup> It is difficult to estimate the death toll from infectious agents imported to the New World by European conquerors with great precision. But estimates suggest a staggering loss of life: upwards of 50 percent of the population, ranging up to 95 percent in some accounts.<sup>232</sup> Beyond its horrendous direct impacts, the loss of life was sufficient to destroy the social fabric and governance systems of Mesoamerican societies, opening up the New World to the otherwise “unintelligible” conquest of millions by a few hundred Spanish soldiers.<sup>233</sup>

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<sup>227</sup> Secretary-General’s High-Level Panel on Threats, Challenges and Change, *ibid.*, p. 14

<sup>228</sup> Bostrom and Ćircović., p. 16

<sup>229</sup> Secretary-General’s High-Level Panel on Threats, Challenges and Change, *ibid.*

<sup>230</sup> Stephen S. Morse, “Factors in the Emergence of Infectious Diseases”, *Emerging Infectious Diseases*, Vol. 1, No. 1 — January-March 1995, p. 7

<sup>231</sup> Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies*, W. W. Norton & Company, 1999 pp. 77-78. See also Charles C. Mann, *1491: New Revelations of the Americas Before Columbus*, Vintage Books, New York, 2006

<sup>232</sup> Diamond 1999, *ibid.*, William H. McNeill, *Plagues and People*, Random House, 2010, p. 218

<sup>233</sup> McNeill 2010, pp. 216-217

The indirect, non-lethal damages of pandemic outbreaks are also significant. In the 1918 influenza epidemic, a quarter of those infected in the United States fell ill.<sup>234</sup> During peacetime, the impact of morbidity on such a massive scale would be a shock to the economy; during wartime, the impact on military production and readiness was significant. More recent regional pandemics exhibit similar dynamics. The 2002-3 SARS epidemic across Asia infected an estimated 8,096 people, of which it killed 774.<sup>235</sup> But the speed with which the pathogen spread, and fear engendered by its high case fatality rate, caused enormous disruption to trade, investment, and travel. Overall losses estimated in Asia were estimated at \$40 billion, and anger over travel and trade embargoes of infected countries raised diplomatic tensions.<sup>236</sup> Similarly, the emergence of Nipah in Malaysia in 1999 led to an embargo of pork exports, closing down half of the country's pig farms; a 1997 avian influenza outbreak in Hong Kong impacted poultry farms, as well as tourism, costing hundreds of millions of dollars; in same year, outbreak of foot and mouth disease in Taiwan caused a yearlong shut down the country's pork industry.<sup>237</sup> In middle income countries, such shocks to national income are consequential. In poor and fragile states, they are devastating to the national economy.

### Sources of pandemic disease threat

There is evidence that the development of microbial threats to human health is increasing: the U.S. National Intelligence Council reports that since the 1970s, approximately one new pathogen has emerged per year;<sup>238</sup> there are no cures or vaccines for many of these diseases.<sup>239</sup> However, not all microbes pose an equivalent risk to human health, either on an individual or global level.

There is broad consensus among global public health professionals, as well as historians of infectious disease, that viral agents pose the greatest threat to human health. William H. McNeill simply argues that "clearly viruses are what is most likely... to create some vast new catastrophe for humankind."<sup>240</sup> Why do viral agents pose a particularly intense threat? A wide variety of microbial life—protozoa, fungi and helminths—are potentially debilitating to infected individuals, but lack the potential to mutate and rapidly spread

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<sup>234</sup> Joshua Lederberg, Robert E. Shope, and Stanley C. Oaks, Jr., eds. *Emerging Infections: Microbial Threats to Health in the United States*, Institute of Medicine, National Academy of Sciences 1992, p. 18

<sup>235</sup> World Health Global Alert and Response (GAR), Cumulative Number of Reported Probable Cases of Severe Acute Respiratory Syndrome (SARS). Retrieved at: [http://www.who.int/csr/sars/country/table2004\\_04\\_21/en/index.html](http://www.who.int/csr/sars/country/table2004_04_21/en/index.html)

<sup>236</sup> See Jong-Wha Lee and Warwick J. McKibbin, "Estimating the Global Economic Costs of SARS", in *Learning from SARS: Preparing for the Next Disease Outbreak*, Institute of Medicine, National Academy of Sciences, 2004. U.S. National Intelligence Council, "Strategic Implications of Global Health" ICA 2008-10D, December 2008, p. 11 retrieved at: [https://www.fas.org/irp/nc/global\\_health\\_2008.pdf](https://www.fas.org/irp/nc/global_health_2008.pdf)

<sup>237</sup> U.S. National Intelligence Council, 2000, *ibid.*

<sup>238</sup> U.S. National Intelligence Council, "Strategic Implications of Global Health" ICA 2008-10D, December 2008, p. 15 retrieved at: [https://www.fas.org/irp/nc/global\\_health\\_2008.pdf](https://www.fas.org/irp/nc/global_health_2008.pdf). See also Lederberg et al., 1992, *ibid.* p. 26. A more recent estimate by Woolhouse et al. points to an even higher rate of discovery, 3-4 new viral species per year. See Mark Woolhouse, Fiona Scott, Zoe Hudson, Richard Howey, and Margo Chase-Topping "Human viruses: discovery and emergence" *Philosophical Transactions of the Royal Society London Biological Science*, Vol. 367, 2012, p. 2864

<sup>239</sup> U.S. National Intelligence Council, 2000, pp. 5, 13-14

<sup>240</sup> McNeill 1993, *ibid.*, p. 36

through human populations. Bacterial, even novel, virulent bacteria, are susceptible to control via existing antibiotic compounds, though multi- and extensively- drug resistant bacteria pose a greater risk.

Viruses, on the other hand, are both more likely to emerge into human populations, more likely to spread rapidly, and pose greater challenges to effective control once they are in circulation.<sup>241</sup> The replication processes of viral agents play a significant role in the distinctive dynamics of viral agents. Viruses have generally higher rates of mutation than other pathogens. This rate is driven by “sloppy” replication of nucleic acid sequences, combined with reduced capability (than eukaryotic organisms) to correct mutations introduced by such replication errors. Small mutations, even a change in a single amino acid in viral genetic material, can produce major alterations in an agent’s behavior, leading to vastly increased capacity to spread, or to cause acute disease.<sup>242</sup> These factors, and the ensuing higher rates of mutation, produce more viral variations and hence a greater potential to adapt to human hosts, yielding a viral strain that can infect and efficiently transmit between humans.<sup>243</sup> The same tendency towards mutation and genetic diversity can render viral agents resistant to efforts to develop vaccines. In short: the probability of viral emergence is much greater than other pathogens, and the potential impact similarly outstrips the pandemic potential of other microbial agents.

If emerging viral agents represent the most significant pandemic risk, how might potentially dangerous viruses emerge? Stephen Morse notes that there are three sources of emerging viruses within a population: the *evolution* of a new virus (typically through the mutation and evolution of a new variant of an existing virus); the *introduction* of a virus to humans from another species, where the pathogen is already endemic; and the broader *diffusion* of a virus from a smaller population where it has already become endemic.<sup>244</sup> In practice it may be difficult to identify which mechanism is at play in a given case of disease emergence; for instance, whether a given pathogen is in fact arising in a human

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<sup>241</sup> Of course, not all viral pathogens pose an equal pandemic risk. Viral agents vary widely in their infectivity and virulence (and thus potential aggregate impact on human health). Some agents, like Hendra virus, have yet to achieve human to human transmission. Others, such as Ebola, have caused small clusters of highly visible outbreaks, but have yet to escalate above regionally constrained epidemics and cause large-scale outbreaks. On the other side of the spectrum lies agents like HIV, which have done incalculable damage to human health and wellbeing worldwide.

<sup>242</sup> Y. Kawaoka and R. G. Webster, “Molecular mechanism of acquisition of virulence in influenza in nature.” *Microbial Pathogenesis*, Vol. 5, 1988, cited in: Lederberg et. al., 1992, p. 19

<sup>243</sup> Research on mutation rates among RNA viruses— a category that includes retroviruses like HIV— has shown that they evolve at a rate one million times faster than DNA eukaryotes. Louis M. Mansky “Retrovirus mutation rates and their role in genetic variation” *Journal of General Virology* Vol. 79, 1998, p. 1337. However, mutation rates also vary widely across viral agents, with poliovirus exhibiting one of the fastest rates of evolution. See Jaume Jorba, Ray Campagnoli, Lina De, and Olen Kew, “Calibration of Multiple Poliovirus Molecular Clocks Covering an Extended Evolutionary Range” *Journal of Virology*, Vol. 82, No. 9, May 2008. See also Jones et al., *ibid.* p. 990

<sup>244</sup> Stephen S. Morse “Origins of Emerging Viruses” in Stephen S. Morse (ed.) *Emerging Viruses*, Oxford University Press. 1993, p. 12. Fauci et al. cite deliberately spread diseases as a potential additional mechanism emergence; bioterrorism, coupled with genetic manipulation of viral agents, has also been cited as a potential risk factor, and mechanism for emergence. See Anthony S. Fauci, Nancy A. Touchette, and Gregory K. Folkers, “Emerging Infectious Diseases: a 10-Year Perspective from the National Institute of Allergy and Infectious Diseases”, *Emerging Infectious Diseases*, Vol. 11, No. 4, 2007, p. 519.

population for the first time, or was present in isolated population, but gone undetected until its wider diffusion.<sup>245</sup>

Empirically, the second mechanism identified by Morse—the movement a virus endemic to one species to another host population—accounts for the vast majority of emerging diseases. Animal populations are a critical source of microbial agents affecting humans. Historically, many zoonotic viruses, particularly those that emerged in Europe and other temperate climate zones, were introduced to humans during the process of animal domestication.<sup>246</sup> Jared Diamond notes that the almost unilateral transmission of deadly infections from Europeans to native American populations may reflect the fact that animal populations known to be reservoirs for these diseases, including sheep, pigs, camels, and cattle, were domesticated in Eurasia rather than the new world.<sup>247</sup>

However, in contrast to historical patterns, a significant share of contemporary emerging viruses appear to have emerged not from domesticated animals, but from wild hosts. This is particularly the case with viruses originating in the tropics.<sup>248</sup> In total, over 60 percent of the total number of microbes known to cause disease in human beings are zoonotic; that is, originally introduced to human populations from animals.<sup>249</sup> The vast majority of contemporary emerging pathogens—by one recent estimate, nearly 75 percent—are also zoonotic in origin.<sup>250</sup> The U.S. Institute of Medicine’s report on emerging infectious diseases thus argues that the “significance of zoonoses in the emergence of human infections cannot be overstated.”<sup>251</sup> Accordingly, this body of pathogens is the principal focus of this chapter’s empirical analysis.<sup>252</sup>

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<sup>245</sup> In many cases, as Steven Luby aptly puts it: “a disease was already in circulation, but has newly emerged into our consciousness” (author’s interview notes). However, genetic information, such as the number of viral strains and differentiation between them, as well as the evolutionary gap between viruses circulating in humans and the original host populations, can provide important clues as to whether a pathogen is novel to humans, or has begun to diffuse from a smaller population into more general circulation. See also Mark Woolhouse and Eleanor Gaunt, “Ecological Origins of Novel Human Pathogens” *Critical Reviews in Microbiology*, Vol. 33, 2007, p. 232

<sup>246</sup> Nathan D. Wolfe, Claire Panosian Dunavan, and Jared Diamond, “Origins of major human infectious diseases”, *Nature*, Vol 447, May 2007, p. 282

<sup>247</sup> See Jared Diamond “Evolution, consequences and future of plant and animal domestication” *Nature*, 418, 2002

<sup>248</sup> Wolfe, Dunavan and Diamond, 2007, *ibid.*, p. 281

<sup>249</sup> Louise H. Taylor, Sophia M. Latham, and Mark E. J. Woolhouse “Risk factors for human disease emergence” *Philosophical Transactions of the Royal Society London Biological Science*, 356, 2001, p. 983

<sup>250</sup> Taylor et al., *ibid.*; Frederick A. Murphy “Emerging Zoonoses” *Emerging Infectious Diseases*, Vol. 4, No. 3, July–September 1998

<sup>251</sup> Joshua Lederberg, Robert E. Shope, and Stanley C. Oaks, Jr., Editors; Committee on Emerging Microbial Threats to Health, Institute of Medicine, *Emerging Infections: Microbial Threats to Health in the United States*, 1992, p. 43

<sup>252</sup> It is worth noting that epizootic and plant pathogens can also have major implications for human health and well-being, albeit indirectly by infecting cultivated plants and domesticated animals. The Irish potato famine, caused by a protozoan originally imported to Europe from South America via guano phosphate mined for fertilizer, is a particularly stark example. The relative genetic homogeneity of the potato cultivars grown in Europe allowed for the emerging protozoan to rapidly proliferate, leading to widespread starvation.

### 3. Mechanisms and causes of disease emergence

Edward O. Wilson has argued strenuously and persuasively for the development of what he calls consilient research: theoretical models and empirical analyses that engage in the coherent integration of multiple domains of knowledge, from natural and social science.<sup>253</sup> The conceptual framework I utilize in this analysis is a modest extension of the foundational epidemiological model of infectious disease, which links disease emergence dynamics to the interaction between microbes, hosts and the (localized) environment.<sup>254</sup> My goal in deploying a consilient framework is not to test specific micro-level epidemiological mechanisms, but instead to ensure that the causal factors investigated in this chapter are consistent with sound epidemiological and microbiological principles (or put another way: that this research respects the laws of epidemiological gravity).<sup>255</sup> Social research which does not integrate mechanisms rooted in etiology and epidemiological models can, at worst, propose spurious or implausible causal relationships, and at best, identify potentially suggestive correlations, lacking causal pathways or meaningful substantive interpretations.<sup>256</sup>

I begin by outlining the interlinked processes that comprise disease emergence, and identify factors operating at the host and environmental levels that impact each stage of emergence. Next, I explore the impact of a set of independent variables—state fragility and failure, and a range of other political, social, and economic drivers—on host and environment, and derive a set of testable hypotheses that drive the empirical analysis.

#### Conceptual framework

Morse conceptualizes disease emergence as a two-stage process: the *introduction* of a pathogen into a new population; and subsequently, the establishment and *diffusion* of the pathogen.<sup>257</sup> For zoonotic agents, diffusion typically requires adaptation: in order for a zoonotic pathogen to move beyond an isolated transmission event and escalate in spatial coverage and intensity, the pathogen must evolve to achieve sustained, efficient

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<sup>253</sup> Edward O. Wilson, “Back from Chaos”, *The Atlantic Monthly*, March 1998. retrieved at: <http://www.theatlantic.com/past/docs/issues/98mar/eowilson.htm>

<sup>254</sup> Penny Webb, Chris Bain, and Sandi Pirozzo, *Essential Epidemiology*, Cambridge University Press, 2005, pp. 258-264

<sup>255</sup> Price-Smith, 2009, *ibid.*, p. 198

<sup>256</sup> Price-Smith has developed this argument in detail, and deploys consilient theory linking epidemiology and political science in several pathbreaking analyses. See Andrew T. Price-Smith, *The Health of Nations: Infectious Disease, Environmental Change, and Their Effects on National Security and Development*, MIT Press, 2002, and Andrew T. Price-Smith, *Contagion and Chaos*, MIT Press, 2009, pp. 4-19. Peterson, an international relations scholar, has leveled a symmetrical criticism at accounts which suggest that infectious diseases threaten international security, while ignoring theoretical frameworks and causal models developed by international relations scholars. Peterson, for instance, argues that the security threat posed by infectious diseases should be evaluated in terms of its impact on the balance of power among nation-states, the incidence of conflicts between states, or the outcome of conflicts (via weaponized pathogens, or via destroying the readiness or capability of military organizations.) See Susan Peterson, “Epidemic Disease and National Security”, *Security Studies*, Vol. 12, No. 2, Winter 2002/3.

<sup>257</sup> Morse 1995, *ibid.*, p. 7. See also, Stephen S. Morse, “Emerging viruses: defining the rules for viral traffic” *Perspectives in Biology and Medicine*, Vol. 34 No. 3, 1991. In the case of zoonotic agents, which are typically not well adapted to human hosts, the dynamics of emergence are somewhat more complex. The pathogen must first move from a wildlife reservoir to a human (or from a wildlife host to a domesticated animal, and then to a human host.)

transmission between humans.<sup>258</sup> And for a pandemic to occur, the pathogenic agent must spread beyond its initial outbreak site, into new human populations.<sup>259</sup> Both of these stages—introduction and diffusion—are conditioned by a complex set of factors operating at (and between) the host and environmental levels.<sup>260</sup>

The potential for a given viral agent to leap the species barrier, or to diffuse once introduced to a human host, is to a significant extent governed by factors specific to the viruses' own genome: its infectivity, incubation and communicable periods, virulence, tissue tropism, and the rate at which it mutates as a function of its replication processes. In the state of nature, these dimensions of the viral genome are not directly affected by human agency, but instead interact with factors operating at the host and environmental level in ways that elevate or depress the risk of emergence.<sup>261</sup>

The response of human hosts to microbial agents varies significantly: by individual, by microbe, and over time. Casadevall and Pirofski note that the classical concept of virulence—traditionally understood as an inherent characteristic of some microbes to cause disease in humans—more accurately describes the interaction between microbial characteristics and the host's immune system.<sup>262</sup> The vulnerability of individual hosts to infection and the development of disease can be increased by a range of factors: mutations that disable specific immune-system functions,<sup>263</sup> immune-system weakening or collapse caused by another infectious agent (such as the secondary infections caused by HIV), by malnutrition,<sup>264</sup> as well as by stress and lack of sleep.<sup>265</sup> These factors can render humans more vulnerable to infection, and so may increase the potential for a microbe to emerge into a human population by successfully invading an individual host. Where environmental pressures simultaneously impact a large number of people in a given area—for instance, malnutrition induced by widespread famine—the rate of disease diffusion may be amplified by the larger number of more susceptible hosts.

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<sup>258</sup> Pathogens that do not spread between humans, and emerge only as continual "importation" from animal hosts to humans are unlikely to escalate beyond localized epidemics until a mutation facilitates human to human transmission. Brian L. Pike, Karen E. Saylor, Joseph N. Fair, Matthew LeBreton, Ubald Tamoufe, Cyrille F. Djoko, Anne W. Rimoin, and Nathan D. Wolfe, "The Origin and Prevention of Pandemics" *Emerging Infections*, Vol. 50, 2010, p. 1636

<sup>259</sup> Nathan D. Wolfe, Peter Daszak, A. Marm Kilpatrick, and Donald S. Burke "Bushmeat Hunting, Deforestation, and Prediction of Zoonotic Disease Emergence", *Emerging Infectious Diseases*, Vol. 11, No. 12, December 2005, p. 1824

<sup>260</sup> The potential for a given viral agent to leap the species barrier, or to diffuse once introduced to a human host, is to a significant extent governed by factors specific to the viruses' own genome, include its infectivity, incubation and communicable periods, virulence, and the rate at which a given viral agent mutates as a function of its replication processes. In the state of nature, these factors are not directly affected by social factors

<sup>261</sup> Outside the state of nature, the genetic manipulation of viral agents—for instance, in biological warfare or bioterrorism—can alter viral infectivity, mechanisms of transmission, or pathogenicity, in ways that increase the risk of emergence.

<sup>262</sup> Arturo Casadevall and Liise-anne Pirofski "Host-Pathogen Interactions: The Attributes of Virulence" *The Journal of Infectious Diseases*, Vol. 184, 2001; and Arturo Casadevall and Liise-anne Pirofski "Host-Pathogen Interactions: Redefining the Basic Concepts of Virulence and Pathogenicity" *Infection and Immunity*, Vol. 67 No. 8, 1999

<sup>263</sup> Casadevall and Liise-anne Pirofski 2001, *ibid.*, p. 341

<sup>264</sup> Eileen Stillwaggon, *AIDS and the Ecology of Poverty*, Oxford University Press, 2006, pp. 32-44

<sup>265</sup> Penelope A. Bryant, John Trinder, and Nigel Curtis "Sick and tired: does sleep have a vital role in the immune system?" *Nature Reviews Immunology* Vol. 4, June 2004



A number of factors operating at the environmental level can alter the potential for viral introduction into a human host, as well as broader diffusion. In the case of zoonotic infectious agents, exposure is perhaps the most important factor mediating viral introduction. Wolfe et al. note the strong evidence that many zoonotic pathogens are repeatedly transmitted from animal reservoirs to humans, but do not readily achieve human to human transmission.<sup>266</sup> The repeated transmission of viral zoonoses to humans — what Wolfe et al. refer to as “viral chatter” — has a direct impact on the potential for a pathogen to adapt to human hosts and evolve towards more efficient transmission among humans, by increasing the diversity of viral variants and genomes in circulation.<sup>267</sup> Thus, factors that alter the degree or frequency of contact between humans (or domesticated animal) with wildlife reservoirs will have a direct impact on the risk of emergence. Just as environmental factors can increase the susceptibility of individual hosts to infection, they can also amplify the rate of disease diffusion by increasing the exposure of potential hosts to infected cases. Higher population densities, or factors that facilitate disease vectors or transmission—such as stagnant water providing breeding grounds for mosquitos, or inadequate sanitation leading to contamination of drinking water—can effectively boost the reproductive ratio of the microbe in a localized area.

### Drivers of disease emergence

The following subsections assess clusters of drivers linked with the emergence of viral agents, including state fragility; population displacement; the human-wildlife interface; urbanization, and habitat disturbance. Each driver is assessed in terms of its impact on host and environmental contributors to disease introduction or diffusion. Table 3.1 (below) summarizes the drivers and the causal channels thought to link them with disease emergence. I formalize testable hypotheses linked to each driver, which underpin the empirical analysis presented in section four.

#### (i) State fragility

Fragile and failing states contain a toxic cocktail of infectious disease risk factors: violent conflict, poverty, dysfunctional institutions, and the hollowing-out (or outright destruction) of public health systems. These factors are thought to synergistically interact, increasing the odds that a disease will be introduced, accelerating disease diffusion, and rendering an emerging pathogen harder to control once it has begun to spread.<sup>268</sup>

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<sup>266</sup> This appears to be the case both for known diseases now established in human populations—HIV-1 and 2, for instance, appear to have been transmitted up to 10 times from animals to humans before it spread globally—as well as viruses not yet circulating between humans, such as simian foamy virus. Wolfe et al., 2005, *ibid.* p. 1824

<sup>267</sup> Wolfe et al., 2005, *ibid.*

<sup>268</sup> Miriam Estrin and Carl Malm “State Weakness and Infectious Diseases”, in Susan E. Rice, Corinne Graff, and Carlos Pasual eds., *Confronting Poverty: Weak States and U.S. National Security*, Brookings Institution, 2010, p. 136

Table 3.1: potential drivers of disease emergence

Driver	Causal channel for increased emergence risk		
	Human/animal contact	Host susceptibility	Weakened control
State fragility	X	X	X
Population displacement	X	X	
Bushmeat production	X		
Intensive animal farming	X		
Urbanization		X	
Feral cities		X	X
Deforestation	X		
Intensive agriculture	X		
Road penetration	X		X

Long-run institutional dysfunctionality is the defining feature of a fragile state.<sup>269</sup> Weak institutions undermine all aspects of state service provision. But because the effective delivery of public health services requires a particularly high degree of institutional capacity for planning, management, and coordination, health systems are perhaps especially vulnerable, due to interlocking deficits in financing, infrastructure, human resources, and management.<sup>270</sup>

Low tax revenues and insufficient financing for health can have particularly adverse impacts on the potential for exposure to novel pathogens.<sup>271</sup> Protective public health infrastructure—sanitation, water, vector control—are typically underfunded in fragile, increasing the population’s potential exposure to pathogens; lack of foreign exchange can limit access to medicines and infection control supplies.<sup>272</sup> Moreover, impoverished populations already exposed to famine or other resource pressures without the benefit of a social safety net may range further into wilderness, seeking food, water, and fuel, potentially increasing their exposure to disease vectors or animal populations where

<sup>269</sup> Robert I. Rotberg, “The Failure and Collapse of Nation-States: Breakdown, Prevention, and Repair”, in Rotberg ed. *When States Fail: Causes and Consequences*, Princeton 2003, pp. 1, 5-6

<sup>270</sup> Newbrander, *ibid.*, p. 9. See also World Health Organization, *Everybody’s Business: Strengthening Health Systems to Improve Outcomes*, 2007, Kruk, et al., *ibid.*, p. 93

<sup>271</sup> Protective infrastructure and public health systems can also be indirectly damaged, as limited financial resources are diverted from social services towards security sector spending. For example, during the height of the civil war in southern Sudan in the late 1980s, health budgets were slashed; medical supplies and doctors’ salaries were cut; health facilities across the region were shuttered, only four remained open. See Cole P. Dodge, “Health Implications of War in Uganda and Sudan”, *Social Science and Medicine*, Vol. 31, No. 6, 1990; see also Ghorbarah et al., 2003 *ibid.* pp. 191-193

<sup>272</sup> Frederick Burkle “Pandemics: State Fragility’s Most Telling Gap?”, *Institute for National Strategic Studies Global Strategic Assessment 2009: America’s Security Role in a Changing World*, p. 106

dangerous zoonoses are endemic.<sup>273</sup> Once diseases have been introduced, disease diffusion can be facilitated by underfunded and weakened hospital and clinical infrastructure, particularly in rural areas and poor urban cores. Even where health facilities are in operation, basic equipment and drugs supplies are often inadequate, and the health workforce may lack trained medical personnel and managers.<sup>274</sup>

All of these risks are amplified by the other key dimension of state fragility: endemic insecurity, punctuated by repeated flare-ups armed conflict violence and insecurity. War is, as Levy and Sidel argue, “anathema to public health.”<sup>275</sup> Armed conflict has damaging impacts on already degraded public health infrastructure. Health facilities often become targets for all sides in a conflict: space, services and supplies are “requisitioned” by troops, medical personnel are harassed or killed—or health facilities closed—by military forces suspicious that doctors may be aiding their opponents.<sup>276</sup> Hospital and clinical facilities are accidentally damaged or destroyed, or sometimes deliberately targeted,<sup>277</sup> and trained health personnel killed or displaced.<sup>278</sup> Protective public health infrastructure, such as sanitation and water purification and distribution systems, are damaged or destroyed,<sup>279</sup> and vector control programs collapse, encouraging the spread of pathogens.<sup>280</sup> The net effect of armed conflict is that “the population is exposed to new health threats without access to proper health care.”<sup>281</sup>

Underfunded, understaffed, overtaxed, and damaged clinical infrastructure can amplify the rate of disease diffusion once a deadly pathogen has been introduced to a human population. The probability of a zoonotic pathogen transferring to from an animal to a human host is low, and the extremely high case fatality rate of many zoonoses increases the likelihood that those who are infected will die quickly, before transmitting the pathogen to other human beings; moreover many zoonoses can only be transmitted via body fluids, and do not evolve more efficient means of transmission. During periods of intense violence and instability, the risk of bloodborne transmission is magnified; nosocomial infections can be introduced in hospitals that lack proper sterilization and sanitation protocols, and sufficiently trained staff.<sup>282</sup>

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<sup>273</sup> Susan E. Rice “The National Security Implications of Global Poverty”, in Susan E. Rice, Corinne Frapp, and Carlos Pasual, ed., *Confronting Poverty: Weak States and U.S. National Security*, 2010, pp. 10-11

<sup>274</sup> Newbrander, *ibid.*, p. 9; Dodge, *ibid.* See also Sachs, Jeffrey “The Strategic Significance of Global Inequality”, *The Washington Quarterly*, vol. 23, no. 4, 2001 p. 193

<sup>275</sup> Barry S. Levy and Victor W. Sidel “War and Public Health: An Overview”, in Levy and Sidel Ed., *War and Public Health*, Oxford University Press, p. 3

<sup>276</sup> Dodge, *ibid.*, p. 692

<sup>277</sup> Kruk et al., *ibid* p. 90

<sup>278</sup> *Ibid.*, pp. 89

<sup>279</sup> Hazem Adam Ghorbarah, Paul Huth, and Bruce Russett “Civil Wars Kill and Maim People—Long After the Shooting Stops” *American Political Science Review*, Vol. 97, No. 2, 2003, p. 193; Levy and Sidel, *ibid.*, p. 10

<sup>280</sup> Máire A Connolly, Michelle Gayer, Michael J Ryan, Peter Salama, Paul Spiegel, David L Heymann “Communicable diseases in complex emergencies: impact and challenges” *Lancet*, Vol. 364, 2004, p. 1974

<sup>281</sup> Zaryab Iqbal, *War and the Health of Nations*, Stanford University Press, 2010, p. 2

<sup>282</sup> Gayer et al., “Conflict and Emerging Infectious Disease”, *Emerging Infectious Diseases*, vol. 13, no. 11, p. 1626

Finally, the collapse of health systems also undermines timely disease surveillance and response to outbreaks. Outbreak investigation and analysis may be hampered by ongoing violence, the destruction of infrastructure, or the killing or displacement of key staff. As a result, once a pathogen has emerged, it may be more likely to proliferate and spread, before it can be detected, characterized, and controlled.<sup>283</sup>

With respect to emerging pathogens, all of these arguments exist mainly at the level of theory. The seminal analyses of the relationship between institutional quality and infectious disease focus primarily on the impact of existing disease burdens (or prevalence) on state capacity, rather than the impact of institutional fragility on the emergence of new diseases. However, the evidence that does exist suggests a complex relationship between institutions and pathogens.

There is fairly strong evidence that infectious diseases are as unhealthy for institutions as they are for individual human beings. Price-Smith finds a strong relationship between infectious disease prevalence, instrumented by infant mortality and life expectancy, and downstream measures of state capacity. He argues that infectious diseases burdens erode state capacity via multiple channels: directly, by increased absenteeism among state officials, and greater mortality among leaders and bureaucrats, and indirectly via lowered economic productivity and reductions in the tax base.<sup>284</sup> Similarly, Acemoglu, Johnson and Robinson find that local disease ecologies have extremely long-run impacts on institutional quality: in colonial holdings with high prevalence of diseases to which settlers were immunologically unprepared, (notably malaria and yellow fever) European powers established abusive, extractive institutions, while in areas with lower disease burdens and lower rates of settler mortality, Europeans established institutions that provided for the rule of law (jury trial, economic protections, limits against expropriation).<sup>285</sup>

There is limited evidence to suggest that abrupt shocks to state capacity can cascade into health systems, and increase the prevalence of diseases that are already present in a human ecology. The collapse of the Soviet Union is a notable case: from 1990 to 1996, infectious disease death rates in Russia and former Soviet States increased by 50 percent,<sup>286</sup> while diseases that were formerly under control, notably diphtheria, exploded into epidemics across the former Soviet states.<sup>287</sup> More generally, Price-Smith examines the potential for decreasing state capacity to increase the infectious disease burdens, proxied by life expectancy and infant mortality rates, and finds evidence for a limited, short-run effect.<sup>288</sup> With respect to emerging diseases, micro-level studies have found that

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<sup>283</sup> Connolly et al., *ibid.*, pp. 1975, 1979. See also Rice, *ibid.*, p. 12

<sup>284</sup> Andrew Price-Smith 2002, *ibid.*, pp. 13-15, 51-69

<sup>285</sup> Daron Acemoglu, Simon Johnson, James Robinson, "The Colonial Origins of Comparative Development: An Empirical Investigation" *American Economic Review*, Vol. 91, No. 5, pp. 1374-5, ; see also Daron Acemoglu, Simon Johnson, James Robinson, "Disease and Development in Historical Perspective", *Journal of the European Economic Association*, April-May 2003, p. 403

<sup>286</sup> U.S. National Intelligence Council, 2000, *ibid.*, p. 31

<sup>287</sup> Charles R. Vitek and Melinda Wharton "Diphtheria in the Former Soviet Union: Reemergence of a Pandemic Disease", *Emerging Infectious Disease*, Vol. 4, No. 4, 1998

<sup>288</sup> Price-Smith 2002, *ibid.*, pp. 70-72

weak, impoverished states are less capable of implementing potentially critical disease prevention mechanisms. In the case of avian influenza, for instance, weak states lack the administrative capability to carry out effective culls of poultry stocks that are suspected of harboring the disease, and similarly lack the financial resources to adequately compensate farmers for lost animals.<sup>289</sup> Ineffective attempts at control might even backfire, leading farmers to quickly sell infected animals on the open market rather than risk losing them outright.<sup>290</sup>

Arguments regarding the impact of fragile institutions on disease emergence are more speculative than empirical, but the evidence does suggest that weak institutions can significantly boost disease diffusion, if not the initial introduction of dangerous pathogens to human populations. If so, the damaging impact of disease burdens on state capacity suggests the potential for a “doom spiral”, in which disease erodes institutional capacity, which in turn raises the risk that new diseases will emerge and diffuse. This yields hypothesis 1, which matches the conventional wisdom articulated by policymakers:

*Hypothesis 1: as state fragility increases, the rate of disease emergence will increase*

(ii) Population displacement

To threaten global public health a pathogen must enter wider circulation. Many analysts have identified refugee flows as a key vector for transnational contagion from fragile states, arguing that refugees act as “region-wide conveyor belts of infectious disease”,<sup>291</sup> and pose a particular threat to neighboring states that receive refugee flows.<sup>292</sup>

Accounts of the relationship between forced migration and disease emergence contain two related but distinct claims regarding how and why forced migration could impact disease dynamics. The less common claim is that aspects of the migration process itself can increase the odds that a disease will emerge into a human population, primarily by increasing contact between wildlife and a particularly stressed and weakened population of human hosts who will be more susceptible to infection. The more common claim is that the public health stresses created by refugee camp life once refugees are “settled” elevate the odds that a novel pathogen that has already entered infected a human being will spark an outbreak. I discuss each mechanism, in turn.

Refugees fleeing institutional collapse and insecurity face two conditions that could jointly increase the probability of disease emergence: increased *susceptibility* to infectious

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<sup>289</sup> Sophal Ear, “Emerging Infectious Disease Surveillance in Southeast Asia: Cambodia, Indonesia, and the US Naval Area Medical Research Unit 2”, *Asian Security*, Vol. 8, No. 2, 2012, pp. 175-176

<sup>290</sup> Susan E. Rice, “The Threat of Global Poverty”, *The National Interest*, Vol. 83, Spring 2006, pp. 79-80, Sophal Ear

<sup>291</sup> Lael Brainard, Derek Chollet, and Vinca LaFleur “The Tangled Web: The Poverty-Insecurity Nexus” in Brainard and Chollet, eds., *Too Poor for Peace?: Global Poverty, Conflict, and Security in the 21st Century*, Brookings Institution, 2007 p. 4

<sup>292</sup> Edward Newman “Weak States, State Failure, and Terrorism”, *Terrorism and Political Violence*, Vol. 19, 2007, p. 466; The Global Fund to Fight AIDS, Tuberculosis, and Malaria, “Global Fund Investments in Fragile States: Early Results.” 2005, p. 9

diseases of all kinds, and increased *exposure* to potentially virulent zoonotic pathogens.<sup>293</sup> Increased susceptibility is driven primarily by the conditions faced by forced migrants: poor shelter, lack of sleep, stress, insufficient access to food, and hence poor nutrition, lack of access to clean water and sanitation.<sup>294</sup> Some camps also lack routine childhood immunization programs, leading to outbreaks of preventable diseases such as measles.<sup>295</sup> Such vulnerable populations are particularly susceptible to infection by microbial agents.<sup>296</sup>

These factors may also shape refugees' potential exposure to virulent pathogens, primarily by increasing their contact with animal disease reservoirs. Refugees fleeing violence and instability are often forced through wilderness, and may purposefully such routes rather than major roads where they may come under attack. Flight through wilderness can bring forced migrants into contact with natural reservoirs of zoonotic diseases.<sup>297</sup> As one account argues, "as people flee the terror of war and retreat into more marginal regions, the potential of encountering a previously unknown virus such as Ebola is high."<sup>298</sup> Famine and lack of access to basic necessities may also force refugees into closer contact with wildlife. Famine— sometimes artificially induced by raiding, the destruction of food stocks by armed groups, and the constriction or manipulation of food markets— may force refugees to harvest wild foods, further increasing their potential exposure.<sup>299</sup> Similarly, migrants seeking fresh water and firewood for heating and cooking may also seek both from forests and wilderness, increasing their exposure to animal hosts and vectors.

It is likely that these factors will have the most pronounced impact on disease emergence risk *within* states that are producing refugee flows. Forced migrants are at greatest risk, and receive the least humanitarian assistance *before* they cross an international boundary and become legal refugees. It is during the phase of internal displacement that they are most likely to take paths that increase their exposure, and suffer from the most extreme nutritional and sanitation deficits that increase their susceptibility to infection. As such:

*Hypothesis 2a: population displacement will increase the rate of disease emergence in the affected/sending state*

Once forced migrants cross a border and settle, they are exposed to a distinct set of public health risks, which increase the probability of an epidemic if an emerging pathogen has already started to establish itself via human to human transmission.

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<sup>293</sup> Ezekiel Kalipeni and Joseph Oppong "The Refugee Crisis in Africa and Implications for Health and Disease: A Political Economy Approach", *Social Science and Medicine*, vol. 46, no. 12, 1998 p. 1646

<sup>294</sup> Michelle Gayer, et al., "Conflict and Emerging Infectious Disease", *Emerging Infectious Diseases*, vol. 13, no. 11, p. 1625; MJ Toole and RJ Waldman, "The Public Health Aspects of Complex Emergencies and Refugee Situations", *Annual Review of Public Health*, Vol. 18, 1997

<sup>295</sup> MJ Toole and RJ Waldman, *ibid.*

<sup>296</sup> Weiss and McMichael, *ibid.*, p. S74

<sup>297</sup> Price-Smith 2009, *ibid.*, p. 162

<sup>298</sup> Kalipeni and Oppong *ibid.* p. 1649

<sup>299</sup> Alex de Waal, *Famine that Kills: Darfur, Sudan*. Oxford University Press, 2004; Alan R. Pierce and Marla R. Emery, "The Use of Forests in Times of Crisis: Ecological Literacy as a Safety Net", *Forests, Trees and Livelihoods*, Vol. 15, 2005

Refugee camps have been described as “among the most pathogenic environments imaginable.”<sup>300</sup> The risks posed by poor living conditions, particularly in the early phases of settlement before substantial international assistance has been brought to bear, primarily relate to inadequate sanitation facilities, lack of access to clean water, malnutrition, and high-density settlement. Where camps do not meet international standards and these factors are operative, outbreaks of war pestilence— diarrheal diseases, including cholera, upper respiratory infections, and vaccine-preventable diseases such as measles— are frequent.<sup>301</sup> These same conditions may also facilitate the outbreak of an emerging pathogen.<sup>302</sup>

Refugee camps are typically porous. Refugees leave to earn income, and collect food or fuel; health workers, soldiers, and traders enter camps. It therefore possible that the presence of refugee camps in “host” countries could constitute hotspots for disease diffusion into the surrounding population, via in and out migration, and indeed, political scientist have argued that camps can “vectors for transmitting disease to other regions.”<sup>303</sup> On the other hand, several factors may also reduce the potential for disease diffusion: refugee camps are often located in remote rural areas, far from population centers; contact with local populations may be limited by inadequate or destroyed infrastructure. Moreover, once flows of international assistance have been established, health and education services within camps are often higher quality than those in surrounding areas, limiting the incentive for refugees to exit the camp.<sup>304</sup>

Empirical evidence on the impact of refugee flows on disease diffusion is ambiguous and inconclusive, primarily because findings from cross-national research do not match the evidence produced by sub-national and camp-level analyses. Research from political science has found a correlation between refugee inflows and degrading public health outcomes in host countries: including elevated infectious disease burdens, increased infant mortality, and decreased life expectancy. The association between refugee inflows and these proxies for host population health are thought to reflect both the spread of infectious disease from refugees to host populations, as well as the diversion of resources to meet health needs of forced migrants.<sup>305</sup> Cross-national research on HIV/AIDS prevalence in Africa also finds a positive, though small, association between refugee stocks and HIV prevalence in host countries.<sup>306</sup>

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<sup>300</sup> Jamil H. Kazmia, and Kavita Pandit “Disease and dislocation: the impact of refugee movements on the geography of malaria in NWFP, Pakistan”, *Social Science and Medicine* Vol. 52, 2001, pp. 2066-2069

<sup>301</sup> MJ Toole and RJ Waldman, *ibid.*

<sup>302</sup> Oppong and Kalipeni, *ibid.*, p. 1638

<sup>303</sup> Ghorbarah, Huth and Russett, *ibid.*, p. 192

<sup>304</sup> Paul B. Spiegel, “HIV/AIDS among Conflict-Affected and Displaced Populations: Dispelling Myths and Taking Action” *Disasters*, Vol. 28, No. 3, 2004, p. 324

<sup>305</sup> Iqbal, *ibid.*, pp. 143-145

<sup>306</sup> Zaryab Iqbal and Christopher Zorn, “Violent Conflict and the Spread of HIV/AIDS in Africa”, *Journal of Politics*, Vol. 72, No. 1, 2010, pp. 156-158

However, subnational data presents a sharply contrasting picture. HIV sentinel surveillance data from refugee camps in Kenya, Rwanda, Sudan, and Tanzania found that refugees had lower prevalence rates than the surrounding host communities.<sup>307</sup> A systematic review of HIV prevalence rates in refugee and host communities in seven conflict-affected African countries found that prevalence rates in dozens of camps were generally lower than among host populations.<sup>308</sup> The presence of refugees can also stimulate a significant flow of international health assistance, which can benefit host populations.

If research on the impact of refugee inflows on disease prevalence is contested, research on refugee flows on disease emergence is simply lacking. There is evidence that Lassa fever emerged in refugee camps located in non-endemic areas; however, World Health Organization experts attributed the likely cause of the outbreak to rodent populations, drawn by poorly stored grain rations, which provided a readily accessible food source, rather than to refugee “carriers” of the disease.<sup>309</sup> Despite the limited evidence, policymakers remain concerned that refugee flows may drive disease emergence and diffusion. Thus:

*Hypothesis 2b: larger numbers of refugees will increase the rate of disease emergence in the recipient (hosting) state*

### (iii) The interface between human and animal populations

The majority of emerging pathogens now affecting human populations developed from infections afflicting wildlife and domesticated animals:<sup>310</sup> nearly three quarters of emerging diseases are known to have their original in animal populations.<sup>311</sup> The interface between humans and animals is thus a powerful determinant pathogen evolution and transmission into human populations. In particular, the production of meat for human consumption— and the associated processes of animal hunting, raising, butchering— may have a particularly significant impact on zoonotic disease emergence.

Humans have hunted, killed and consumed wild animals since the earliest point in human evolution.<sup>312</sup> Even the advent of sedentary agriculture and the domestication of animals has not halted the consumption of wild animals, although in high-income, developed countries, consumption of domesticated animals now contributes the vast majority of dietary protein. In many poor countries, however, population growth combined with a

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<sup>307</sup> Paul B. Spiegel, “HIV/AIDS among Conflict-Affected and Displaced Populations: Dispelling Myths and Taking Action”, *Disasters*, Vol. 28, No. 3, 2004

<sup>308</sup> Paul B Spiegel, Anne Rygaard Bennedsen, Johanna Claass, Laurie Bruns, Njogu Patterson, Dieudonne Yiweza, Marian Schilperoord, “Prevalence of HIV infection in conflict-affected and displaced people in seven sub-Saharan African countries: a systematic review”, *Lancet*, Vol. 369, 2007

<sup>309</sup> Gayer et al., “Conflict and Emerging Infectious Disease”, *Emerging Infectious Diseases*, vol. 13, no. 11, p. 1626

<sup>310</sup> Specifically: terrestrial and flying animals, rather than aquatic.

<sup>311</sup> Taylor, Latham, and Woolhouse, *ibid.*

<sup>312</sup> Greger *ibid.*, p. 247



continuing preference for wild meats (or “bushmeat”) in both cooking and traditional medicine have led to an expansion in the catch of wild and indigenous animals. The specific animals harvested for protein vary by region, though in Central and Western Africa primate species are widely hunted and consumed.

In some areas, development has facilitated an expansion in the catch. For instance, in Central Africa, the penetration of roads into wild forestland has led to a sharp increase in the production of bushmeat.<sup>313</sup> Small arms proliferation has also played an important, though generally under-recognized role in facilitating bushmeat harvesting.<sup>314</sup> Wild animal catch and bushmeat production typically takes place within the informal economy, or, in the case of the illicit harvesting of protected species, the black market.<sup>315</sup> It is difficult to precisely estimate total volume of bushmeat production, although cross-national estimates suggest that annual production in Central Africa alone is in excess of 4 million tons, while production in the Amazon basin may exceed 5 million tons.<sup>316</sup>

Serologic data from monkeys caught for bushmeat in Cameroon found evidence that simian immunodeficiency virus (SIV), a retrovirus related to HIV, is present across a wide range of primate species, and that a substantial share of the primate population is infected; moreover, the wide distribution of viral subtypes suggests that bushmeat hunters may be exposed to multiple strains of SIV.<sup>317</sup> The close evolutionary distance between humans and primates increases the odds that a pathogen present in a primate can successfully adapt to and infect humans; evidence from ebola outbreaks suggests that the infection was introduced by hunting of wild chimpanzees and gorillas.<sup>318</sup> But primates are not the only risk. Data suggest that wild pigs (also widely hunted for human consumption) may serve as a reservoir for Ebola hemorrhagic fever; moreover, experimental evidence shows that pigs

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<sup>313</sup> Greger, *ibid.*, p. 247

<sup>314</sup> See for instance Jacques Pepin *The Origins of AIDS*, Cambridge University Press, 2011. Pepin notes that harvesting is more extensive in Cameroon than in neighboring areas of equatorial Africa, and traces the disjuncture to the League of Nations requirement that France place fewer restrictions on natives (including firearm ownership) in former German mandates than in the rest of its territories.

<sup>315</sup> Greg L. Warchol, “The Transnational Illegal Wildlife Trade” *Criminal Justice Studies*, Vol. 17, No. 1, March 2004

<sup>316</sup> Fa, J.E., Peres, C.A., and Meeuwig, J. 2002. Bushmeat exploitation in tropical forests: An intercontinental comparison. *Conserv. Biol.* 16,(PAGE). Greger, *ibid.* The problem of generating accurate data on criminal activity— both subnational and cross-national— is non-trivial, since the actors involved in the enterprise are trying as much as possible to obscure their activities, while authorities and other actors tracking criminal activities may have their own incentives to represent scale and location of the problem in particular ways. As Andreas and Greenhill aptly observe: “given the type of activity being measured, the quality of statistics is inherently suspect.” See Peter Andreas and Kelly M. Greenhill “Introduction: the Politics of Numbers”, in Andreas and Greenhill, eds., *Sex, Lies and Body Counts: The Politics of Numbers in Global Crime and Conflict*. Cornell University Press, 2010, p. 5

<sup>317</sup> Peeters et al. found serologic evidence of SIV in 13 of 16 sampled species, and in 16.6 percent of sampled primates. See Martine Peeters et al., “Risk to Human Health from a Plethora of Simian Immunodeficiency Viruses in Primate Bushmeat” *Emerging Infectious Diseases* Vol. 8, No. 5, May 2002, p. 456. See also: Marcia L. Kalish et al., “Central African Hunters Exposed to Simian Immunodeficiency Virus”, *Emerging Infectious Diseases*, Vol. 11, No. 12, December 2005.

<sup>318</sup> Greger, *ibid.*, p. 248. See World Health Organization (WHO). 2003. “Outbreak(s) of Ebola haemorrhagic fever, October 2001–July 2002” *Weekly Epidemiological Record* No. 78, pp. 223–228

are capable of transmitting a particularly virulent strain, Zaire Ebola, to primates<sup>319</sup> who may be killed, in turn, by bushmeat hunters. Wild rodents caught for food are also suspected to serve as a vector for zoonotic infectious diseases.<sup>320</sup>

The greatest risks generated by the bushmeat trade are borne by those who hunt and butcher wildlife; hunters are most directly exposed to wildlife and vectors, while those who butcher and prepare animal carcasses are at greatest risk of bloodborne infection.<sup>321</sup> Although bushmeat consumption, particularly of raw or undercooked meat, poses risks, they are less intense. Most bushmeat is consumed locally, but some is exported. Given that the primary risks relate to production, and that consumption is predominantly local, we would expect that:

*Hypothesis 3a: Greater production of bushmeat will generate higher rates of disease emergence*

A substantial share of zoonotic diseases are not directly transmitted from humans to wildlife, but instead emerge from wildlife to domestic animals, and then to human hosts. The majority of historically-salient temperate zoonoses, pathogens responsible for an enormous burden of human death and disease— including smallpox, influenza, measles and tuberculosis— emerged into human populations from domesticated animals.<sup>322</sup> The link between domesticated animals and zoonotic disease emergence appears to be more limited in tropical areas; however, a number of diseases that recently emerged in the tropics, such as Nipah virus and strains of highly pathogenic avian influenza, jumped to humans from domesticated rather than wild animals.<sup>323</sup> Viruses circulate more easily between animals with closer evolutionary links. Thus, avian influenza viruses naturally circulating within wild bird populations leap first to domesticated chickens and ducks. However, viruses can also leap across more distant animal populations: Nipah virus emerged in Malaysia after pigs in large-scale farms were infected by wild fruit bats.<sup>324</sup>

Qualitative and quantitative shifts in animal domestication and farming have dramatically altered the epidemiologic risk profile of animal farming. Quantitatively, human population growth and increasing demand for meat driven has driven an enormous expansion in the

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<sup>319</sup> Hana M. Weingartl, Carissa Embury-Hyatt, Charles Nfon, Anders Leung, Greg Smith, Gary Kobinger, "Transmission of Ebola virus from pigs to non-human primates", *Scientific Reports*, Vol. 2, Article 811, 15 November, 2012. See also: Matt McGrath, "Growing concerns over 'in the air' transmission of Ebola", BBC World Service, 15 November, 2012, retrieved at: <http://www.bbc.co.uk/news/science-environment-20341423>

<sup>320</sup> S.R. Pattyn. "Monkeypox virus infections" *Revue scientifique et technique (International Office of Epizootics)* Vol. 19 No. 1, 2000 p. 93

<sup>321</sup> Wolfe et al. 2005, *ibid.*, p. 1823

<sup>322</sup> Wolfe and Diamond, *ibid.* pp. 279-282

<sup>323</sup> Wolfe and Diamond, *ibid.*; Michael Greger "The Human/Animal Interface: Emergence and Resurgence of Zoonotic Infectious Diseases" *Critical Reviews in Microbiology*, Vol. 33, 2007; Richard J Coker, Benjamin M Hunter, James W Rudge, Marco Liverani, Piya Hanvoravongchai, "Emerging infectious diseases in southeast Asia: regional challenges to control", *Lancet*, Vol. 377, 2011, p. 602; National Intelligence Council 2000, *ibid.*

<sup>324</sup> Greger, *ibid.*, p. 246

production of animals for food, leading to increased numbers of larger farms. Qualitatively, a “livestock revolution” has shifted agriculture from low efficiency, low-input family farms to high-efficiency intensive, industrialized agriculture.<sup>325</sup> Intensive animal farming can pose a particularly severe risk for zoonotic disease emergence. Viral traffic between animals is facilitated by dense concentration, which in turn raises the rapidity with which viruses mutate, and adapt to animal hosts.<sup>326</sup> The Malaysian pig farm where Nipah virus first emerged was, perhaps unsurprisingly, one of the largest in the country.<sup>327</sup> Extended supply chains for meat, in particular the sale of live animals for butchering and consumption in urban areas, can raise the potential for an isolated emergence event in a rural area to travel to an urban core and spark an epidemic. As the Nipah virus crisis escalated, the Thai Minister of Public Health argued that “a hundred years ago, the Nipah virus would have simply emerged and died out; instead it was transmitted to pigs and amplified. With modern agriculture, the pigs are transported long distances to slaughter. And the virus goes with them.”<sup>328</sup>

Together, these trends may escalate the odds of disease emergence from wildlife into animal, and subsequently human, populations. Thus:

*Hypothesis 3b: Higher intensities of domesticated animal production will increase the disease emergence rate*

#### (iv) Urbanization

The distribution and concentration of human populations is a key factor in the emergence and diffusion of pathogens. The first historical epidemiological transition, or shift in human disease dynamics, occurred with the rise of the first human settlements. While some pathogens affecting humans could sustain transmission within small groups, many more virulent microbes which would have burned out in isolated human settlements could achieve sustained transmission cycles in larger communities, and spread across communities linked by more frequent patterns of contact.<sup>329</sup> The rise of larger cities increased the challenges of providing clean water and sanitation, further amplifying the risk that pathogens could be transmitted via human waste.<sup>330</sup>

Today’s mega-cities remain potential focal points for disease emergence and pandemic outbreaks. Some risks are infrastructural: especially in poor countries, populations living in

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<sup>325</sup> Pearson et al. 2005

<sup>326</sup> Greger, *ibid.*, p. 253, Pearson, J. et al. “Global risks of infectious animal diseases.” Council for Agricultural Science and Technology, Issue Paper No. 28, 2005

<sup>327</sup> Greger, *ibid.*, p. 246, Ludwig et al. 2003

<sup>328</sup> Michael Specter “Nature’s Bioterrorist”, *The New Yorker*, February 28, 2005; Greger, *ibid.* p. 252

<sup>329</sup> Ronald Barrett, Christopher W. Kuzawa, Thomas McDade, George J. Armelagos, “Emerging and Re-Emerging Infectious Diseases: The Third Epidemiologic Transition” *Annual Review of Anthropology*, Vol. 27, 1998, pp. 252-253. See also Cockburn “Infectious Diseases in Ancient Populations”, *Current Anthropology*, Vol. 12, No. 1; PW Ewald *Evolution of Infectious Disease*, Oxford University Press 1994.

<sup>330</sup> McNeill 1976, *ibid.*

informal and squatter settlements can lack access to clean water and sanitation.<sup>331</sup> Inadequate vector control and waste clearing can provide disease vectors—mosquitos, rats—with breeding grounds.<sup>332</sup> Murphy argues that “the mega cities of the tropics, with their lack of sanitary systems, serve as incubators for emerging zoonoses—they represent the most difficult zoonotic disease risks of the next century.”<sup>333</sup> While these risks are especially intense in mega cities in poor and developing countries, the emergence of SARS amidst the ultra high density housing of Hong Kong may indicate that the risk is not confined to poor countries; the sheer density of highly urbanized areas presents the potential for rapid viral transmission and adaptation in high-income areas as well.

The other risks generated by urban life are social. The process of urban in-migration can bring pathogens which were once isolated in rural areas into areas of higher population density, where they can more readily spread.<sup>334</sup> Just-in-time supply chains for food, especially meat, can lead to close epidemiological integration between urban and peri-urban areas and rural hinterlands; as a result, viral traffic into bushmeat hunters, or zoonotic emergence of diseases from wildlife into farm animals, may explode into urban epidemics. Avian influenza hotspots in Southeast and East Asia, as well as Nipah, appear to fit this pattern. Urban life is also typically accompanied by other social shifts that can facilitate disease emergence and transmission: broader and more flexible social networks, shifts in sexual mores, and higher densities of sex workers who may be at greater risk for contracting and spreading new pathogens.<sup>335</sup>

The confluence of infrastructural and social risks tied to urbanization, and particularly mega-cities and centers of ultra-dense human settlement, suggest that such regions may be focal points for disease emergence. This yields:

*Hypothesis 4a: Countries with greater shares of their population living in areas of ultra-high population density will experience higher rates of emergence*

If disease emergence is facilitated by the desperate conditions in urban slums, the potential for outbreaks could be even greater where governance collapse occurs alongside intense urban settlement. “Feral cities”, or metropolises in areas where state authority no longer have the capacity to provide basic governance and public services, could become focal points for new virulent diseases.<sup>336</sup> Such cities might remain integrated, albeit via informal and “dark” networks, to international currents of travel and trade, raising the potential for broader contagion and pandemic outbreak. Thus:

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<sup>331</sup> See Christine L. Moe and Richard D. Rheingans “Global challenges in water, sanitation and health” *Journal of Water and Health*, Vol. 4, Supplement No. 1, 2006; J.B. Isunju, K. Schwartz, M.A. Schouten, W.P. Johnson, M.P. van Dijk, “Socio-economic aspects of improved sanitation in slums: A review” *Public Health*, Vol. 125, No. 6, 2011

<sup>332</sup> Coker et al., *ibid.* p. 602

<sup>333</sup> Murphy, *ibid.*, p. 431

<sup>334</sup> Morse 1995, *ibid.*, p. 11

<sup>335</sup> Weiss and McMichael, *ibid.*, p. S75

<sup>336</sup> Richard J. Norton, “Feral Cities”, *Naval War College Review*, Autumn 2003, Vol. LVI, No. 4, pp. 98-100

*Hypothesis 4b: Fragile or failing states with greater shares of their population living in areas of ultra-high population density will experience higher rates of emergence*

(v) Habitat disturbance

Deforestation and habitat destruction appear to be linked to disease emergence. One estimate suggests that 15 percent of emerging diseases have a direct link with forestland, and many viruses that are now well-established in human populations may have originated long ago in forestlands.<sup>337</sup> Smallpox thought to have emerged as a consequence of forest-clearing for human settlement and agriculture.<sup>338</sup> A number of globally significant infectious diseases, such as HIV and dengue fever, also originally emerged from forestland, but are now spread via human to human transmission or through vectors.<sup>339</sup>

Deforestation may increase the odds of disease emergence through a variety of channels. One is the direct infection of forest workers. Two notable emerging viruses, Mayaro and Oropouche, both infected woodcutters who were clearing forests in the Brazilian Amazon. Farmers who settle along the edges of forestland, or on newly cleared land, may also come into contact with mosquitos and other disease vectors who can act as conduits for infection.<sup>340</sup> Animal population displacement is a second, and perhaps more common, mechanism. As forestland is cleared, animal populations that lose their natural habitat are forced to move, often in closer proximity to encroaching human settlements. The movement of wild fruit bats to populated areas has been linked to the emergence of Hendra virus in Australia,<sup>341</sup> and is implicated in the initial outbreak of Nipah in Malaysia. The impact of deforestation on disease dynamics might depend on the type of deforestation rather than its absolute magnitude: some forms of deforestation, such as clear-cutting, involve less potential contact between humans and wildlife, and might actually depress zoonotic emergence by wiping out ecosystems and animal reservoirs, while more restrictive and limited logging could increase exposure to more intact habitats.<sup>342</sup> Nonetheless, on balance, logging may both directly and indirectly increase human contact with animal disease reservoirs. As such:

*Hypothesis 5a: Deforestation will increase the rate of disease emergence*

Relatedly, agricultural production and the production of plant-based foodstuffs also involves significant disruption to the ecosystem. Land clearing, the introduction of irrigation which can attract vectors, and increased potential for domesticated and wild species to mix all potentially increase the odds of disease emergence, and indeed, a

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<sup>337</sup> B.A. Wilcox and B. Ellis, "Forests and emerging infectious diseases of humans" *Unasylyva: An International Journal of Forests and Forestry*, Vol. 57, vol. 224, 2006, p. 12

<sup>338</sup> McNeil, 1976, *ibid.*

<sup>339</sup> Willcox and Ellis, pp. 12-13

<sup>340</sup> Murphy, *ibid.*, p. 30

<sup>341</sup> Weiss and McMichael, *ibid.*, p. S73

<sup>342</sup> Wolfe et al., 2005, *ibid.* p. 1823

qualitative systematic review by Jones et al. (2013) found evidence that higher intensities of agrarian production have been associated with disease emergence.<sup>343</sup> As such,

*Hypothesis 5b: Higher intensities of agricultural land use will increase the disease emergence rate*

Lastly, the extension of road networks is thought to facilitate disease emergence, via two mechanisms.<sup>344</sup> When roads traverse virgin wilderness, their direct effects on disease exposure may mirror deforestation: workers may come into contact with wildlife and contract a novel agent, and the opening of the wilderness and facilitation of travel can rapidly increase the activity of hunters and others utilizing forest resources. But the impact of roads on disease dynamics are also expressed through increased connectivity. Roads can facilitate the spread of an emerging disease from an isolate outbreak to urban centers,<sup>345</sup> increasing the potential for a small outbreak to sustain and scale. The building of the Kinshasa Highway, which transected Central Africa and connected the Congo basin to Kenya, is implicated in outbreaks of ebola, as well as HIV.<sup>346</sup>

*Hypothesis 5c: Greater penetration by road networks will increase the rate of disease emergence*

### **3. Research design and data**

The primary empirical analysis of the impact of state fragility on disease emergence consists of a battery of negative binomial regression models. The models estimate the probability that a given country will experience an infectious disease emergence event (or multiple events) in a given year, conditional on a vector of covariates, including alternate explanatory variables for emergence linked to the various hypotheses identified above, as well as relevant statistical controls. The following sub-sections describe the data and construction of variables (with table 1 presenting descriptive statistics of interest), estimator selection, and present and discuss the results. A final sub-section presents and discusses a series of robustness checks.

#### Dependent variable

The dependent variable, *viral emergence*, is a count of viruses that emerge in a given country year. *Viral emergence* is constructed from a cross-national database of disease emergence events produced by Jones et al., which drew on reports from the scientific

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<sup>343</sup> Bryony A. Jones, Delia Grace, Richard Kock, Silvia Alonso, Jonathan Rushton, Mohammed Y. Said, Declan McKeever, Florence Mutua, Jarrah Young, John McDermott, and Dirk Udo Pfeiffer, "Zoonosis emergence linked to agricultural intensification and environmental change", *Proceedings of the National Academy of Sciences*, (early edition) 13 May 2013

<sup>344</sup> Airplane traffic is also a potent vector for pathogen spread, and has been clearly linked to the diffusion of emerging diseases such as West Nile and SARS. However, data to data do not suggest a clear role for air travel in sparking the initial emergence of a zoonotic pathogen.

<sup>345</sup> Greger, *ibid.*, p. 249

<sup>346</sup> Garrett 1994, *ibid.*, Elbe 2007, *ibid.*, p. 121

literature.<sup>347</sup> The dataset uses a high bar for the identification of an emergence of event: only reports of multiple cases (or clusters), identified in multiple peer-reviewed papers which provided geographic and temporal detail were accepted. The source data code each disease emergence event on a variety of dimensions, including the location, type of pathogenic organism (virus, bacteria, fungi, protozoa, and helminths), and whether the virus emerged from a wildlife host, domesticated host, or whether the source was unknown. Because viral zoonoses represent the most significant potential for pandemic risk from an emerging infectious disease, *viral emergence* comprises a count of viruses that emerged from wildlife hosts, or hosts of indeterminate origin.

### Independent variables

*Fragility* is an index measuring the capacity of state institutions; the extent to which the state “lacks the functional authority to provide basic security... the institutional capacity to provide basic social needs for (its) populations, and/or the political legitimacy to effectively represent (its) citizens at home and abroad.”<sup>348</sup> The index was constructed by the Canadian Indicators for Foreign Policy project (CIFP) from a broad set of open data on security, economic performance and resource mobilization, human rights protections and democratic participation.<sup>349</sup> *Fragility* is computed for each country year, and ranges from 1-9.

Two variables measure different forms of population displacement. *Refugees hosted* is an annual count of the number of refugees from other countries hosted within a given state (logged). *Internally displaced* measures the number of internally displaced persons: forced migrants within a given country who have not existed the state and received formal refugee status under the legal protections of the Refugee Convention or Protocol.<sup>350</sup> While *Refugees hosted* tests hypothesis 2b, that incoming refugee populations may import

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<sup>347</sup> The restriction to published scientific literature is in contrast to real-time reporting systems, such as ProMED, which rely on reports from civil society actors, medical personnel, etc. Kate E. Jones, Nikkita G. Patel, Marc A. Levy, Adam Storeygard, Deborah Balk, John L. Gittleman, and Peter Daszak, “Global Trends in Emerging Infectious Diseases,” *Nature*, Vol. 451, 21 Feb 2008, in particular, supplementary information sections 1.1 and 1.2.

<sup>348</sup> The fragility index is an unweighted average of three underlying measures: authority, legitimacy, and capacity. Authority captures the capacity of the state to maintain control over its territory, provide security to its citizens, and enforce legislation over its sovereign space. Legitimacy measures the state’s protection of civic, political, and human rights. Capacity the state’s capacity to generate and utilize productive resources to provide public services. It is measured through a mixture of indicators which track the resources available to the state (including economic growth, arable and forest land) as well as data that capture the provision of public services: adult literacy, education (enrollment and completion), and health (morbidity, mortality, and expenditure). See David Carment, Stewart Prest, and Yiagadeesen Samy, *Security, Development, and the Fragile State: Bridging the Gap between Theory and Policy*, 2009, and the CIFP Failed and Fragile States FAQ, 2006, retrieved at: <http://www4.carleton.ca/cifp/app/serve.php/1138.pdf>.

<sup>349</sup> The development of the CIFP index was supported by a set of Canadian government agencies: the Department of National Defence; the Department of Foreign Affairs and International Trade, and the Canadian International Development Agency (CIDA). The index is employed by policymakers as an early warning and policy planning tool.

<sup>350</sup> *Refugees hosted*, *internally displaced*, and *refugees*, were constructed from the Forcibly Displaced Populations Dataset, which is based upon the annual World Refugee Survey produced by United States Committee for Refugees and Immigrants (USCRI), and compiled by Monty G. Marshall, Center for Systemic Peace. See: <http://www.systemicpeace.org/inscr/inscr.htm>. On conceptual and legal distinctions between refugees and internally displaced persons, see “A Half-Century of International Refugee Protection: Who’s Responsible, What’s Ahead” *Berkeley Journal of International Law*, Vol. 18, 2000; and Arthur C. Helton and Eliana Jacobs, “What Is Forced Migration”, *Georgetown Immigration Law Journal* Vol. 13. 1998-1999.

viruses, *Internally displaced* tests hypothesis 2a, that forced migration impacts the potential for disease emergence within the affected state.

Several clusters of variables track different dimensions of the relationship between human populations and the natural environment. *Bushmeat* is a proxy measure for the harvesting of wild and indigenous animals for consumption. *Bushmeat* is compiled by summing two annual production statistics estimated by the FAO: the annual tonnage of wild game meat produced, and the annual tonnage of meat produced from indigenous animals.<sup>351</sup> Given that a significant share of wild animal harvesting, particularly of endangered and protected species, takes place within the informal economy and is traded via illicit networks, these figures should be considered a lower bound estimate.<sup>352</sup> *Bushmeat* is logged to control for scale effects. *Pigs*, also drawn from annual FAO production estimates, measures the total tonnage of domesticated pig meat produced each year (logged).

*Table 3.2: descriptive statistics*

Variable	Obs	Mean	Std. Dev.
Viral emergence	5076	0.004	0.069
Fragility	5076	4.844	0.94
Refugees hosted	5076	4.756	5.266
Internally displaced	5076	1.874	4.511
Bushmeat	4689	14.598	5.467
Pigs	4143	12.647	2.563
Agricultural intensity	4212	3.06	1.29
Deforestation	3196	1.477	2.235
Roads	4941	9.343	2.066
Rainforest population (%)	5076	1.965	6.726
Rainforest (cover %)	5076	7.043	19.623
High density population (%)	5076	6.208	19.258
Territory	5036	11.491	2.415
Population	5053	15.429	1.968
Viral richness	5022	42.769	4.052
Biodiversity	4941	8.083	17.057
Health system capacity	5076	2.777	1.298
Scientific research	5076	2.403	2.169

*Agricultural intensity* is an estimate of land-use intensity, defined as the portion of agricultural productivity attributable to human intervention into the environment (rather than climactic and soil factors.)<sup>353</sup> The scale, developed by Dietrich et al., is computed for

<sup>351</sup> The data are primarily drawn from annual statistics compiled by national governments, however the FAO supplements these data with its own estimates, and data from non-official sources. Data are drawn from: <http://faostat3.fao.org/home/>.

<sup>352</sup> Warchol, *ibid*.

<sup>353</sup> Human intervention, broadly conceived, could include the application of labor, technology, and capital to boost yields.



a range of crops representing a core foodstuffs, by subtracting the observed agricultural yield for a given crop from an estimated base yield; estimates were produced for gridded map cells, which were then aggregated to a national estimate, then normalized by region and averaged into a single national-level measure of land use intensity.<sup>354</sup> Deforestation measures annual forest loss (or gain), and is computed from data drawn from the United Nations Food and Agriculture Organization's (FAO) Global Forest Resources Assessment 2010.<sup>355</sup> The Forest Resources Assessment provides periodic estimates of total forest cover, which were used to estimate average annual forest loss (in thousands of hectares, logged). The underlying data for the assessment were produced using satellite imagery produced in several temporal cross-sections— 1990, 2000, 2005— from which FAO computed average changes in forest cover during the other portions of the time series.<sup>356</sup> Roads, which measures the total length of all roads was derived from the Global Roads Open Access Data Set, compiled by the Center for International Earth Science Information Network (CIESIN).<sup>357</sup>

A battery of variables track population size, distribution, national territory, and biome type. *Rainforest* measures the percentage of each country's land area that is covered in tropical rainforest.<sup>358</sup> *Rainforest population* indicates the percentage of each country's population that lives in a tropical rainforest climatic zone. *High density population* measures the percentage of each country's population that lives in areas where the population density is greater than 50,000 persons per square kilometer.<sup>359</sup> These data were drawn from the Population, Landscape, and Climate Estimates (PLACE) II dataset; all PLACE II data are provided in two temporal cross-sections, 1990 and 2000, which are used to estimate values across the remainder of the time series.<sup>360</sup>

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<sup>354</sup> Crops include: cassava, field peas, groundnut, maize, millet, rapeseed, rice, soybean, sugarbeet, sugarcane, sunflower, and wheat. The index was computed for the year 2000. See Jan Philipp Dietrich, Christoph Schmitz, Christoph Müllera, Marianela Fadera, Hermann Lotze-Campena, Alexander Poppa, "Measuring agricultural land-use intensity – A global analysis using a model-assisted approach." *Ecological Modelling*, 232, 2012. The variable is rescaled from approximately 1-7.

<sup>355</sup> Data retrieved from: <http://www.fao.org/forestry/fra/fra2010/en/>

<sup>356</sup> The primary source for the satellite data consists of imagery generated by the United States Geological Survey's Landsat Global Land Survey. For methodological information, see U.N. Food and Agriculture Organization, "The FRA 2010 Remote Sensing Survey: An Outline of Objectives, Data, Methods, and Approach" Forest Resources Assessment Program Working Paper No. 155, 2009. Retrieved at: <http://www.fao.org/docrep/012/k7023e/k7023e00.pdf>

<sup>357</sup> Center for International Earth Science Information Network (CIESIN)/Columbia University, and Information Technology Outreach Services (ITOS)/University of Georgia. 2013. Global Roads Open Access Data Set, Version 1 (gROADSv1). Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). <http://sedac.ciesin.columbia.edu/data/set/groads-global-roads-open-access-v1>

<sup>358</sup> Specifically, tropical rain forest with no dry season, greater than 60mm of rain in the driest month, and with an annual range temperature of less than 5 degrees centigrade.

<sup>359</sup> Derived from PLACE II (see above)

<sup>360</sup> Center for International Earth Science Information Network, Columbia University, 2007. National Aggregates of Geospatial Data: Population, Landscape and Climate Estimates Version 2 (PLACE II), Palisades, NY: CIESIN, Columbia University. Available at: <http://sedac.ciesin.columbia.edu/place>

<sup>361</sup> Drawn from the World Bank World Development Indicators. Retrieved at: <http://data.worldbank.org/indicator/SP.POP.TOTL>

*Population* is simply the total annual population of each country, logged to control for scale effects.<sup>361</sup> *Territory* measures the total landmass of each country in the panel, in square kilometers, also logged.<sup>362</sup>

The emergence of a pathogen in a particular place and time is mediated by the diversity and prevalence of the local microbial life, what Morse refers to as the “zoonotic pool” of potentially pathogenic agents circulating in animal populations. The diversity of the zoonotic pool is related to— and perhaps even primarily a function of— overall wildlife diversity and ecosystem complexity.<sup>363</sup> To control for this potential source of bias, several variables capture wildlife and microbial diversity. *Biodiversity* is a normalized index, ranging from 0–100, that measures the relative biodiversity richness of flora and fauna in each country.<sup>364</sup> An additional variable— *viral richness*— measures the number of viruses known infect humans in each country; this proxies for the size of the potential “zoonotic pool.”<sup>365</sup> *Viral richness* was constructed from data from the Global Infectious Diseases and Epidemiology Network (GIDEON), a database that tracks and provides up to date data on the presence of pathogenic microbes in each country.<sup>366</sup>

Finally, several variables control for potential biases introduced by spatial and temporal variation in disease surveillance and reporting capacity. Spatial variation is particularly likely to be correlated with state fragility, as the effectiveness of disease surveillance systems (monitoring for a case or cluster of cases, assessment, verification and reporting<sup>367</sup>) is constrained by overall institutional capacity, including the funding, human resources, and equipment available within ministries of health and local health systems. Unsurprisingly, poor and conflict-affected countries have weaker disease surveillance capacity, owing to limitations in tools, training, and the transmission of samples and health information data.

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<sup>362</sup> Drawn from the World Bank World Development Indicators. Retrieved at: <http://data.worldbank.org/indicator/AG.LND.TOTL.K2>

<sup>363</sup> Morse, 1995, *ibid.*, p. 7. See also: Stephen Morse, Examining the origins of emerging viruses. In: Morse SS, editor. *Emerging Viruses*, Oxford University Press; 1993, p. 10–28.

<sup>364</sup> The index measures the relative biodiversity for each country, based upon three factors: the number of species present, the proportion that are considered threatened, and the number of habitat types. See Kiran Dev Pandey, Piet Buys, Ken Chomitz, and David Wheeler, “Biodiversity Conservation Indicators: New Tools for Priority Setting at the Global Environment Facility” 2006. Retrieved from the World Bank, World Development Indicators, at: <http://data.worldbank.org/indicator/ER.BDV.TOTL.XQ>

<sup>365</sup> Only a subset of known viral agents infect mammals, including humans. As a robustness check, an alternate measure of viral richness, which tabulated the number of viruses known to have a mammalian reservoir, was also constructed and included in all models. No substantive differences were observed; results available upon request.

<sup>366</sup> Data retrieved from: <http://www.gideononline.com>. GIDEON data have been utilized in a number of studies of pathogen distribution; notably: Robert R. Dunn, T. Jonathan Davies, Nyeema C. Harris, and Michael C. Gavin, “Global drivers of human pathogen richness and prevalence” *Proceedings of the Royal Society, Biology*, Vol. 277, 2010, and Smith, K. F., Sax, D. F., Gaines, S. D., Guernier, V., Guegan, J. F. “Globalization of human infectious disease” *Ecology*, Vol. 88, 2007

<sup>367</sup> Penny Hitchcock, Allison Chamberlain, Megan Van Wagoner, Thomas V. Inglesby, and Tara O’Toole, “Challenges to Global Surveillance and Response to Infectious Disease Outbreaks of International Importance”, *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, Volume 5, Number 3, 2007, p. 207

However, a review of outbreak detection and analysis in fragile states found over half of outbreaks analyzed in a set of fragile states were initially detected not through routine analysis of surveillance data, but by notifications by health officials, or through ‘informal’ notifications by rumors, NGOs, and health workers.<sup>368</sup> Isolated instances of “viral chatter” are likely to be quite common, and to go undetected in poor countries with weak formal health systems. But localized epidemics are far less likely to go unrecorded, and weak surveillance is likely to lead to delayed verification and reporting rather than missing outbreaks altogether.<sup>369</sup>

Two variables control for distinct dimensions of reporting bias. *Health system capacity* measures the overall quality of a national health system, based upon qualitative and quantitative assessments of its infrastructure, pharmaceutical production and availability, budgetary resources, and the relative policy priority assigned to health issues.<sup>370</sup> The capacity measure ranges from 1 to 5, where 5 is excellent, and 1 is “unsuitable”; data were drawn from an assessment produced by the U.S. National Center for Medical Intelligence.<sup>371</sup> *Scientific research* measures the intensity of research in fields related to disease surveillance (epidemiology, microbiology, virology), using an index constructed from the frequency of scientific publications by nationals of each country in the panel.<sup>372</sup>

There is strong evidence of temporal variation in infectious disease surveillance. Surveillance, most notably in terms of the time to outbreak discovery and reporting, has improved markedly since the late 1990s. Research on the lag time between outbreak starts and discoveries suggests that improvement is rapid, on the order of 7% improvement in

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<sup>368</sup> Catherine Bruckner and Francesco Checchi “Detection of infectious disease outbreaks in twenty-two fragile states, 2000-2010: a systematic review” *Conflict and Health*, Vol. 5, No. 13, 2011

<sup>369</sup> For instance, in the case of the 1995 ebola hemorrhagic fever outbreak in Kikwit, Zaire, the principal surveillance failure was a delay in detection and reporting. See Snowden, *ibid.*, p. 13

<sup>370</sup> There are limited open data on the effectiveness of disease surveillance systems. World Health Organization member states are obligated under the 2005 International Health Regulations (IHR) to report their capacity to implement the IHR. These capacity data take two forms: a report to the WHO indicating whether a given country has implemented the IHR, or requires an extension to build capacity to do so, and self-assessments of core disease surveillance capacities (laboratory capacity, monitoring of zoonoses, reporting, response, etc.) captured via questionnaire completed by health ministry officials regarding country capacity in each area. The data on the overall state of each country’s implementation of the IHR are confidential, but capacity self-assessment scores are public. However, the latter are self-reported, which introduces potential sources of bias (Myanmar, for instance, gives its zoonotic surveillance a perfect rating), and a number of countries (ranging from Denmark to Somalia) have not submitted scores, or submitted scores in an incompatible reporting format. Given these limitations, I judge the IHR data currently available in the public domain unsuitable for quantitative analysis. See Julie E. Fischer and Rebecca Katz, “Moving Forward to 2014: Global IHR (2005) Implementation”, *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, Vol. 11, No. 2, 2013; and World Health Organization, “Implementation of the International Health Regulations (2005): Report by the Director-General” 2013.

<sup>371</sup> The assessment, presented as a global map, accompanied a report by the U.S. National Intelligence Council, *Strategic Implications of Global Health*, December 2008. Retrieved at: <https://www.fas.org/irp/nc/>

<sup>372</sup> To control for potential biases introduced by the construction of the dependent variable based upon scientific journal publications, I construct a measure of country-level scientific reporting capacity. The variable measures the frequency with which an author or co-author of an article in a set of journals—the *Journal of Infectious Disease*, *Clinical Infectious Disease*, *Infection*, and *Emerging Infectious Disease*—is from a given country, over the period 1980-2006. Data were generated via a web of science query. This approach follows Jones et al. (2008), but relies on a larger sample of scientific journals.

reporting time, per year, though improvements in reporting capacity vary by region.<sup>373</sup> This may reflect large global investments in building surveillance capacity, as well as the increasing presence of a wide variety international health actors— non-governmental research organizations, academic collaborations and research stations, to humanitarian organizations directly providing health services in outlying areas, bilateral and multilateral agencies—in developing countries, as well as increased normative and institutional pressure to report outbreaks. The rate of disease emergence is also increasing over time, likely in relationship to greater disturbance to ecosystems and increased human/wildlife interface.<sup>374</sup> To account for this secular trend, as well as potential secular trends in infectious disease emergence, all models include year dummy variables.

#### 4. Results and Discussion

The empirical analysis consists of a battery of random effects poisson regression models.<sup>375</sup> Poisson regression makes two core assumptions: the data are normally distributed, and events comprising the count are randomly distributed, with no dependence between the events. The first assumption holds, as the mean and variance of *viral emergence* are nearly identical. The assumption of non-dependence is reasonable, given that zoonotic disease emergence is stochastic, driven by interacting processes at the microbial level (mutation, selection, speciation), as well as at the level of the host and environment. While some environmental factors may heighten the probability that a pathogen will emerge in a particular place and time, the emergence of one pathogen does not impact the odds that another will emerge in the same area.

Coefficients are reported as incident-rate ratios. Incident-rate ratios capture relative differences in the estimated frequency of events. A score of 1.0 indicates that a one-unit change in an independent variable of interest has no estimated impact on the event arrival rate; 1.5 indicates an estimated 50% greater frequency in events; 0.05 a 95% lesser frequency, and so on.<sup>376</sup> The unit of analysis is the country-year. Table 3.3 presents the results.

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<sup>373</sup> Emily Chan, et al., “Global capacity for emerging infectious disease detection.” *Proceedings of the National Academy of Sciences*, Vol. 107, No. 50, 2010

<sup>374</sup> Jones et al., *ibid.*

<sup>375</sup> The dependent variable of interest, viral emergence, is measured as a count of discrete events. The count in this time series analysis is produced by aggregating individual emergence events into sum totals within each country year in the panel. Modeling event count data with ordinary least squares regression techniques can produce biased estimates of coefficients and incorrect standard error. See Gary King “Event Count Models for International Relations: Generalizations and Applications”, *International Studies Quarterly*, Vol. 33, No. 2, 1989. A fixed effects estimator would be preferable in that it addresses potential inference problems created by omitted variables that might have a time-invariant effects for each country in the panel. However, a fixed effects model cannot fit lines for countries that have no count. Estimating models in this fashion would essentially instead ask a different research question: among countries that *do* experience disease emergence, how does variation in state fragility (and other covariates) impact the estimated event arrival rate?

<sup>376</sup> Incident rate ratios are similar to odds ratios in that they report the estimated *relative* increase in event rate attributable to an increase in an independent variable of interest. They represent the estimated event occurrence rate within the unit-years (in this case, country years) “at risk” for an event to potentially occur. See Neil Pearce “What Does the Odds Ratio Estimate in a Case-Control Study?”, *International Journal of Epidemiology*, Vol. 22, No. 6, 1993, and Jun Zhang and Kai F. Yu. “What’s the Relative Risk? A Method of Correcting the Odds Ratio in Cohort Studies of Common Outcomes.” *Journal of the American Medical Association* Vol. 280, No. 19, 1998.

The reduced model (model one) includes the measure of state fragility, and a vector of covariates which control for biome, population distribution, territory, population size, wildlife and pathogen diversity, and proxies for disease surveillance capacity. Subsequent models sequentially add blocks of alternate explanatory variables. Model two introduces on refugees and internally displaced persons. Model three adds variables that capture agriculture, land-use intensity, and human/wildlife interface. Model four adds data on the density of human settlement. Model five adds data on other perturbations of the natural environment: road-building and deforestation. This additive approach allows us to assess the sensitivity of the results to model specification, and probe for potential downward bias introduced by multicollinearity. I address each hypothesis in turn; table 3.4 summarizes the evidence for and against for each hypothesis.

### State fragility

There is no evidence that fragile states are more likely to facilitate disease emergence; to the contrary, the battery of models strongly suggests that fragile states are far less likely to generate disease emergence events. Model one shows a negative and statistically significant relationship between *fragility* and *viral emergence*, controlling for disease surveillance capacity, and population, biome, and other covariates. Holding all other factors constant, a unit increase in state fragility is estimated to decrease the emergence rate by over 75 percent in the reduced model. This effect remains statistically significant ( $p < 0.01$ ), and grows in estimated scale, as other explanatory variables are added to the model. In the full model, a one point increase in fragility is estimated to decrease the emergence rate by over 95 percent. In short, there is strong evidence against hypothesis one, and against the conventional wisdom that fragile states are a particularly potent source of emerging diseases.

Table 3.3: Determinants of zoonotic virus emergence

	1	2	3	4	5
State fragility	0.251** (0.115)	0.168*** (0.076)	0.102** (0.074)	0.083** (0.064)	0.044* (0.054)
Refugees hosted		1.079 (0.065)	1.051 (0.056)	1.054 (0.055)	1.010 (0.115)
Internally displaced		1.094 (0.088)	1.158+ (0.094)	1.151+ (0.088)	1.179* (0.078)
Bushmeat			1.066 (0.056)	1.095+ (0.053)	1.133* (0.068)
Pigs			1.922** (0.469)	2.289*** (0.480)	3.264* (1.745)
Agricultural intensity			2.063+ (0.806)	2.171* (0.797)	2.404** (0.763)
High density pop.				1.069 (0.350)	1.126* (0.053)
Feral city				1.007 (0.080)	
Road length					2.462 (1.756)
Deforestation					1.085 (0.151)
Rainforest	1.001 (0.026)	1.001 (0.029)	1.005 (0.027)	1.004 (0.030)	0.987 (0.023)
Rainforest population	1.018 (0.030)	1.020 (0.034)	1.020 (0.032)	1.026 (0.036)	1.069* (0.029)
Area	1.318 (0.234)	1.257 (0.242)	1.800* (0.461)	2.019** (0.541)	1.636 (0.609)
Population	1.314 (0.237)	1.256 (0.241)	0.687 (0.226)	0.517+ (0.178)	0.273* (0.168)
Viral richness	0.989 (0.086)	0.975 (0.096)	1.057 (0.145)	1.052 (0.141)	0.977 (0.093)
Biodiversity	1.023** (0.007)	1.028** (0.009)	1.033*** (0.009)	1.036*** (0.009)	1.028* (0.011)
Health system capacity	0.935 (0.510)	0.761 (0.476)	1.271 (0.848)	1.263 (0.896)	0.753 (0.456)
Scientific reporting	0.966 (0.226)	0.967 (0.264)	0.417+ (0.222)	0.376+ (0.202)	0.394* (0.170)
Constant	0.000*** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)
Observations	4,871	4,871	3,453	3,453	2,275

Coefficients displayed as incident-rate ratios. Standard errors, clustered on country, appear in parentheses.  
 \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

What factors could account for this counterintuitive finding? First, it is important to recall that novel zoonotic agents unsuited to human hosts can exhibit startling virulence, and induce acute morbidity and mortality. Amidst the already elevated civilian mortality in fragile states from more routine communicable diseases (upper respiratory infections, diarrheal diseases),<sup>377</sup> it is probable that many of those who succumb to emerging infections perish before they can disseminate the disease. Various strains of hemorrhagic fevers such as Ebola variants and Marburg perhaps most directly illustrate this dynamic: although these agents have emerged sporadically amidst the violence and institutional vacuum of Central Africa, clusters of disease have generally tended to emerge in limited outbreaks that quickly burn out.<sup>378</sup> This mechanism is by no means universal—the case of HIV dramatically demonstrates that the rapid burn-out mechanism depends entirely on a viral agents' incubation period and the speed with which it produces acute illness—yet it is likely to be common.

### Population displacement

Population displacement has subtle and variegated effects on the potential for viral emergence. Contrary to the warnings that refugees can act as “conveyor belts” for disease, or that camps may act as focal points for emerging diseases, there is no evidence that countries that host refugees are at greater risk. The coefficient for *refugees hosted* is close to one, and is not statistically significant in any model specification. However, there is evidence that forced migration can elevate the risk of disease emergence within the affected country.<sup>379</sup> *Internally displaced* is positive in all model specifications, and statistically significant ( $p < 0.05$ ) in the full model. This is consistent with arguments that forced migrants may be at elevated risk, as they move through unfamiliar ecosystems and are forced to subsist on whatever foods can be locally acquired.

Scholars have argued that the adverse health impacts of forced migration are borne “not in the countries that the refugees exit, but in the state that they enter.”<sup>380</sup> However, one explanation for the divergent findings between internal and external population displacement is that the effect of forced migration on disease dynamics is pathogen-specific. There is some evidence that pathogens that are already well-adapted to human

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<sup>377</sup> Gayer et al., *ibid.*

<sup>378</sup> See “An Ebola Epidemic Simmers in Africa” *Journal of the American Medical Association*, Vol. 290, No. 3, 2003; Even when an ebola outbreak reached the heavily populated urban core of Kampala, Uganda in 2012, the disease claimed relatively few lives and did not broadly diffuse. See World Health Organization Global Alert and Response data on Ebola in Uganda, retrieved at: <http://www.who.int/csr/don/archive/country/uga/en/index.html>

<sup>379</sup> As an additional robustness check, all models that included *internally displaced* were estimated using *refugee outflows*, to rule out potential bias introduced by bias in the underlying data. Data on internally displaced persons—those who have essentially become “internal refugees” within their own country, forced from their homes but without the legal protections provided by the Refugee Convention or Protocol—is potentially subject to systematic downward bias. This is particularly so if governments involved in civil wars have a political interest in suppressing data on the scale of displacement, or the burden of displacement on specific social groups (such as minority populations suspected of supporting an insurgent group). However, internal displacement and refugee flows are related, as refugees who successfully make it across a national boundary begin as internally displaced persons. The high empirical correlation between data on internally displaced persons and refugee outflows (0.56) suggests that the latter metric is an effective proxy. Results available upon request.

<sup>380</sup> *Iqbal, ibid.*, p. 145



hosts can be unwittingly transferred by refugees to host populations. For instance, *tuberculosis bacillus* can remain dormant, but re-emerge when its host is stressed or in poor health, and can thus quietly transit across borders in an infected refugee.<sup>381</sup> Given that forcibly displaced populations are already at greatly elevated risk for mortality—from violence, insufficient food and water, and other more mundane microbial threats such as cholera—it is possible that infected forced migrants perish before spreading an emerging pathogen across borders.<sup>382</sup> With respect to emerging viruses, internally displaced persons should be seen as an at-risk population rather than a potential vector for transnational biological threats.

### Human / wildlife interface

The strongest predictors of *viral emergence* are related not to institutional stability, or to forced migration, but to food production and the interaction between humans and wildlife. There is consistent evidence linking the production of wild and indigenous meat with disease emergence, and thus support for hypothesis 3a. *Bushmeat* is positive in all model specifications, and is significant ( $p < 0.05$ ) in the full model. The substantive impact is non-trivial: higher rates of bushmeat production are associated with a 13 percent higher rate of disease emergence. These findings resonate with micro-level research on the sociology of disease emergence in Cameroon, which has found that bushmeat hunters contract zoonotic agents from close contact with wildlife.<sup>383</sup> That this relationship also holds at the cross-national level suggests that similar patterns obtain in other parts of the world. These results hold despite the fact that bushmeat production is likely significantly undercounted in official U.N. Food and Agricultural Organization data that attempt to track informal and (often) illicit meat production.

If the slaughter of wild animal species presents a risk for disease emergence, the mass production of livestock appears to be a more substantial hazard. The large-scale production of pigs, an animal with a physiology and immune system that closely resemble that of humans,<sup>384</sup> has been linked with the emergence of both novel viruses, such as Nipah, and the episodic emergence of highly pathogenic influenza strains. Cross-national data bear out this relationship, providing strong support for hypothesis 3b. Across a range of model specifications, pig production is statistically and substantively significantly associated with disease emergence. In the full model, each unit increase in *pigs*, measured as the logged tonnage of pig meat production, more than triples the estimated emergence rate ( $p < 0.05$ ).

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<sup>381</sup> Ibrahim M. Khan, Ulrich Laaser, “Burden of Tuberculosis in Afghanistan: Update on a War-stricken Country”, *Croatian Medical Journal*, Vol. 43, No. 2, 2002

<sup>382</sup> Waldman and Toole, *ibid.*

<sup>383</sup> Wolfe et al. 2005, *ibid.*

<sup>384</sup> “Porcine Immune System”, in Hans-Werner Vohr, ed. *Encyclopedia of Immunotoxicology*, Springer, 2005, XXII



## Urbanization and feral cities

Urban centers have been focal points for disease outbreaks for most of recorded human history, and are regarded as particularly vulnerable to emerging pathogens. There is modest evidence linking high population density with increased probability of viral emergence. *High density* is positive but not significant in model 4, where it appears alongside an interaction term capturing urbanization in fragile states. However, in the full model, the coefficient estimate is positive and significant ( $p < 0.05$ ), suggesting that for each percentage increase in population living in ultra-dense areas ( $> 50,000$  persons per square kilometer) increases the emergence rate by nearly 13 percent.

“Feral cities”, densely populated urban cores in fragile or crumbling states, are considered a particularly strong risk factor for disease emergence and global diffusion given their potential to incubate and facilitate the rapid spread of an emerging pathogen. To assess this theory, captured in hypothesis 4b, model 5 includes a variable, *feral city*, which interacts *high density* with *fragility*. The intuition is that higher rates of institutional fragility coupled with higher proportions of population living in ultra high-density areas will have a multiplicative effect on disease emergence. Despite the intuitive plausibility of this theory, there is no case evidence suggesting that urban centers contribute to disease emergence, nor do the cross-national statistical models provide any support: the coefficient for *feral city* is close to one, and not statistically significant.

## Habitat disturbance

The evidence regarding the relationship between habitat disturbance and ecosystem destruction is mixed. Although the coefficients for *roads* and *deforestation* are positive, neither variable reaches statistical significance either in the full model, or in alternate specifications; as such, I find no support for hypotheses 5a and 5c. These results should be evaluated cautiously, in light of the data limitations described above. Data on total road length (or, alternately, road length as a ratio of total national territory) are a useful proxy, but an ideal measure would provide data on roads traversing wilderness or forestland. Data on deforestation are derived from satellite sensor data, and provide an accurate measure of national forest cover; however, the data are only available from 1990 onward in a series of temporal cross-sections, from which annual estimates of forest loss can be interpolated. However, there is evidence of a strong relationship between intense agricultural land use and disease emergence, and thus strong support for hypothesis 5b. *Agricultural intensity* is positive and statistically significant in all model specifications; in the full model, a one unit increase in the land use intensity scale is estimated to more than double the emergence rate ( $p < 0.01$ ). Taken alongside the findings for both domesticated and wild meat production, these results suggest that various forms of agricultural activity— which have their own attendant impacts on ecosystems— have significantly greater impact on emergence than outright habitat disruption or destruction.

## Climate and biodiversity

Table 3.4: Robustness checks

	<i>Fragility</i>	<i>Internally Displaced</i>
	1	2
Viral emergence	-0.037 (0.069)	-0.135 (0.654)
State fragility		3.888*** (0.656)
Internally displaced	0.030*** (0.005)	
Bushmeat	-0.006 (0.007)	-0.047 (0.069)
Pigs	-0.043* (0.017)	-0.226 (0.233)
Agricultural intensity	-0.355** (0.132)	0.759 (1.503)
High density pop.	0.031 (0.020)	-0.066 (0.158)
Feral city	0.075 (0.053)	1.024+ (0.534)
Road length	0.004 (0.007)	0.012 (0.075)
Deforestation	0.007* (0.003)	0.034 (0.051)
Rainforest	-0.005+ (0.003)	-0.038 (0.050)
Rainforest population	-0.150*** (0.042)	-0.910+ (0.511)
Area	0.196*** (0.036)	0.306 (0.420)
Population	0.017+ (0.010)	0.205* (0.094)
Viral richness	-0.003 (0.002)	0.014 (0.019)
Biodiversity	-0.478*** (0.047)	2.093*** (0.498)
Health system capacity	-0.050+ (0.028)	-0.364 (0.306)
Scientific reporting	-0.006 (0.007)	-0.047 (0.069)
Constant	4.237*** (0.614)	-30.687*** (7.023)
Observations	2,275	2,275
R-squared	0.857	0.308

Standard errors, clustered on country, appear in parentheses.  
 \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

Lastly, we turn to the battery of biome, population, wildlife diversity, and territorial controls included in all of the statistical models. Although greater territorial cover by tropical forest does not by itself influence the emergence rate, there is some evidence that greater population density within this biome type does play a role. *Rainforest population* is positive in all models, and significant ( $p < 0.05$ ) in the full model. The coefficient estimate suggest that it plays a modest role: for each additional percentage a country's population living in wet rainforest, the estimates incidence rate for emerging diseases increases by 7 percent. There is stronger evidence linking *biodiversity* with disease emergence. Consistent with research by Dunn et al. and Jones et al., I find a positive association with biodiversity and disease emergence: each unit increase in *biodiversity* is associated with a 3 percent increase in the risk of emergence.<sup>385</sup> The coefficient estimates are stable across all models, and significant ( $p < 0.05$ ) in the full model. However, pathogen diversity—proxied by viral richness, and the viral richness in mammalian hosts—is not significantly associated with disease emergence. This suggests that attempts to predict the emergence of pathogens based on the (observed) diversity of viruses already circulating in human populations may provide little traction.

#### Additional robustness checks

Historical studies and quantitative analysis suggest that disease prevalence erodes institutional capacity, both over the short and long term.<sup>386</sup> Although the prevalence of known diseases does not have a clear bearing on the incidence of *emerging* diseases, the potential threat to causal inference is worth investigating. To do so, I estimated an additional battery of OLS-regression models, regressing state fragility scores on disease emergence events and relevant covariates and controls used in the primary analysis. As in the main analysis, year dummy variables were included to control for temporal trends, with robust standard errors clustered on country. The results are presented in table 3.4, column one. There is no effect of disease emergence on state fragility.

A second battery of models tested for an endogenous relationship between disease emergence and displacement. Disease outbreaks are capable of causing widespread fear and social disruption, and in some cases, outbreaks have sparked large-scale population displacement. Most recently, a 1994 outbreak of plague (*yersinia pestis*) in Surat, India, caused the flight of more than 500,000 people.<sup>387</sup> I addressed this potential threat to inference by estimating models with internal population displacement as the dependent measure, and *viral emergence* and covariates as right-hand variables. The results are presented in table 3.4, column two. Again, I find no statistically significant association. These results again provided evidence that disease emergence—as opposed to large-scale outbreaks of endemic pathogens, as in the case of Surat—is generally unlikely to spark major population displacement.

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<sup>385</sup> Dunn et al. 2010, *ibid.*, and Jones et al., 2008, *ibid.*

<sup>386</sup> Price-Smith, 2002 and 2009, *ibid.*

<sup>387</sup> National Intelligence Council, 2000, *ibid.*

## 5. Conclusion

In 1992 the U.S. Institute of Medicine released a landmark study on emerging infectious diseases, which argued that “...in the context of infectious diseases, there is nowhere in the world from which we are remote and no one from whom we are disconnected.”<sup>388</sup> In an era of deep global interconnection, emerging diseases can pose a potentially catastrophic transnational threat. There is a clear imperative to identify the potential sources and amplifiers of disease emergence.

The pace of disease emergence appears to be increasing. Surveying the evidence, David Quammen asks: “Why do such spillovers seem to be happening now more than ever? ...these are not independent events. They are parts of a pattern. They reflect things that we’re doing, not just things that are happening to us.”<sup>389</sup> What human actions, then, are driving the threat of viral emergence? In many parts of the world, rising emerging infectious disease risks have been paralleled by the increasing fragility of governing institutions that carry responsibility for securing public health and wellbeing. A host of organizations—sovereign states, multilateral agencies, think-tanks—have argued that these risks coalesce, and that fragile states pose a threat to global public health by “incubating” and proliferating dangerous infectious agents. This assertion is sometimes accepted on basis of a few—albeit compelling—pieces of anecdotal evidence: the emergence of deadly hemorrhagic fevers in ungoverned, conflict-affected areas of Uganda, Democratic Republic of the Congo, and West Africa; the explosion of HIV in these same areas.

In this chapter, I develop the first empirical analysis of the connection between state fragility and emerging viral agents, and used cross-national regression models to isolate the impact of corroding institutional capacity—and a host of other potential drivers—on disease dynamics. Strikingly, I find no evidence that fragile states are at greater risk for disease emergence; to the contrary, fragility is strongly and negatively associated with disease emergence, even when controlling for various forms of reporting bias. The strongest predictors of disease emergence in this analysis instead relate to the interface between humans and the natural environment: land use and the production of meat, both “bushmeat” and domesticated animals. Forced migration also appears to play a subtle role: internal population displacement significantly elevates the risk of disease emergence, but states that *receive* refugees are at no greater risk. The implication is that states afflicted by violence may suffer as well from elevated disease burdens, but are less likely to export their suffering to neighboring states.

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Table 3.5: Summary of findings

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<sup>388</sup> Joshua Lederberg, et. al. 1992, *ibid.*, p. V

<sup>389</sup> David Quammen “The Next Pandemic: Why It Will Come From Wildlife” Yale University Environment360 blog, 4 October, 2012, retrieved at: [http://e360.yale.edu/feature/quammen\\_the\\_next\\_pandemic\\_will\\_come\\_from\\_wildlife/2579/](http://e360.yale.edu/feature/quammen_the_next_pandemic_will_come_from_wildlife/2579/)

Hypotheses	Finding	Strength of evidence
Hypothesis 1: as state fragility increases, the rate of disease emergence increases	Rejected	Strong
Hypothesis 2a: population displacement increases the rate of disease emergence in the affected (sending) state	Supported	Moderate
Hypothesis 2b: larger numbers of refugees increase the rate of disease emergence in the hosting (recipient) state	Rejected	Strong
Hypothesis 3a: Greater production of bushmeat and indigenous meat generate higher rates of disease emergence	Supported	Moderate
Hypothesis 3b: Higher intensities of domesticated animal production increase the disease emergence rate	Supported	Strong
Hypothesis 4a: Countries with greater shares of their population living in areas of ultra-high population density experience higher rates of emergence	Supported	Moderate
Hypothesis 4b: Fragile or failing states with greater shares of their population living in areas of ultra-high population density experience higher rates of emergence	Rejected	Strong
Hypothesis 5a: Deforestation increases the rate of disease emergence	Rejected	Weak
Hypothesis 5b: Higher intensities of agricultural land use increase the rate of disease emergence	Supported	Strong
Hypothesis 5c: Greater penetration by roads increase the rate of disease emergence	Rejected	Strong

This analysis does not suggest that fragile states pose no risk to human health or well-being, or that they do not foster deadly pathogens. Some re-emerging diseases, such as polio and drug-resistant tuberculosis, have been strongly linked to areas affected by conflict and institutional collapse. Yet, with respect to novel zoonotic pathogens that have been linked to pandemic risk, the available evidence suggests that the risks have been over-stated.

The emergence of infectious diseases is governed by interactions within and among complex systems: genomic, environmental, social. It is impossible to predict with certainty when and where the next new, virulent pathogen will appear. But it is possible to make cautious and clear-eyed assessments of risk. Populations in fragile states suffer greatly from heavy disease burdens. They live shorter lives than people in well-governed, stable states, and face greater impairment from preventable diseases. Yet the evidence suggests that global public health threats will come from elsewhere: fast-developing middle-income countries, with rising land-use intensity and meat consumption. Vulnerable populations in weak states, as well as the wealthier parts of the globe, will be served by targeting disease surveillance accordingly.

## 4: Putting fragile states back together again

*Government has always been most stable  
where rulers and ruled believed that accepted standards are observed,  
that the government is legitimate.*<sup>390</sup>  
Reinhard Bendix

*Health is the first of all liberties.*<sup>391</sup>  
Henri Frederic Amiel

### Chapter Abstract

*If state fragility represents a humanitarian tragedy rather than a security threat, that renders the challenge of restoring and rebuilding state institutions no less challenging. For the past three decades, international actors have attempted to rebuild broken states along liberal democratic lines. The intuition underlying this approach is that reshaping governing processes can yield legitimate and sustainable order. This approach, however, has delivered results that are at best mixed, and heterodox approaches to institution-building emphasizing social contract theory—and the delivery of core public goods—have received increasing attention. This chapter presents the first empirical analysis of institutional reconstruction and legitimacy in a fragile post-conflict environment, drawing on population survey data from regions of Indonesia devastated by multi-generational violence. The results suggest that delivery of basic services, rather than processes of governance, play a far greater role in structuring perceptions of state legitimacy than is commonly acknowledged.*

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<sup>390</sup> Reinhard Bendix “The Mandate to Rule: An Introduction”, *Social Forces*, Vol. 55, No. 2, 1976, p. 242

<sup>391</sup> Henri Frederic Amiel, *Amiel's Journal*, Macmillan and Company, 1893, p. 104.

## 1. Introduction: institutional legitimacy as an escape from the “doom spiral”

Why do broken states tend to stay broken? Evidence suggests that positive feedback loops play a key role in pushing already weak institutions towards violent entropy.<sup>392</sup> Susan Rice describes this effect as the “doom spiral”, and argues that the secondary effects of war such as poverty and broken public services elevate the risk that an area will slip back into conflict.<sup>393</sup> The net effect, Brainard and Chollet argue, is that “once a country has fallen into the vortex, it is difficult for it to climb out.”<sup>394</sup> Repeated cycles of violence in a variety of contexts point to the scale of the challenge: archetypal fragile states and sub-regions—Somalia, the Eastern Democratic Republic of the Congo, Afghanistan—have remained locked in violence for decades, almost without interruption. Other weak states oscillate over time between violence and peace, without escaping a vulnerable and violent equilibrium state.

How do such feedback loops raise the risk that a country will slip back into violence? Research on civil war recurrence suggests a critical micro level mechanism: stress factors amplify incentives for individuals to take up arms, easing the recruitment challenges faced by armed groups.<sup>395</sup> Even with enormous flows of international assistance, many fragile states are unable to mitigate these secondary effects, particularly during the early periods where the risk of relapse is highest. Scholars and international institutions have thus increasingly come to emphasize the importance of building trust and state legitimacy, as a means of buying time for the difficult and longer-term processes of institution building and consolidation to unfold.<sup>396</sup>

The problem with this approach is that in fragile and post-conflict states, legitimacy is also in short supply. Widespread perceptions of institutional illegitimacy are often at the root of conflict. And war itself only worsens fear and mistrust of institutions.<sup>397</sup> The legacy of distrust can disrupt the potential for patience and citizen engagement precisely when these factors are most needed to secure near-term stability,<sup>398</sup> and foster long-term recovery.<sup>399</sup>

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<sup>392</sup> World Bank, *World Development Report 2011: Conflict, Security, and Development*. See also Paul Collier, Lani Elliott, Håvard Hegre, Anke Hoeffler, Marta Reynal-Querol, and Nicholas Sambanis, *Breaking the Conflict Trap: Civil War and Development Policy*, World Bank and Oxford University Press, 2003

<sup>393</sup> Susan E. Rice, “The Threat of Global Poverty”, *The National Interest*, Spring 2006, p. 81

<sup>394</sup> Lael Brainard, Derek Chollet, and Vinca LaFleur, “The Tangled Web: the Poverty-Insecurity Nexus”, pp. 1-5 in Brainard and Chollet, eds., *Too Poor for Peace? Global Conflict, Poverty, and Security in the 21st Century*, Brookings Institution, 2007, p. 4

<sup>395</sup> Barbara F. Walter “Does Conflict Beget Conflict? Explaining Recurring Civil War” *Journal of Peace Research*, Vol. 41, No. 3, 2004

<sup>396</sup> World Bank, *World Development Report 2011*, *ibid*. For a sobering analysis of the time necessary for institution-building, see Lant Pritchett, Michael Woolcock, and Matt Andrews “Capability Traps? The Mechanisms of Persistent Implementation Failure” Center for Global Development Working Paper No. 234, December 2010

<sup>397</sup> Michael Barnett, “Building a Republican Peace: Stabilizing States after War”, *International Security*, Vol. 30, No. 4, 2006, p. 93; Nat J. Colletta and Michelle Cullen, *Violent Conflict and the Transformation of Social Capital: Lessons from Cambodia, Rwanda, Guatemala, and Somalia*, World Bank, 2000

<sup>398</sup> Bendix *ibid*. p. 250

<sup>399</sup> Bruce Jones and Molly Elgin-Cossart “Development in the Shadow of Violence: A Knowledge Agenda for Policy” New York University Center on International Cooperation, 2011

The reconstruction of trust between citizen and state is thus a central concern, and international actors—both intervening states and multilateral organizations—have attempted to shore up peace by restoring popular confidence in governing institutions. Theoretical accounts of the sources of legitimacy emphasize its connection to both *process* and *outcomes*.<sup>400</sup> States are held to be legitimate if they provide mechanisms for substantive political participation; provide safety and security to citizens; render power-holders accountable and office-holders contestable in open elections; mitigate corruption and the arbitrary exercise of power, reduce social inequality, and effectively provide basic social services and welfare to the population.<sup>401</sup>

This rather long to-do list reflects the overall ambitions inherent in development and social transformation. This basic challenge inherent to what Pritchett and Woolcock call “Getting to Denmark” is challenging even in peaceful, low-income contexts, and daunting in violent, broken states.<sup>402</sup> As a result, debates have centered on the relative priority and sequencing of these various objectives, with accounts falling into two broad approaches: liberal and social-contract.

Liberal theories have exerted by far the greatest influence on policy and statebuilding practice.<sup>403</sup> Liberal statebuilding attempts to rapidly construct democratic institutions in the Western model: electoral democracy, the rule of law, free markets. The core intuition of this model is that liberal democratic governance is both the means and ends of statebuilding.<sup>404</sup> A contrasting approach, rooted in social contract theory, emphasizes the performance of the state as opposed to the procedural elements of governance.<sup>405</sup> The core intuition of this approach is that legitimacy is in an important sense transactional: it must be *earned* through signaling commitment on the part of rulers to uphold their end of the

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<sup>400</sup> Organization for Economic Cooperation and Development “Concepts and Dilemmas of State Building in Fragile Situations: From Fragility to Resilience” 2008;

<sup>401</sup> Derick W. Brinkerhoff, “Rebuilding Governance in Failed States and Post-Conflict Societies: Core Concepts and Cross-Cutting Themes” *Publication Administration Review*, Vol. 25, 2005, pp. 5-6

<sup>402</sup> Lant Pritchett and Michael Woolcock “Solutions when Solutions are the Problem: Arraying the Disarray in Development” *World Development*, Vol. 32, No. 2, 2004

<sup>403</sup> The dominance of the liberal approach reflects the model’s particular historical context. Statebuilding rose to international prominence with the end of the Cold War, and the emphasis on liberal democratic institutions—elections, free markets, the rule of law—flows from the overall dominance of these ideas in the international system. Alternative models, including republican and social-contract approaches, remain anchored in Western normative frameworks, but put forward starkly different policy prescriptions. See Barnett *ibid*.

<sup>404</sup> Most notably, see: Roland Paris, *At War’s End: Building Peace after Civil Conflict*, Cambridge University Press, 2004; Roland Paris, “Peacebuilding and the Limits of Liberal Internationalism,” *International Security*, Vol. 22, No. 2, 1997

<sup>405</sup> David Lake, “The Practice and Theory of U.S. State-Building,” *Journal of Intervention and State-Building*, Vol. 4, No. 3 2010

<sup>406</sup> In this account, governments that fail to meet their obligations face disenchantment and potential upheaval. See Stuart E. Eizenstat, John Edward Porter, and Jeremy M. Weinstein “Rebuilding Weak States” *Foreign Affairs*, Vol. 84, No. 1, 2004, p. 136



social bargain.<sup>406</sup> In most accounts, this signaling involves the provision of basic governance functions and services: security, justice, health.<sup>407</sup>

Despite strong—if contrasting—theoretical convictions among scholars, relatively little is known about how to go about rebuilding trust and institutional legitimacy.<sup>408</sup> Empirical research on the sources of legitimacy is fragmented and anecdotal, especially in the fragile and post-conflict contexts where better evidence is most urgently needed.<sup>409</sup> To date, analyses of statebuilding successes have largely focused on cross-national comparisons, taking the country as the unit of analysis, and focusing on the impact of statebuilding on outcomes such as the resumption of conflict, or the integrity of democratic institutions over the medium to long-term.<sup>410</sup>

Yet if legitimacy is a critical intervening variable, then examining terminal outcomes alone is not sufficient. We must also understand the factors that structure popular perceptions of legitimacy, which requires a focus on micro-foundations rather than macro outcomes. In this chapter, I present the results of the first empirical analysis of state reconstruction and legitimacy, using population survey data. The core finding of this analysis is that the State's delivery on the social contract matters great. In particular, the delivery of basic services plays a larger role in structuring perceptions of legitimacy than is commonly acknowledged in liberal theories of peacebuilding and post-conflict reconstruction. In particular, security and basic public health appear to play important roles in restoring perceptions of state legitimacy.

The chapter proceeds as follows: section two examines legitimacy in greater depth. I analyze liberal and social contract theories of institutional legitimation, and then derive a set of testable propositions for each. Section three presents the specific case analyzed in this chapter, Aceh, Indonesia. Section four outlines the data and empirical strategy. Section five presents the analysis and results. Section six concludes.

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<sup>407</sup> Social contract approaches to reconstruction have also been widely associated with contemporary counterinsurgency theory, which emphasizes the importance of core service delivery as a foundation for state legitimacy. See D. Michael Shafer, "The Unlearned Lessons of Counterinsurgency," *Political Science Quarterly* Vol. 103, No. 1 19881; Robert R. Tomes, "Relearning Counterinsurgency Warfare," *Parameters* Vol. 34, No. 1 2004; David C. Gompert et al., *Reconstruction under Fire: Unifying Civil and Military Counterinsurgency*, Rand Corporation 2009

<sup>408</sup> See notably Jennifer A. Widner "Building Effective Trust in the Aftermath of Severe Conflict" in Robert I. Rotberg ed. *When States Fail: Causes and Consequences*, Princeton University Press, 2004

<sup>409</sup> Margaret E. Kruk, Lynn P. Freedman, Grace A. Anglin, and Ronald J. Waldman "Rebuilding health systems to improve health and promote statebuilding in post-conflict countries: A theoretical framework and research agenda" *Social Science & Medicine*, Vol. 70, 2010, p. 94

<sup>410</sup> Michael W. Doyle and Nicholas Sambanis, "International Peacebuilding: A Theoretical and Quantitative Analysis", *The American Political Science Review*, Vol. 94, No. 4, 2000. See also David A. Lake and Christopher J. Fariss "Why International Trusteeship Fails: The Politics of External Authority in Areas of Limited Statehood" *Governance*, forthcoming 2014

## 2. Rebuilding broken states: theoretical models and applied strategies

Krause and Jütersonke argue that post-conflict reconstruction has become “the ‘core business’ of the international humanitarian and development community.”<sup>411</sup> Over three decades of international experience reconstructing fragile and failed states, two primary theories of institutional performance and legitimation have come to predominate the field. In this section, I outline the key elements liberal and social contract statebuilding, and develop a set of testable hypotheses for each. I begin by introducing the concept of institutional legitimacy.

### Unpacking institutional legitimacy

What does it mean to say that an institution is legitimate? An overarching definition, advanced by Suchman, holds that an institution is legitimate if there is “a generalized perception or assumption that (its actions) are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.”<sup>412</sup>

This definition points to three basic qualities of institutional legitimacy. Legitimacy is *subjective*, rooted in judgment based upon a set of normative criteria. It is *relational* in character; that is, not inherent to an object, but intersubjective.<sup>413</sup> Finally, legitimacy, and the perceptions and judgments that underlie it, are *dynamic*, rather than static. These characteristics have direct implications for how legitimacy should be operationalized, measured and tested, which I explore below in section four.

The fundamental function of governing institutions is to aggregate and deploy power.<sup>414</sup> Bendix suggests that a ruler is legitimate if it has a “mandate to rule.” That is, if it has the acknowledged right to hold and use power.<sup>415</sup> The mandate conferred by institutional legitimacy in turn limits the need to deploy the other primary instrument of social organization, coercion.<sup>416</sup> Although the mandate to rule is often framed in binary terms—an institution is declared to be legitimate, or illegitimate—inasmuch as legitimacy reflects an aggregation of individual, private judgments, it should be considered as a matter of

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<sup>411</sup> Keith Krause and Oliver Jütersonke, “Peace, Security and Development in Post-Conflict Environments”, *Security Dialogue*, Vol. 36, No. 4, 2005

<sup>412</sup> Mark Suchman, “Managing Legitimacy: Strategic and Institutional Approaches,” *Academy of Management Review*, Vol. 20, No. 3 1995, p. 574

<sup>413</sup> As I I note below, this point is contested by some liberal theorists, who strongly link legitimacy to institutional design and structure.

<sup>414</sup> Robert H. Bates *Prosperity and Violence: The Political Economy of Development*, W. W. Norton and Company, 2001

<sup>415</sup> See Bendix, *ibid*.

<sup>416</sup> See Ian Hurd “Legitimacy and Authority in International Relations”, *International Organization*, Vol. 53, No. 2, 1999, p. 381. Hurd includes self-interest as a third mechanism of control, although he notes that self-interest, legitimacy, and coercion are ideal types, and that in a variety of power relationships and contexts, they cannot be easily decoupled. By contrast, Levi develops the concept of “quasi-voluntary” compliance; such compliance can be selected by individual agents, who also accept that non-compliance can be punished by those with authority. Levi suggests that quasi-voluntary compliance is commensurate with legitimacy, and further that it is located between the poles of coercion and normative acceptance. See Margaret Levi, *Of Rule and Revenue* University of California Press, 1988, pp. 54-55

*degree*. The more people believe that the state has the right to maintain and use power, the more legitimate the institution.<sup>417</sup>

Institutional legitimacy has two strata: the legitimacy of the state's institutional framework, and the legitimacy of a particular ruler or regime that occupies the state at a moment in time.<sup>418</sup> The primary targeting of statebuilding interventions is to shore up the first, more fundamental stratum: to restore the legitimacy of the state's institutions, identity, symbols, and processes by which political power is aggregated, contested, and employed, rather than a particular ruler or regime.

### Liberal and social-contract models for rebuilding institutional legitimacy

Contemporary efforts to remake failed states have unfolded during a period of Western political pre-eminence. As a result, post-conflict reconstruction and statebuilding have largely worked within a normative framework inherited from advanced Western states.<sup>419</sup> The key components of this framework are the basic elements of liberal democracy: competitive elections, free markets, rule of law.<sup>420</sup>

The transmission of liberal ideals via peacebuilding began in earnest with the fall of the Soviet Union and the end of the Cold War.<sup>421</sup> At the start of the new millennium, liberalism was "the only conception of statehood to be accorded legitimacy" by the dominant West.<sup>422</sup> Over this span of time liberal peacebuilding also evolved, from relatively brief bursts of activity, aimed at facilitating a rapid transition through enforced peace and managed elections, to more extended interventions aimed at building governance institutions.<sup>423</sup>

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<sup>417</sup> See Bruce Gilley "The meaning and measure of state legitimacy: Results for 72 countries" *European Journal of Political Research*, Vol. 45, 2006, p. 500

<sup>418</sup> As Calvert argues, the state differs from the regime in that it is enduring and independent: simultaneously a juridical construct with an independent legal personality, as well as a sociological construct with an identity that is distinct from the government that is in power at any given point. See Peter Calvert, *The Process of political succession*, Macmillan 1987, p. 248.

<sup>419</sup> Jennifer Milliken and Keith Krause "State Failure, State Collapse, and State Reconstruction: Concepts, Lessons and Strategies", *Development and Change*, Vol. 33 No. 5, 2002, pp. 757-758

<sup>420</sup> Edward Newman, Roland Paris, and Oliver P. Richmond "Introduction", in Edward Newman, Roland Paris, and Oliver P. Richmond, eds *New Perspectives on Liberal Peacebuilding*, United Nations University, 2009, p. 1. A canonical definition of the term "peacebuilding", provided by Kofi Annan, underscores both the goal of the enterprise and the significant degree of vagueness regarding its actual programmatic content. In Annan's formulation, peacebuilding consists of "actions undertaken at the end of a conflict to consolidate peace and prevent a recurrence of armed confrontation." See "The Causes of Conflict and the Promotion of Durable Peace and Sustainable Development in Africa" Report of the Secretary-General to the Security Council, S/1998/318, 1998

<sup>421</sup> Roland Paris, "International peacebuilding and the 'mission civilisatrice'", *Review of International Studies*, Vol. 28, 2002, pp. 641-642

<sup>422</sup> Christopher Clapham "The challenge to the state in a globalized world" *Development and Change* Vol. 33 No. 5 2002

<sup>423</sup> Christian Eric Ford and Ben Oppenheim "Neotrusteeship or Mistrusteeship? The 'Authority Creep' Dilemma in U.N. Transitional Administrations," *Vanderbilt Journal of Transnational Law*, Vol. 41, No. 1, 2008 pp. 65-70

The results of liberal peacebuilding have not matched its ambitions for rapid recovery in fragile states.<sup>424</sup> Multiple countries have slid back into violence, both organized conflict and anomic unrest. Institutions have performed poorly at providing basic services, leading to lagging health, economic, and social outcomes despite large investments. These experiences, along with the failure of the liberal dimensions of statebuilding in legitimating institutions in Afghanistan and Iraq, have helped revive a competing model for institution-building and recovery, rooted in social contract theory, which stresses the delivery of basic social services as a means of legitimation.<sup>425</sup>

The basic intuition underlying the social contract model is that social services and human development outcomes comprise the core bargain binding individuals to institutions.<sup>426</sup> Weber and Jentleson argue persuasively that social services and social outcomes matter in structuring perceptions of legitimacy. And, further, that the ability of governments to deliver those outcomes matters most where the stakes are highest: “people in countries with mass poverty, prevalent disease, and other pressing human needs are looking to be protected not just from government and from power but also by government and given some of what they need by power. Legitimacy depends on performance, not just process.”<sup>427</sup> This argument does not suggest that process is irrelevant, but instead that the right governance processes are not sufficient, if they don’t also deliver.

The liberal and social contract approaches to statebuilding are ideal types, and to a large extent debates over the fundamental means of legitimation are to do with timing, and the resources and prioritization accorded to service delivery, rather than a strict tradeoff between liberalization and service provision.<sup>428</sup> However, as Fukuyama notes, the emphasis accorded to service provision has varied widely over time, while the emphasis on liberal democratic institutions has remained basically fixed. Indeed, during the 1990s, policy guidance was heavily-tinged by the “Washington Consensus”, which implied fiscal austerity and a retraction rather than expansion of state service provision.<sup>429</sup> During this period, process was viewed as both necessary *and* sufficient. Now, the consensus is far from settled.

Below, I outline discrete components of each model of statebuilding, and develop a set of testable propositions for the sub-components of each model of the liberal and social contract models.

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<sup>424</sup> Paris 2002, *ibid.*; Barnett 2006, *ibid.*; see also Roland Paris *At War's End: Building Peace After Civil Conflict*, Cambridge University Press 2004

<sup>425</sup> Lake 2010, *ibid.*

<sup>426</sup> *ibid.*

<sup>427</sup> Steven Weber and Bruce W. Jentleson, *The End of Arrogance: America in the Global Competition of Ideas*, Harvard University Press, 2010, p. 67

<sup>428</sup> Lake, 2010, *ibid.*

<sup>429</sup> Francis Fukuyama “The Imperative of Statebuilding”, *Journal of Democracy*, Vol. 15, No. 2, 2004, pp. 19-21

## *Liberal statebuilding*

Liberal peacebuilding represents the dominant approach to reconstructing broken states, employed in contexts from El Salvador at the outset of the post-Cold War period, to the recent American occupations of Afghanistan and Iraq. There is no single template for liberal peacebuilding embraced by international actors. Instead, Western and international organizations have cohered around a broad normative and policy framework, which is executed on the ground by semi-synchronized swarm of international actors and interventions.<sup>430</sup> As Paris argues, the rise of liberal peacebuilding represents the “the globalisation of a particular model of domestic governance—liberal market democracy—from the core to the periphery of the international system.”<sup>431</sup>

### (i) Electoral democracy

Elections have become perhaps the most visible instrument used by international actors seeking to stabilize and reconstruct fragile states.<sup>432</sup> The symbolic importance and operational emphasis given to elections within post-conflict transitions reflects a strong normative commitment to democracy within international institutions and Western governments. It also reflects a broad assumption that the *process* of transiting through an election will support healing and provide an important legitimating and stabilizing effect during the delicate post-conflict period.<sup>433</sup> International actors argue that in the short term, elections provide a recognized and broadly acceptable means for settling who governs,<sup>434</sup> and in the long term, help to consolidate democratic processes as the mechanism for successive, stable political transitions.<sup>435</sup> The assumption is that embedding citizen choice will confer legitimacy on state institutions more broadly.

Liberal theory suggests that, particularly where the relationship between citizen and state has been ruptured by abuse or violence, elections can confer legitimacy by giving citizens power and choice. Moreover, the intense media reporting of election processes may help to signal and import international norms regarding the legitimating properties of democracy to citizens in broken states.<sup>436</sup>

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<sup>430</sup> Barnett, *ibid.*, p. 88

<sup>431</sup> See notably: Paris 2002, *ibid.* On modernization theory: Nils Gilman, *Mandarins of the Future: Modernization Theory in Cold War America*, Johns Hopkins Press, 2007

<sup>432</sup> Marina Ottaway describes the overarching model as “democratic reconstructionism.” See Marina Ottaway, “Promoting Democracy After Conflict: The Difficult Choices” *International Studies Perspectives*, Vol. 4, No. 3, 2003

<sup>433</sup> Larry Diamond, “Promoting Democracy in Post-Conflict and Failed States” *Taiwan Journal of Democracy*, Vol. 2, No. 2 2006; U.K. Department for International Development, “Why we need to work more effectively in fragile states” 2005, pp. 7-8, U.S. Agency for International Development, “Fragile States Strategy”, PD-ACA-999, 2005, pp. 3-4

<sup>434</sup> Relatedly: international donors use elections to confer legitimacy on new government, in order to justify the transfer of aid funds.

<sup>435</sup> Krishna Kumar “Postconflict Elections and International Assistance” in Krishna Kumar, ed, *Postconflict Elections, Democratization, and International Assistance*, Lynn Rienner Publishers, 1998, p. 5

<sup>436</sup> Paul Collier, *The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It*, Oxford University Press, 2007, p. 147

Leaders in fragile states have—in the main—accepted elections as a necessary element of reconstruction and transition processes.<sup>437</sup> This may reflect a broader normative shift towards representative democracy as a means of legitimating authority.<sup>438</sup> It may also reflect leaders’ calculation that at least the *trappings* of democracy are necessary to underline legitimacy. Even when supported by international election monitors, the typical weakness of electoral machinery in fragile states gives leaders and factions wide latitude to cheat, intimidate, and otherwise attempt to subvert elections, gambling that even a flawed process will still confer power and legitimacy.<sup>439</sup>

Scholarly attention has largely focused on whether elections work to restrain future violence.<sup>440</sup> The impact on elections on institutional legitimacy has received far less attention, and there is little evidence on whether such processes build trust in the basic framework of the state.<sup>441</sup> If liberal theory is correct, we should observe a positive relationship between citizen engagement in democratic processes, and perceptions of institutional legitimacy:<sup>442</sup>

*Hypothesis 1: Political engagement via electoral democracy will yield stronger perceptions of state legitimacy*

#### (ii) Economic liberalization

Fragile states’ economies are shattered by legacies of war and institutional distortion. The formal sector is often contorted by a combination of tight regulation and weak enforcement mechanisms, which combine to create opportunities for evasion and arbitrage, and facilitate the development of illicit economies. Property rights and

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<sup>437</sup> Some, of course, do so cynically. But as Hyde argues, this fact only underscores the broad penetration of liberal democratic norms: even leaders opposed to elections understand the consequences of bucking them. See Susan D. Hyde *The Pseudo-Democrat’s Dilemma: Why Election Monitoring Became an International Norm*, Cornell University Press, 2011

<sup>438</sup> See David Carment, Stewart Prest, and Yiagadeesen Samy, *Security, Development, and the Fragile State: Bridging the Gap Between Theory and Policy*, Routledge, 2010, pp. 89.

<sup>439</sup> In this vein, Carment et al. note that nearly all states at least *claim* to represent the views and needs of their citizenry. Carment et al., *ibid.* Even clearly non-democratic regimes regularly hold elections, and widely trumpet comically high rates of participation when the end result of the elections is rarely in doubt. North Korea reported 100% turnout in its 2003 National Assembly elections, while Iraq held presidential elections in 1995, offering voters two choices: Yes for Saddam Hussein, or no—with the “no” vote widely perceived to invite government persecution. See Susan D. Hyde “International Dimensions of Elections” in Nathan Brown, ed. *Dynamics of Democratization*, Johns Hopkins University Press, 2011; and more generally Hyde 2011, *ibid.*

<sup>440</sup> Robust democratic institutions are designed to distribute and constrain power, so that winners cannot abuse their power and punish former enemies, and losers still retain a stake in the system and can continue contest power within legal frameworks. There is some evidence that the weakness of new democratic institutions may fail to contain winners, and instead elevate the risk of relapse into violence. See Thomas Edward Flores and Irfan Nooruddin “The Effect of Elections on Postconflict Peace and Reconstruction”, *Journal of Politics*, Vol. 74, No. 2, 2012

<sup>441</sup> Lakhdar Brahimi—the former U.N. Special Representative of the Secretary General to Iraq and Afghanistan—notes that elections are not a panacea, and argues that in the case of Afghanistan, elections in 2009 damaged rather than supported institutional legitimacy. See World Bank WDR 2011, p. 165

<sup>442</sup> There is an obvious endogeneity problem, in that people may only participate in elections if they perceive the institutional framework to be legitimate. I address this issue in section five.

commercial law are weak or under-enforced.<sup>443</sup> Perhaps more importantly, powerful elites can use their influence over weak institutions to dominate both formal and informal sectors. As Rotberg puts it: “the privilege of making real money when everything else is deteriorating is confined to clients of the ruling elite or to especially favored external entrepreneurs.”<sup>444</sup> The restriction of economic opportunity to particular groups—political elites, factions, or clientilistic networks—can create intense popular grievances which can in turn weaken the legitimacy of the state and spark unrest. The Arab Spring was, improbably, launched by the self-immolation of Mohamed Bouazizi, a Tunisian fruit seller outraged at the lack of economic opportunity and strict enforcement of stifling laws by local police.<sup>445</sup>

International actors view reconstruction and statebuilding processes as offering an unusual opportunity to accelerate liberal economic reforms.<sup>446</sup> Most commonly, international institutions have used aid conditionality as a “carrot” to induce local political elites to implement macroeconomic and regulatory reforms: privatization; the removal of tariff barriers; the removal of currency controls to facilitate flows of foreign direct investment and trade.<sup>447</sup>

More recently, international donors and organizations have focused on the “end-user” of economic policy, and pressed for reforms which would have more immediate implications for citizens’ access to economic opportunity. USAID, for instance, has called for reforms to ensure that financial services are “widely accessible and reasonably transparent,”<sup>448</sup> while international organizations have focused on reforms to commercial law, in order to ensure that contracts and property rights are effectively enforced.<sup>449</sup> These efforts dovetail with broader attempts to purge institutions of corruption, particularly rent-seeking by front-line bureaucrats responsible for licensing businesses and awarding contracts. The centrality of liberal economic reforms yield hypothesis two:

*Hypothesis 2: Perceptions that economic competition is open and fair will lead to increased state legitimacy*

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<sup>443</sup> Paul Collier “Postconflict Economic Policy” in Charles T. Call and Vanessa Wyeth eds. *Building States to Build Peace*, International Peace Institute and Lynne Rienner Publishers 2008, pp. 106-110

<sup>444</sup> Rotberg 2003, *ibid.*, p. 8

<sup>445</sup> Kareem Fahim “Slap to a Man’s Pride Set Off Tumult in Tunisia”, *The New York Times*, 21 January, 2011. Retrieved at: <http://www.nytimes.com/2011/01/22/world/africa/22sidi.html>. See also Rania Abouzeid, “Bouazizi: The Man Who Set Himself and Tunisia on Fire” *Time Magazine*, 21 January, 2011. Retrieved at: <http://content.time.com/time/magazine/article/0,9171,2044723,00.html>.

<sup>446</sup> Collier 2008, *ibid.*

<sup>447</sup> James K. Boyce, ed. *Economic Policy for Building Peace: The Lessons of El Salvador*, Lynne Rienner Publishers 1996; Paris 2002, *ibid.*, p. 644; James K. Boyce “Beyond Good Intentions: External Assistance and Peace Building” in Shepard Forman and Stewart Patrick eds. *Good Intentions: Pledges of Aid for Postconflict Recovery*, Lynne Rienner Publishers 2000, p. 375.

<sup>448</sup> U.S. Agency for International Development, *ibid.*, p. 4

<sup>449</sup> Collier 2008, *ibid.* p. 108

### (iii) Rule of law

The third plank of liberal statebuilding focuses on establishing what one commentator has described as the “holy grail” of governance and development: the rule of law.<sup>450</sup> Although rule of law is often invoked by policymakers, there is no agreement on what the term means in practice. Conceptions range from “thin” formalistic accounts which emphasize that laws must be general in scope and predictable, such that the legal implication of action is clear; and “thick” accounts, which argue that rule of law must specify and protect individual rights and potentially require government to enhance the lives of citizens.<sup>451</sup> Carothers puts forth a common-sense formulation that captures Western policymakers’ broad intent when invoking the rule of law: a condition in which laws are broadly understood, and equally applicable to all, from elites, to bureaucrats, to citizens and small business owners.<sup>452</sup>

The behavior of front-line bureaucrats representing the state—and in particular, the degree to which they discharge their duties honestly, fairly, and accountably—is thought to have direct and immediate impacts on public perceptions of general institutional legitimacy.<sup>453</sup> More broadly, the behavior of the state’s representatives signals the degree of institutional commitment to fair procedures and fair treatment of citizens; such factors are thought to be as important as institutional performance in shaping public trust.<sup>454</sup> Similarly, research on political transitions in Eastern Europe has found that signals of moral leadership by the state have a strong impact on public faith in institutions.<sup>455</sup> Finally, scholars argue that upholding the rule of law can boost citizens’ perception of their own political empowerment and efficacy, which can in turn lead to greater trust in public institutions.<sup>456</sup> In a fragile state, in which the basic moral order of the state has been challenged or has corroded, the connection between the rule of law and legitimacy may be even more immediate and salient. This yields hypothesis three:

*Hypothesis 3: Perceptions that the rule of law is being upheld will lead to increased state legitimacy*

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<sup>450</sup> Erik G. Jensen, “The Rule of Law and Judicial Reform: the Political Economy of Diverse Institutional Patterns and Reformers’ Responses” in Erik G. Jensen and Thomas C. Heller eds., *Beyond Common Knowledge: Empirical Approaches to the Rule of Law*, Stanford University Press 2003, p. 336

<sup>451</sup> See Erik G. Jensen, “Justice and the Rule of Law” in Call and Wyeth eds., *ibid.*, p. 119-124. See also Jensen 2003, *ibid.* pp. 338-343. These competing definitions account for the complex and heterogeneous tangle of rule of law activities in post-conflict and fragile states: court reforms, training for jurists and prosecutors, human rights promotion, and so on.

<sup>452</sup> See Thomas Carothers “The Rule of Law Revival”, *Foreign Affairs*, March/April 1998

<sup>453</sup> See Susan Rose-Ackerman. “Trust, Honesty, and Corruption: Reflection on the State-Building Process” *European Journal of Sociology*, Vol. 42 No. 3, 2001, and Margaret Levi “A State of Trust” in Valerie A. Braithwaite and Margaret Levi, eds. *Trust and Governance*, Russell Sage Foundation. 1998

<sup>454</sup> Seok-Eun Kim “The Role of Trust in the Modern Administrative State : An Integrative Model” *Administration & Society*, Vol. 37, No. 5, 2005, pp. 615-616

<sup>455</sup> See Martin Raiser, “Trust in Transition” in Frank Bönker, Klaus Müller, and Andreas Pickel eds., *Postcommunist Transformation and the Social Sciences: Cross-Disciplinary Approaches*, Rowman & Littlefield Publishers. 2003.

<sup>456</sup> Philippe Le Billon “Corrupting Peace? Peacebuilding and Post-conflict Corruption” *International Peacekeeping*, Vol. 15, No. 3, 2008



## *Social contract statebuilding*

Social contract statebuilding focuses on the performance of institutions rather than their policy processes. In this model, institutions rise— and fall— on the basis of their ability to meet basic needs.<sup>457</sup> As such, one solution to the legitimacy gap is for recovering states to use public services to signal a commitment to a new social contract and to the broader public good.<sup>458</sup> A broad body of research links trust in political institutions to their ability to deliver.<sup>459</sup> However, analyses of institutional performance and legitimacy have focused largely on wealthy and post-Communist states, where public security is taken for granted, while economic performance is given particular weight.<sup>460</sup> In fragile and post-conflict states, by contrast, scholars emphasize more fundamental dimensions public goods: security, justice, and basic social services.

### (i) Security

The social contract model of statebuilding argues that trust between citizens and state institutions begins with the state's most basic function: the effective monopolization of the use of force.<sup>461</sup> Indeed, the roots of social contract theory emphasize the centrality of security as the means through which rulers secure the consent of the governed.<sup>462</sup> Accordingly, the projection of security has been widely cited as the central task in reconstructing fragile and post-conflict states.

After war ceases, most fragile and post-conflict states remain insecure and violent. They are typically awash in small arms, and former combatants intimately acquainted with their use. Security services are often degraded from extended conflict, and after peace are underfunded, and organizationally fragmented.<sup>463</sup> Citizens face direct risks from crime, inter-communal violence, and the resumption of organized conflict. Moreover, the police may be distrusted by the population, either owing to an inability to provide security, or on the basis of predatory behavior or abuses against civilians. Re-establishing public security often requires fundamental alterations to the security sector, typically the re-assignment of military forces to external defense, while police forces and other institutions adapted for domestic order must be reconstructed or built from scratch.<sup>464</sup>

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<sup>457</sup> Robert I. Rotberg "The New Nature of Nation-State Failure" *The Washington Quarterly*, Summer 2002, p. 85

<sup>458</sup> Julien Barbara "Rethinking neo-liberal state building: building post-conflict development states" *Development in Practice*, Vol. 18, No. 3, 2008, p. 310

<sup>459</sup> Jose Antonio Cheibub, Adam Przeworski, Fernando Papaterra Limongi Neto, and Michael M. Alvarez "What Makes Democracies Endure?" *Journal Of Democracy*, Vol. 7 No. 1, 1996, William Mishler and Richard Rose "What Are the Origins of Political Trust?" *Comparative Political Studies*, Vol. 34 No. 1, 2001; Marc J. Hetherington, "The Political Relevance of Political Trust" *The American Political Science Review* Vol. 92, No. 4 1998

<sup>460</sup> In particular: unemployment levels and macro-economic stability

<sup>461</sup> Krause and Jütersonke, *ibid.*, p. 450, Jean-Marie Guéhenno, "Public Security, Criminal Justice, and Reforming the Security Sector." Background paper prepared for the 2011 World Development Report, World Bank, 2010.

<sup>462</sup> This argument is most closely associated with Thomas Hobbes' *Leviathan*. More recently, see Bates 2001, *ibid.*

<sup>463</sup> World Bank, World Development Report 2011, p. 149

<sup>464</sup> Krause and Jütersonke, *ibid.*, p. 452

The fundamental goal of international actors is to improve institutional capacity to provide individuals with security from violence and harm.<sup>465</sup> According to this argument, citizens respond to improvements in security that affect their daily lives: if they face less risk when traveling to market, to work, or in their homes, they will regard the security services—and by extension, the state as a whole—as more legitimate.

*Hypothesis 4: Improvements in security conditions will strengthen state legitimacy*

(ii) Justice

While substantial international attention focuses on the rule of law—in particular, on the formulation of legal codes and their effective application to bureaucrats and line agents—the ability of the government to meet the *day-to-day needs* of its citizens for justice and dispute resolution represents a distinct challenge.<sup>466</sup> War and long-run institutional corrosion have drastic effects on legal infrastructure. Courts are destroyed. Judges, lawyers, and personnel with experience managing cases and delivering justice are displaced or killed.<sup>467</sup> Even where legal systems remain organizationally intact, heavy caseloads and budget and staffing shortfalls can create long delays, which can erode faith in the legal system.<sup>468</sup> The direct impacts of conflict, including forced displacement, the seizure of property, or destruction of records, can create uncertainty or contestation regarding property rights. And if lack of legal recourse is combined with weak security sector, actors may resort to coercion to settle disputes, raising the potential for violent flare-ups.<sup>469</sup>

For all of these reasons, the functioning of the legal system directly impacts the quality of everyday life.<sup>470</sup> And indeed, empirical research on justice systems has found that people tend to locate legal justice and injustice in matters that directly impact their lives, rather than in higher-order abstractions.<sup>471</sup> The degree to which legal infrastructure addresses ordinary needs, such as the resolution of civil cases and settlement of contract or property disputes, has implications for faith in public institutions.

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<sup>465</sup> Versus improving the capability of the nation-state to defend against external threats. See John J. Hamre and Gordon R. Sullivan “Toward Postconflict Reconstruction” *The Washington Quarterly*, Vol. 25, No. 4, Autumn 2002, p. 89; World Bank, WDR 2011, *ibid.*

<sup>466</sup> World Bank, World Development Report 2011, p. 154

<sup>467</sup> Muna B. Ndulo and Roger Duthie “The Role of Judicial Reform in Development and Transitional Justice” in Pablo de Greiff and Roger Duthie, eds. *Transitional Justice and Development: Making Connections*, Social Science Research Council, 2009

<sup>468</sup> Ndulo and Duthie, *ibid.*, p. 256. Informal institutions—such as clan or village councils—responsible for the local administration of justice may suffer equivalent disruption.

<sup>469</sup> See Bates, 2001, *ibid.* The risk of conflict escalation is particularly acute if property disputes fall across inter-communal lines.

<sup>470</sup> See Caroline Sage and Michael Woolcock, “Introduction: Rules Systems and the Development Process” in Ana Palacio, ed. *The World Bank Legal Review: Law, Equity, and Development*, Volume 2, The World Bank, 2006

<sup>471</sup> Jensen, *ibid.* p. 128

Social contract theories of the state posit that the effective administration of justice is directly and intimately linked to citizens' perceptions of institutional legitimacy. According to this formulation, if citizens believe that justice is accessible, and that judicial institutions function effectively to ensure that their rights are protected, then they will perceive the broader institutional framework to be more legitimate. Conversely, if citizens perceive judicial institutions to be ineffective or partial, this judgment will color their overall assessment of state legitimacy. This yields hypothesis five:

*Hypothesis 5: Improvements in the capacity of the justice system will strengthen state legitimacy*

### (iii) Social services

Just as the corrosion of social services has been empirically linked with the collapse of state legitimacy, the effective delivery of basic services is widely considered to underpin legitimacy during processes of reconstruction. Theorists and practitioners argue that meeting basic services signals the state's attention to, and its ability to meet, citizens' expectations and conception of the social contract. States that are unable or unwilling to meet these expectations face the potential withdrawal of citizen consent.<sup>472</sup>

Although scholars have not posited a hierarchy of social services, health has received particular attention, because of the immediacy of its relevance to human well-being, and the obvious consequences of its withdrawal. Kruk et. al. argue that "the health system is a face of the state, every bit as much as other core social institutions such as the police and the judiciary."<sup>473</sup> Moreover, they argue, the setup of the health system signals the state's values and institutional priorities. The World Health Organization thus suggests that health can function as a "bridge to peace" by effectively signaling that it prioritizes citizens, and delivering services that are meaningful in context of their everyday lives.<sup>474</sup>

Anecdotal evidence from a number of post-conflict contexts suggests a direct link between health and institutional legitimacy.<sup>475</sup> Empirical evidence from a cross-national analysis of low and middle-income countries also shows that several dimensions of health system performance, notably technical quality of care and responsiveness, can be significant

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<sup>472</sup> Brinkerhoff, *ibid.*, p.6, World Bank 2011, *ibid.*

<sup>473</sup> Kruk, Freedman, Anglin, and Waldman *ibid.*, p. 93

<sup>474</sup> See <http://www.who.int/hac/techguidance/hbp/about/en/index.html>. However, the 'bridge to peace' concept has been criticized as difficult to operationalize and measure. See Simon Rushton and Colin McInnes "The UK, health and peacebuilding: the mysterious disappearance of Health as a Bridge for Peace" *Medicine, Conflict and Survival*, Vol. 22, No. 2, 2006.

<sup>475</sup> Some data suggest that investments in health can provide "quick wins" vital to establishing legitimacy. One insider in the 1994 transition from apartheid in South Africa notes that "delivering a few early results—including maternal and infant healthcare... were important to maintain confidence in our new government." See World Bank World Development Report, 2011, p. 115. By contrast, quick losses would have the opposite effect. A report by the U.S. National Intelligence Council argues that a failure to meet the health care needs of the population undercut the legitimacy of the fledgling governments of Iraq and Afghanistan. See U.S. National Intelligence Council, "Strategic Implications of Global Health" ICA 2008-10D, December 2008, pp. 5-6 retrieved at: [https://www.fas.org/irp/nic/global\\_health\\_2008.pdf](https://www.fas.org/irp/nic/global_health_2008.pdf).

drivers of popular trust in the state.<sup>476</sup> However, analyses to date have had to rely on data that do not directly measure other dimensions of institutional reconstruction and performance—such as justice—or track perceptions of institutional change over time.<sup>477</sup> Both types of data are particularly relevant for fragile and post-conflict states.

If the design and effectiveness of the health system directly signals the state's priorities and commitment to upholding the social contract, a well-functioning health system could support perceptions of state accountability and legitimacy.<sup>478</sup> By extension, building stronger health systems in fragile states should help restore lost legitimacy.<sup>479</sup> This yields the following hypothesis:

*Hypothesis 6: Better health system performance will strengthen state legitimacy*

The next section outlines the empirical terrain on which I test these hypotheses: a region of Indonesia affected by conflict for the majority of its modern history, which also was the target of one of the largest reconstruction programs yet attempted by the international community.

### **3. The case of Aceh: multi-generational war and post-conflict reconstruction**

Robert Rotberg argues that failed states are defined not by the intensity of violence within their borders, but instead by the “enduring character” of conflict.<sup>480</sup> Against this benchmark, the case of Aceh, Indonesia offers particularly fertile ground to explore the dynamics of reconstruction and legitimacy. From 1873 to 2005, Aceh was in a state of armed insurrection against central authority for 79 out of 132 years; that is, at war for roughly 60 percent of its modern history.<sup>481</sup> For substantial periods, administration by central government was effectively absent. The most recent iteration of insurgency, which ignited in 1998, was particularly brutal and pervasive, bringing violence to nearly all corners of the province.

Indonesia is typically identified in cross-national indices as a fragile—though not failed—state. In most indicia this categorization is driven primarily by endemic violence along Indonesia's borders and hinterlands, and weak central government capacity to deliver core

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<sup>476</sup> See Peter C. Rockers, Margaret E. Kruk, and Miriam J. Laugesen “Perceptions of the Health System and Public Trust in Government in Low- and Middle-Income Countries: Evidence from the World Health Surveys” *Journal of Health Politics, Policy and Law*, Vol. 37, No. 3, June 2012

<sup>477</sup> *ibid.*

<sup>478</sup> Kruk et al. *ibid.*, See also Jack Eldon, Catriona Waddington, Yasmin Hadi, “Health System Reconstruction: Can it Contribute to State-Building?”, report commissioned by the Health and Fragile States Network, October 2008, p. ii

<sup>479</sup> Gareth Jones, Richard Steketee, Robert Black, Zulfigar A. Bhutta, Saul Morris, and The Bellagio Child Survival Study Group. “How Many Child Deaths Can We Prevent This Year?” *The Lancet* Vol. 362 2003

<sup>480</sup> Robert I. Rotberg “The New Nature of Nation-State Failure”, *The Washington Quarterly*, Vol. 25, No. 3, 2002, p. 85.

<sup>481</sup> Anthony Reid “The Aceh Conflict: A Long-Term View for Long-Term Solutions” Annex 4 to the *Multi-stakeholder Review of Post-Conflict Programming in Aceh: Identifying the Foundations for Sustainable Peace and Development in Aceh*, 2009.

governance functions in such contexts.<sup>482</sup> Aceh thus represents a typical case of subnational conflict in a country and region that has produced multiple such cases.<sup>483</sup> It also represents an extreme case of long-running insurgency and localized state fragility.

This section presents an overview of conflict in Aceh, focusing in particular on the causes and manifestations of insurgency, the impact of war on governance and state service provision, and on the dynamics of international reconstruction efforts following the cessation of conflict in 2005.

### Multi-generational violence: warfare in Aceh, 1873-2005

War and disorder in Aceh has been primarily driven by center-periphery dynamics, manifesting in a series of insurgencies against colonial occupiers in the 19th through mid-20th centuries, followed by epicycles of revolt against the Indonesian central government.

Historically, Aceh was an independent Sultanate and regional power. By the 1500s, the Acehese Sultanate dominated spice exports and exerted control over the strategically important Straits of Malacca.<sup>484</sup> Aceh was weakened by the arrival of European powers, and in particular the growing dominance of British and Dutch colonial outposts over trade. In 1873, Dutch forces invaded, seeking to expand the holdings of the Netherlands East Indies. During the Dutch colonial period Aceh was in a near-constant state of revolt, with insurrections occurring each decade; insurgency continued against the Japanese occupying forces that temporarily replaced the Netherlands in 1942.<sup>485</sup> Through the late 1940s, Aceh was a focal point of resistance to colonial rule, to such an extreme extent that the region was neither pacified nor occupied, even as the Netherlands retook the rest of Indonesia.<sup>486</sup>

With the advent of Indonesian independence, anti-colonial violence soon shifted to conflict against the national government. The newly-independent government in Jakarta soon attempted to assert central control over Indonesia's outlying territories, reneging on an agreement to grant Aceh provincial status,<sup>487</sup> and regulating local civil law rather than

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<sup>482</sup> Rotberg 2003, *ibid.*, p. 49; See also Jusuf Wanandi "Indonesia: A Failed State?" *The Washington Quarterly*, Vol. 25, No. 3, 2002. Cross-national indices of state capacity rank Indonesia as weak, fragile, or worth monitoring. See Fund for Peace / Foreign Policy "Failed States Index 2013", retrieved at: <http://ffp.statesindex.org/rankings-2013-sortable>; Susan E. Rice and Stewart Patrick "Index of State Weakness in the Developing World" the Brookings Institution, 2008, pp. 14, 20, 21. Retrieved at: [http://www.brookings.edu/~media/research/files/reports/2008/2/weak%20states%20index/02\\_weak\\_states\\_index.pdf](http://www.brookings.edu/~media/research/files/reports/2008/2/weak%20states%20index/02_weak_states_index.pdf)

<sup>483</sup> Other notable examples include that of Timor Leste (formerly: East Timor), and ongoing violence in West Papua.

<sup>484</sup> Edward Aspinall "Aceh: Democratization and the Politics of Co-option" in Edward Aspinall, Robin Jeffrey, Anthony Regan, eds *Diminishing Conflict in Asia and the Pacific: Why Some Subside and Others Don't*, Routledge, 2012, p. 53

<sup>485</sup> Anthony Reid, "War, Peace, and the Burden of History in Aceh", *Asian Ethnicity*, Vol. 5, No. 3, 2004, p. 304

<sup>486</sup> Aspinall 2012, *ibid.*

<sup>487</sup> Instead, Aceh was merged with North Sumatra.

allowing Acehese elites to implement *shariah*.<sup>488</sup> Aceh again became a focal point for revolution, this time the unsuccessful *Darul Islam* revolt, which aimed to transform Indonesia into an Islamic state and carve out greater governing autonomy for Aceh.<sup>489</sup> Throughout *Darul Islam* the central government had only a tenuous grip on Aceh, until the rebellion was weakened and finally crushed in the early 1960s.<sup>490</sup>

In 1976, conflict reignited, this time in the form of an insurgent movement *Gerakan Aceh Merdeka* (GAM), which aimed for Aceh's complete independence rather than autonomy within the Indonesian national framework.<sup>491</sup> The GAM insurgency was rooted in multiple factors: the continuing articulation of a distinct Acehese identity; repeatedly frustrated efforts at achieving greater political autonomy; and, in 1971, the discovery of large natural gas deposits off the coast of Aceh, which gave rise to widespread perceptions that hydrocarbon wealth was being siphoned off by Jakarta rather than benefiting ordinary Acehese.<sup>492</sup>

The GAM insurgency flared for nearly thirty years. The uprising was quashed in 1979, only to re-emerge in 1989 on a far larger scale. In this second phase of war, GAM was able to rely upon a significantly larger force of recruits, anchored in support from Aceh's predominantly rural population. Although the Indonesian military was substantially larger, better trained, and better equipped, GAM was able to leverage popular support and superior local knowledge to wage an effective asymmetric war.<sup>493</sup> The Indonesian government responded with a ferocious suppression campaign, mounted under a State of Emergency that gave wide discretion to military units. The result was a particularly brutal counterinsurgency, marked by disappearances, torture and human rights abuses, and

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<sup>488</sup> This reflects broader tensions over the role of Islam in the state. Sukarno, the leader of the new Indonesian nation, instead adopted "Pancasila", or the "five principles" as the moral basis of the Indonesian state. Pancasila was essentially syncretic, blending democratic socialism, nationalism and Islam; as Aspinall notes, the first principal "Belief in One God" was intended to placate Islamists without conceding to them. See Edward Aspinall "From Islamism to Nationalism in Aceh, Indonesia" *Nations and Nationalism*, Vol. 13, No. 3, 2007, pp. 249-251; also fn. 2, p. 262.

<sup>489</sup> Although the *Darul Islam* insurrection was defeated, the national government granted Aceh special territorial status and with it, the authority to regulate education and local law; it again effectively renegeed on these concessions, later fueling anti-government sentiment among Acehese local and religious elites. Eric Eugene Morris *Islam and Politics in Aceh: A Study of Center-Periphery Relations in Indonesia*. PhD dissertation, Cornell University 1983, cited by Aspinall 2007, *ibid.*, p. 252

<sup>490</sup> A negotiated settlement in 1962 ended the conflict in Aceh, in exchange for a grant of special territorial status that expanded autonomy and gave Acehese elites the right to implement *shariah*. However, Jakarta again rolled back these concessions in the late 1980s. Aspinall 2007, *ibid.*

<sup>491</sup> Edward Aspinall "Violence and Identity Formation in Aceh under Indonesian Rule" in Anthony Reid, ed. *Verandah of Violence: The Background to the Aceh Problem*, National University of Singapore Press, 2006, p. 151

<sup>492</sup> Although some accounts of modern conflict in Aceh suggest that war was—as in other resource-rich areas—driven by logics of natural resource extraction, Aspinall argues that the natural gas discovery was not a sufficient cause in and of itself. Rather, the siphoning of resource rents to Jakarta was interpreted by Acehese elites within a broader narrative of center-periphery conflict and Acehese resistance to external domination. See Edward Aspinall "The Construction of Grievance Natural Resources and Identity in a Separatist Conflict", *Journal of Conflict Resolution*, Vol. 51 No. 6, 2007

<sup>493</sup> Kirsten Schulze "Insurgency and Counter-Insurgency: Strategy and the Aceh Conflict, October 1976 - May 2004" in Anthony Reid, ed. *Verandah of Violence*, 2006, *ibid.*

<sup>494</sup> *ibid.* See also: Human Rights Watch "The War in Aceh", Vol. 13, No. 4 2001. Retrieved at: <http://www.hrw.org/reports/2001/aceh/indacheh0801.pdf>

widespread civilian victimization and mortality.<sup>494</sup> GAM, for its part, contributed to violence by targeting suspected government collaborators and defectors.

After a quiescent period after the fall of Indonesian President Soeharto and the election of a more conciliatory successor in 1998, GAM again intensified its campaign. In this, last period of the conflict, GAM focused significant efforts on degrading the national government's capacity to administer Aceh. This strategy entailed direct attacks on government building and infrastructure and, critically, widespread attacks and intimidation aimed at civil servants.<sup>495</sup> Schulze notes that in 2000-1, attacks on judges, village heads, and civil servants were so intense as to cause the justice system to effectively collapse.<sup>496</sup> With civil institutions in disarray, GAM was able to exert control over the majority of the province, via an insurgent civil governance system able to control local administration.<sup>497</sup> The GAM structure divided Aceh into 17 discrete regions, with bureaucratic lines stretching down to the village level; this system was employed both to extract tax revenue to support the insurgency, as well as basic civil administration that provided, among other services, documentation for marriages and births.<sup>498</sup>

By the early 2000s, diplomatic efforts to resolve the conflict were well underway, in part driven by efforts by an international NGO, the Centre for Humanitarian Dialogue, to build lines of communication and utilize cease fires to build confidence on both sides.<sup>499</sup> Conflict continued, but momentum built: a "humanitarian pause" in 2000 quickly reverted to violence, as did a cessation of hostilities agreement in 2002, which collapsed in May 2003.<sup>500</sup> On 26 December, 2004, Aceh was struck by a tsunami. The scale of the devastation was enormous: hundreds of thousands were killed or missing, whole villages were swept away, and the capital, Banda Aceh, was mostly destroyed. The disaster focused international attention on Aceh, as well as a flood of humanitarian resources.<sup>501</sup> The shock and scale of the disaster, along with the momentum that negotiations had built up in the early 2000s, helped bring GAM and the government back to negotiations.<sup>502</sup> In August 2005, a peace treaty was signed, providing for political autonomy for Aceh, the removal of the Indonesian military from the province and reconstitution of local security forces, and

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<sup>495</sup> Schulze 2006, *ibid.*, pp. 229-231

<sup>496</sup> *ibid.* p. 230. Attacks on the school system, viewed by GAM as an instrument of Indonesian government socialization and brainwashing, were also pervasive.

<sup>497</sup> Kirsten E. Schulze, *The Free Aceh Movement (GAM): Anatomy of a Separatist Organization*, East-West Center Policy Studies No. 2, East-West Center, Washington D.C., 2004

<sup>498</sup> Kirsten E. Schulze, "The Struggle for an Independent Aceh: The Ideology, Capacity, and Strategy of GAM" *Studies in Conflict and Terrorism*, Vol. 26, No. 4, p. 254

<sup>499</sup> Reid 2004, *ibid.*, pp. 310-12

<sup>500</sup> In 2001, the Indonesian government passed a law providing for autonomy for Aceh, to include greater control over local governance as well as hydrocarbon wealth. The law failed to sway GAM, and as the war continued, the autonomy provisions went unimplemented.

<sup>501</sup> Anthony Reid "Introduction", in Anthony Reid, ed. *Verandah of Violence*, 2006, *ibid.* pp. 16-17

<sup>502</sup> Mohammad Hasan Ansori "From Insurgency to Bureaucracy: Free Aceh Movement, Aceh Party and the New Face of Conflict", *Stability: International Journal of Security & Development*, Vol. 1 No. 1, 2012

extensive reconstruction efforts aimed at rebuilding infrastructure, governance, and social services.<sup>503</sup>

### Transition and reconstruction

The Helsinki agreement provided for fundamental political reconfiguration in Aceh, a fact that is often used to explain the region's successful transition to peace.<sup>504</sup> At the same time, massive resource flows simultaneously attempted to rebuild basic governance and service-delivery functions. Thus, the case of Aceh displays hybridity, allowing for a direct comparison of liberal and social-contract dimensions of statebuilding.

Political liberalization in Aceh was achieved through expanded autonomy and self-government, coupled with elections for key provincial offices, most notably that of governor. The elections were anchored in a crucial political reform: while local political parties had been banned across Indonesia—thus screening identity-driven movements such as GAM out of politics—under the accord, local parties were allowed to contest for office in Aceh.<sup>505</sup> GAM formed a political party, *Partai Aceh*, which dominated local and provincial government in the first round of elections, while Irwandi Jusuf, a former GAM elite, was elected governor in 2007.

Economic liberalization and rule of law were addressed indirectly, via reforms aimed at curtailing corruption and breaking the power of entrenched, rent-seeking elites.<sup>506</sup> The primary instrument deployed was monitoring by international organizations and technocrats within Indonesian government ministries, coupled with financial support and extensive training for an increasingly active network of local anti-corruption NGOs and civil society organizations.<sup>507</sup> For the first time since the start of the war, Aceh was also opened to foreign capital flows. However, some evidence suggests that political reconfiguration quickly came in tension with economic reforms, with new GAM elites quickly forming patronage networks to capture valuable niches in government contracting.<sup>508</sup>

Insecurity in Aceh was addressed via both subtraction and addition. GAM negotiators feared the potential for abuses and violence by security forces, even after the implementation of the peace accord; government, for its side, was concerned that GAM relinquish its coercive capacity. The peace accord provided for both the disarmament and demobilization of GAM combatants under international monitors, a wholesale withdrawal of national military and police units, and a revision of the security sector's terms of

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<sup>503</sup> Aspinall 2012, *ibid.* pp. 57-8

<sup>504</sup> See for instance: Olle Törnquist, "Dynamics of peace and democratization. The Aceh lessons" *Democratization*, Vol. 18, No. 3

<sup>505</sup> Ansori, *ibid.*, pp. 34-5

<sup>506</sup> Törnquist, *ibid.*, pp. 832-3

<sup>507</sup> Multi-stakeholder Review, *ibid.* pp. 53, 153

<sup>508</sup> Ansori, *ibid.*, pp. 37-8



engagement designed to limit the potential for abuse.<sup>509</sup> Addition came in the form of support for security-institution building: “organic”—that is, Acehnese—police units were to take up the task of providing security, supported by training in community policing.<sup>510</sup>

Even as governance processes were fundamentally altered by the peace accord, international actors plowed enormous resources into reconstruction efforts, in order to build capacity to deliver basic social services, particularly health. Conflict had a heavy impact on Aceh’s health infrastructure. 1,134 of Aceh’s 1,520 village health centers—nearly 75 percent—were damaged by war.<sup>511</sup> The tsunami also did enormous damage, destroying key health infrastructure and killing an estimated 10 percent of health sector workers.<sup>512</sup> Donor governments and international NGOs spent over 600 million dollars on health sector reconstruction, including the rehabilitation of clinical infrastructure, and the rebuilding of community health systems at the village level.<sup>513</sup> A substantial share of reconstruction funds—some 300 million dollars—also went to support the development of “enabling” health infrastructure such as clean water and sanitation systems.<sup>514</sup>

#### 4. Data and empirical strategy

In order to test the hypotheses regarding the linkages between statebuilding and legitimacy, I draw upon population survey data collected across Aceh, Indonesia, in 2012. The following sub-sections outline the survey sampling design, as well as the operationalization of concepts and construction of variables used in the empirical analysis.

##### Survey data

The survey data were collected by the Asia Foundation, a non-governmental organization, and include information from 1,586 respondents drawn from across Aceh. The survey was administered using a multi-stage stratified random sampling design, design to capture

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<sup>509</sup> See Damien Kingsbury, “The Aceh Peace Process” in Arndt Graf, Susanne Schroter, Edwin Wieringa, eds. *Aceh: History, Politics and Culture*, Institute of Southeast Asian Studies Publishing, 2010; Multi-stakeholder Review of Post-Conflict Programming in Aceh, *ibid.* pp. 141-2

<sup>510</sup> Multi-stakeholder Review, *ibid.*, p. 53

<sup>511</sup> Multi-Stakeholder Review of Post-Conflict Programming in Aceh: Identifying the Foundations for Sustainable Peace and Development in Aceh, 2009, p. 43

<sup>512</sup> “The achievements of the Australia-Indonesia Partnership for Reconstruction and Development (AIPRD) in Aceh and Nias”, December 2006. [http://reliefweb.int/sites/reliefweb.int/files/resources/9734282C922DD07B492572410006CB91-Full\\_Report.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/9734282C922DD07B492572410006CB91-Full_Report.pdf)

<sup>513</sup> Harry Masyrafah and Jock MJA McKeon “Post-Tsunami Aid Effectiveness in Aceh: Proliferation and Coordination in Reconstruction” Wolfensohn Center for Development Working Paper No. 6, Brookings Institution, 2008, pp. 7-10

<sup>514</sup> *ibid.*

variation in exposure to wartime violence and international aid flows.<sup>515</sup> Within each sampled sub-district, 10 villages were randomly selected, and within each village, 10-15 households were selected. For each household, a single respondents over 18 years of age was selected using kish grid.

### Variable construction

The main concept of interest in this study, institutional legitimacy, is constructed from a survey question that asked the extent to which the respondent trusts the National Government of Indonesia. Institutional trust closely matches the primary conceptual dimensions of legitimacy, but has a commonsense and intuitive understanding.<sup>516</sup> Like the underlying concept I seek to measure, trust is also subjective, relational in character, and dynamic; in addition, it identifies a property of the state, rather than a particular national administration. The dependent variable of interest, *Legitimacy*, ranges from one (none) to four (high).

I build two primary batteries of independent variables, tailored to the two theories of statebuilding—liberal, and social contract—outlined in section two.

The family of liberal statebuilding variables includes measures for democracy, economic liberalization, and rule of law. The relationship between electoral democracy and institutional legitimacy is captured through participation in electoral processes. Respondents were asked whether they had voted in the most recent election; from this I derive *Political Participation*, a dichotomous (dummy) variable. *Political Participation* is a behavioral measure which taps underlying perceptions of political efficacy through democratic processes.<sup>517</sup> The penetration of liberal economic reforms to the grassroots is measured through a survey question which asked about labor market dynamics. Respondents were asked whether people in their village had the same potential to get a job or contract, regardless of their role during the conflict and degree of connection to the GAM insurgency. *Economic opportunity* is scaled from one (strongly disagree) to four (strongly agree) that everyone has equal opportunity. *Rule of law* measures the extent to which respondents feel that local government officials (in essence, front-line bureaucrats) uphold appropriate norms of behavior. Respondents were asked two questions: first, whether government officials used their office to further their own interests, and second, whether officials served the interests of the powerful. Both measures were dichotomous. I

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<sup>515</sup> The first stage divided all districts (kabupaten) in Aceh into three geographic zones: the Northeast (the historical heartland of the GAM insurgency), Southern and Western Coasts, and the highlands. Districts within each geographic zone were then ranked according to levels of wartime violence, and a sample was drawn using a random start point and scaled selection interval. This initial selection of districts was then ranked according to aid flows, and a sample was drawn using a random start point and scaled selection interval. This process yielded a sample of seven districts: three from the Northeast, two from the South and West, and two from the highlands. Sub-districts (kecamatan) within each districts were then randomly selected.

<sup>516</sup> Kenneth Newton. "Social and Political Trust" in Russell J. Dalton and Hans-Dieter Klingemann, eds. *Oxford Handbook of Political Behavior*, Oxford University Press. 2007, p. 344

<sup>517</sup> See Brady, Henry E., Sidney Verba, and Kay Lehman Schlozman "Beyond SES: A Re-source Model of Political Participation" *American Political Science Review* Vol. 89 1995

combine these measures to form a scale, measuring the overall extent to which local state officials are deemed to use their office to violate the rule of law.<sup>518</sup>

The family of statebuilding variables measures perceived changes, both positive and negative, in core state functions and social services. Respondents were first asked to indicate the degree to which they were satisfied with basic services: security from crime and violence, medical and health services, justice. They were then asked whether, in general, each function was better, the same, or worse than it had been before the signing of the peace treaty. I use this differential measure to derive a set of ordinal variables—*Justice*, *Security*, and *Health*—which measure the the degree of statebuilding around each function. These variables range from one (worse), to two (same), to three (improved).

The empirical analysis includes a vector of statistical control variables. Because satisfaction with the implementation of the peace accord is potentially correlated with both perceptions of institutional legitimacy as well as many of the right-hand variables, I include *MoU Implementation*, which measures extent to which the respondent feels satisfied that the provisions of the peace between GAM and the National Government (the MoU) have been implemented. *MoU Implementation* is an ordinal variable ranking from one (unsatisfied) to four (highly satisfied). Respondents were asked about their experiences during wartime, including whether they served with the GAM insurgency, or were incarcerated by the government or military as a political prisoner. These populations are likely to have distinctive views of both statebuilding processes, on the one hand, and the national government on the other; *Ex-combatant* is a dummy (binary) variable which takes a value of one if the respondent was a member of the GAM insurgency. *Political prisoner* is a dummy variable which takes a value of one if a respondent says that she was imprisoned because of her suspected support for GAM. *Victim* is a dummy variables which takes a value of one is the respondent reports that they were victimized (for instance: physically harmed, or suffered loss of assets).

Finally, I include a variable to measure general social trust. A broad literature on social capital suggests that trust between individuals may be related to trust in institutions: the basic intuition is that social trust shapes participation in civil society and civic life, and that this civic culture in turn shapes trust and participation in formal institutions.<sup>519</sup> As such, trust could be correlated with both independent and dependent variables in this

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<sup>518</sup> As a robustness check, I derive an additional variable, *Experienced Corruption*, based upon a survey question that probed respondents' experience with government officials soliciting bribes. More specifically, the question asked how often the respondent had to present a gift or payment to a government official to obtain an official document. *Experienced Corruption* ranges from one (never) to four (often). The incidence of corruption is relatively low for a post-conflict environment: 62 percent of the sample reports never had to pay a bribe for an official document. Almost 13.5 percent reports having rarely paid a bribe; 17 percent reported paying a bribe occasionally; 5.8 percent said that they paid bribes often. Around 1.5 percent did not respond. Although these experiential measures diverge somewhat from perception-based questions, which paint a somewhat worse picture of official corruption, using this alternate measure in the regression models presented below has no substantive impact on the results.

<sup>519</sup> Francis Fukuyama, *Trust: The Social Virtues and The Creation of Prosperity*, Free Press, 1996; Robert D. Putnam *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton University Press, 1993; Michael Woolcock "Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework" *Theory and Society* Vol. 27 No. 2, 1998.

analysis. Respondents were asked, in general, whether they felt that people could be trusted, or that one could not be too careful in dealing with others.<sup>520</sup> I use this question to derive *Social Trust*, a dichotomous measure which takes a value of 1 if the respondent felt that in general people were trustworthy. Finally, a set of controls address socio-economic factors, including household income (*Income*), educational attainment (*Education*), Age, marital status (*Married*), gender (*Male*), as well as a self-rating of emotional well-being at the time of survey (*Mental Health*). Table 4.1 presents basic descriptive statistics.

Table 4.1: descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Legitimacy	1237	1.807	0.682	1	4
Voted	1578	0.907	0.291	0	1
Economic opportunity	1357	2.744	1.207	1	4
Rule of law	1546	2.408	1.637	0	4
Justice	1222	2.014	0.698	1	3
Security	1308	2.343	0.696	1	3
Health	1398	2.401	0.618	1	3
MoU implementation	1450	3.360	0.777	1	4
Ex-combatant	1579	0.022	0.145	0	1
Victim	1580	0.334	0.472	0	1
Political prisoner	1552	0.041	0.197	0	1
Social trust	1492	0.200	0.400	0	1
Married	1584	0.746	0.436	0	1
Education	1586	2.210	1.287	0	5
Age	1586	36.738	13.485	18	92
Male	1586	0.448	0.497	0	1
Income	1530	2.454	0.972	1	5
Mental health	1578	2.371	1.076	1	5

## 5. Analysis and results

This section presents the findings from the empirical analysis, along with a set of robustness checks. The main empirical analysis consists of a battery of ordered logistic regression models. Ordered logistic regression is used to model to outcomes in which variable values are ordinal but not continuous. The dependent variable of interest,

<sup>520</sup> In effect, this wording is a variation of a standard question used to measure trust in cross-national research. See World Values Survey questionnaires, retrieved at: [http://www.worldvaluessurvey.org/index\\_surveys](http://www.worldvaluessurvey.org/index_surveys). On question reliability, see Noel D. Johnson and Alexandra Mislin "How Much Should We Trust the World Values Survey Trust Question?" *Economics Letters*, Vol. 116, No. 2, 2012.

individual perception of state legitimacy, is ordered, but can be considered to map onto a latent, continuous scale.<sup>521</sup>

Table two presents the results. The coefficients in table 4.2 are exponentiated, and can be interpreted as odds ratios. Unlike logistic regression coefficients, odds ratios provide for a clear substantive interpretation of the independent variables. A coefficient with a value of above one indicates an increased likelihood of perceiving the state as more legitimate; and a coefficient with a value below one would indicate lower odds of viewing the state as legitimate. For instance, a coefficient of two for *Income* would indicate that wealthier people were twice as likely to have higher level of trust in the state. All models are estimated with robust standard errors.<sup>522</sup>

We begin by assessing factors associated with liberal statebuilding, presented in models one and two; model one is reduced, model two introduces the full vector of control variables. These initial models show limited support for core aspects of liberal statebuilding. There is no statistically significant association between political engagement (*Voted*) and the perceived legitimacy of state institutions.<sup>523</sup> Nor is there an association between perceptions of expanded *Economic opportunity* and state legitimacy. *Rule of Law* is positively and significant associated with higher levels of trust in the reduced model. However, its effect is relatively modest—people who perceive an improvement in the rule of law are only around seven percent likelier to have higher levels of trust in the state—and *Rule of Law's* effect fades when statistical controls are introduced.

We now turn to factors associated with social contract statebuilding, presented in models three and four. As above, the first model is reduced, while the second introduces the vector of control variables. Models three and four show strong, though not uniform, support for social contract dimensions of statebuilding. While the estimate for *Justice* is unstable and not statistically significant, the perception that the state has improved security from violence and crime has a strong and statistically significant association with institutional legitimacy. All else equal, people who perceive that *Security* has improved are over 30 percent more likely to have higher levels of trust in the state. The association between *Health* and state legitimacy is even stronger. Controlling for the full range of covariates, people who perceive that the health system has improved are nearly twice as likely to have higher ratings of state legitimacy.

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<sup>521</sup> Maximum-likelihood estimation models such as logistic regression are fairly sensitive to model specification, as an additional robustness check I estimated all models in ordinary least squares regression (OLS). The results are stable. See Andrew S. Fullerton “A Conceptual Framework for Ordered Logistic Regression Models” *Sociological Methods & Research*, Vol. 38 No. 2, 2009; Joshua D. Angrist and Jörn-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton University Press, 2009

<sup>522</sup> Results are also robust to clustering errors at the village level

<sup>523</sup> We might be concerned that the choice to vote could be endogenous to perceptions of state legitimacy; that is, that voting behavior would be conditioned by an individual's assessment of the legitimacy of the institutional framework surrounding electoral politics. I test for this possibility with by estimating a logistic regression model, with voting as a binary dependent variable. There is no statistically significant association between trust in the state and voting, either in a bivariate model ( $p \sim 0.8$ ), or when the full vector of controls is added ( $p \sim 0.23$ ). In short, trust in the state does not determine whether or not individuals vote.

Models five and six estimate coefficients for factors associated with both liberal and social contract statebuilding. Model five is reduced, presenting only the primary right-hand variables of interest, while model six includes the vector of controls. The full models show no support the liberal statebuilding hypotheses. *Economic opportunity* and *Rule of law* are not robustly associated with perceptions of state legitimacy. *Political participation* does have a statistically significant association with legitimacy. However it is *negative*, suggesting that all else equal, opportunity for democratic political participation does not yield immediate improvements in institutional legitimacy. The results for the social contract dimensions of statebuilding stand. *Health* remains the single strongest factor associated with improvements in institutional legitimacy, followed by *Security*; as above, there is no significant or stable association between perceptions that the *Justice* system has improved, and institutional legitimacy.

Table 4.2: Impact of statebuilding dimensions on institutional legitimacy

	(1)	(2)	(3)	(4)	(5)	(6)
Voted	0.885 (0.174)	0.756 (0.161)			0.625* (0.131)	0.567* (0.134)
Economic	1.016 (0.0456)	0.991 (0.0485)			0.956 (0.0501)	0.931 (0.0526)
Rule of law	1.066* (0.0343)	1.008 (0.0371)			1.056 (0.0386)	1.016 (0.698)
Justice			1.072 (0.0964)	0.841 (0.0880)	1.069 (0.0977)	0.849 (0.0887)
Security			1.329** (0.143)	1.364** (0.164)	1.346** (0.145)	1.381** (0.167)
Health			1.702*** (0.185)	1.859*** (0.225)	1.699*** (0.184)	1.856*** (0.226)
MoU implementation		1.564*** (0.130)		1.629*** (0.142)		1.615*** (0.148)
Ex-combatant		0.744 (0.292)		0.783 (0.352)		0.722 (0.319)
Victim		1.328* (0.179)		1.020 (0.151)		1.018 (0.150)
Political prisoner		0.885 (0.247)		0.736 (0.223)		0.862 (0.252)
Social trust		0.843 (0.132)		1.113 (0.196)		1.123 (0.198)
Married		1.129 (0.182)		1.155 (0.210)		1.244 (0.235)
Education		0.960 (0.0544)		0.908 (0.0572)		0.910 (0.0575)
Age		1.003 (0.00542)		1.001 (0.00632)		1.000 (0.00633)
Male		1.292* (0.164)		1.338* (0.187)		1.354* (0.190)
Income		1.443*** (0.115)		1.576*** (0.139)		1.592*** (0.142)
Mental health		1.168* (0.0781)		1.210** (0.0889)		1.205* (0.0910)
N	1212	1070	1006	909	996	902

Coefficients presented as odds ratios; Robust standard errors in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

We now turn to the statistical controls. *MoU Implementation* is positively, consistently, and statistically significantly associated with stronger perceptions of institutional legitimacy. All else equal, stronger feelings that the provisions of the peace accord between GAM and the government of Indonesia were upheld are associated with over 60 percent greater likelihood of considering the state to be legitimate. This reflects the relatively intuitive idea that upholding the integrity of a peace accord has a large and direct implications for the legitimacy of the state. There is no clear evidence that those who suffered at the hands of the state remain convinced of its illegitimacy over the long term: the coefficients for *Ex-combatant* and *Political prisoner* suggest a negative relationship with legitimacy, but are not significant in any specification, while the coefficient for *Victim* is close to one and not significant. Higher levels of *Income* and self-perceived *Mental health* are associated with stronger perceptions of institutional legitimacy; *Age*, *Education*, and *Social trust* are not.

Lastly, we turn to a set of robustness checks, addressing potential biases introduced by missing data. Population surveys often generate missing data. Missing data can result from respondents' inability to answer a question, as a result of indecision or incomprehension. Or it can be caused by their unwillingness to record an answer to a question. In both cases, but particularly the latter, data are rarely missing at random, and so non-response can bias estimates and lead to spurious conclusions. Table 4.2, which presented descriptive statistics, provides a summary of missing data. Missing data are relatively limited, but there are several notable clusters of non-response: state legitimacy (22 percent), perceptions of economic opportunity (14.5 percent), perceptions of the justice system (23 percent), perceptions of security (17 percent), and perceptions of the health system (12 percent). Table 4.3, below, disaggregates non-response into two sub-categories: "don't know" responses, and refusals to answer the question.

Variable	Data available (N)	Don't know (N)	Non-response (N)
Legitimacy	1237	332	17
Economic opportunity	1357	212	17
Justice	1222	300	64
Security	1308	218	60
Health	1398	133	55

I "stress test" the empirical analysis in order to rule out potential bias introduced by patterns of non-response, by imputing missing data and estimating additional batteries of models. Particularly in a fragile, post-conflict environment, item non-response is likely to reflect underlying anxiety regarding sensitive topics, such as criticizing the provision of governance functions, or critiquing the state itself. Accordingly, the first probe, shown in



models one and two, uses a conservative standard, treating all missing data as reflecting the most negative positions.<sup>524</sup> The second probe, shown in models three and four, treats “don’t know” responses as reflecting a true agnostic midpoint, while non-response is again treated as making a negative position. Table 4.4 presents the results.

Table 4.4: Impact of statebuilding dimensions on institutional legitimacy, alternate coding

	(1)	(2)	(3)	(4)
Voted	0.909 (0.161)	0.729 (0.145)	0.939 (0.151)	0.828 (0.156)
Economic opportunity	1.048 (0.0431)	0.981 (0.0457)	0.937 (0.0399)	0.922 (0.0440)
Rule of law	1.005 (0.0306)	1.021 (0.0354)	0.925** (0.0260)	0.964 (0.0314)
Justice	1.350*** (0.108)	1.175 (0.108)	0.941 (0.0782)	0.960 (0.0888)
Security	1.339*** (0.101)	1.411*** (0.127)	1.108 (0.0838)	0.941 (0.0798)
Health	1.313*** (0.102)	1.464*** (0.135)	1.479*** (0.125)	1.530*** (0.151)
MoU implementation		1.466*** (0.110)		1.321*** (0.0968)
Ex-combatant		1.054 (0.407)		0.655 (0.224)
Victim		1.134 (0.139)		1.166 (0.137)
Political prisoner		0.716 (0.188)		0.888 (0.217)
Social trust		0.950 (0.137)		0.906 (0.123)
Married		1.107 (0.166)		1.126 (0.162)
Education		0.931 (0.0487)		1.006 (0.0490)
Age		1.001 (0.00501)		1.002 (0.00478)
Male		1.510*** (0.177)		1.053 (0.116)
Income		1.312*** (0.0941)		1.299*** (0.0870)
Mental health		1.090 (0.0681)		1.193** (0.0724)
N	1525	1264	1539	1274

Coefficients presented as odds ratios; Robust standard errors in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

<sup>524</sup> “Don’t know” and non-responses for *Legitimacy* are recoded to the lowest value, one (no legitimacy); likewise, values for *Justice*, *Security*, and *Health*, are recoded to one (worsening), and the value for *Economic Opportunity* is recoded to one (reflecting strong feelings that one’s wartime role determine’s post-conflict economic opportunity).

The results for liberal statebuilding stand; there is no evidence that political engagement via democratic processes, economic opportunity, or rule of law are associated with improvements of state legitimacy. The results for social contract statebuilding also stand. *Security*, and *Health* are stable both in terms of coefficient estimates and statistical significance. The revised models show greater support for the importance of *Justice* in structuring legitimacy, although the coefficient only reaches statistical significance in the reduced model.

The core findings of this analysis are summarized in table 4.5. There is no evidence linking political participation with improvements in legitimacy. Nor is there is evidence that perceived improvements in economic liberalization will, *ceteris paribus*, yield improvements in institutional legitimacy. The evidence for rule of law is more complex; the coefficient is positive—though small in substantive terms—in all specifications, but only reaches significance in reduced models without terms capturing social contract dimensions of statebuilding.

Table 4.5: Summary of findings

Hypotheses	Finding	Strength of evidence
Hypothesis 1: Political engagement via electoral democracy will yield stronger state legitimacy	Reject	Strong
Hypothesis 2: Perceptions that economic opportunity is open and fair will lead to increased state legitimacy	Reject	Strong
Hypothesis 3: Improvements in the rule of law will lead to increased state legitimacy	Reject	Moderate
Hypothesis 4: Improvements in security conditions will strengthen state legitimacy	Support	Moderate
Hypothesis 5: Improvements in the capacity of the justice system will strengthen state legitimacy	Reject	Weak
Hypothesis 6: Better health system performance will strengthen state legitimacy	Support	Strong

The evidence in favor of several dimensions of social contract statebuilding is, by contrast, consistently strong. Although there is little indication that improvements in the justice system yield near-term boost to legitimacy, improvements in physical security have a large positive impact on the legitimacy of the central government. These findings resonate with a broad range of analyses which emphasize the centrality of day to day security in underpinning state legitimacy.<sup>525</sup> Perceived improvements in health system performance have the strongest positive impact on institutional legitimacy. This finding accords with cross-national evidence from low and middle-income countries.<sup>526</sup> It also resonates with

<sup>525</sup> See notably Rotberg 2003, *ibid.*, pp. 31-33, World Bank WDR 2011, *ibid*

<sup>526</sup> Rockers et al., *ibid.*

more recent guidance from international organizations regarding the importance of social services over the medium-term, once acute humanitarian concerns have been resolved.<sup>527</sup>

Taken as a whole, the findings strongly suggest a critical role for social contract dimensions of statebuilding. Even if political liberalization and elections are necessary, they are by no means sufficient.

## 6. Conclusions

Being governed has been described as “an unpleasant necessity.”<sup>528</sup> In a fragile state, governance may be vastly preferable to the absence of order, but the *manner* in which order is reconstituted has a great deal of influence on its staying power.

Fragile states face greatly elevated risk of falling back into war.<sup>529</sup> Yet the stress factors that amplify the possibility of relapse are mediated by individual incentives to take part in violence. Walter puts the argument clearly: “civilians are not going to transform themselves from shopkeepers back into soldiers unless the conditions that exist *at any given point in time* encourage this transformation.”<sup>530</sup> Policymakers have increasingly come to emphasize restoring legitimacy as a mechanism for reshaping these individual incentives, and so transiting safely through the period of greatest vulnerability.

The core challenge is that process and experience of state failure ruptures the bonds of trust between citizen and state—if they existed in the first place.<sup>531</sup> Policymakers have attempted to restore legitimacy primarily through reshaping the *processes* of governance, via liberal statebuilding. Although Western governments reflexively link legitimacy to institutional design—more specifically to democratic processes—this is an ultimately normative proposition, and its track record is at best mixed.<sup>532</sup> Until recently, the role of state performance in shaping legitimacy has been relatively muted.

This chapter presented a first analysis of the correlates of institutional legitimacy in fragile states. The findings of this analysis strongly suggest that citizens in fragile states are highly attentive to whether state institutions deliver on their basic functions and commitments. The findings further suggest a hierarchy of needs. Citizens are most attuned to factors that condition the near-term safety of themselves and their families: improvements in physical security and health care are most strongly associated with perceptions that the state has a mandate to rule. As Weber and Jentleson argue, in poor and fragile states there is not

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<sup>527</sup> World Development Report, 2011, p. 200

<sup>528</sup> Adam Przeworski, Susan Stokes, and Bernard Manin, “Introduction”, and John Dunn “Situating Political Accountability” in Przeworski, Stokes, and Manin eds., *Democracy, Accountability, and Representation* Cambridge University Press 1999

<sup>529</sup> Collier, Elliott, Hegre, Hoeffler, Reynal-Querol, and Sambanis 2003, *ibid.*

<sup>530</sup> Walter 2004, p. 374

<sup>531</sup> Rotberg I. Rotberg, *When States Fail: Causes and Consequences*, Princeton University Press, 2003 p. 33

<sup>532</sup> Roland Paris, “Broadening the Study of Peace Operations” *International Studies Review*, Vol. 2, No. 3 2000; A.B. Fetherston, “Peacekeeping, Conflict Resolution and Peacebuilding: A Reconsideration of Theoretical Frameworks” *International Peacekeeping* Vol. 7, No. 21 2000; Newman, Paris, and Richmond, *ibid.*, pp. 11-12

necessarily a constituency for process, and a very large—and potentially pivotal—constituency for *outcomes*.<sup>533</sup> This is not to suggest that elections and political reconfiguration are not important. Such dramatic and public alternations to governance may be of great symbolic and emotional importance. They may indeed be necessary importance. However, process alone is not sufficient to the task of building sustainable order.

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<sup>533</sup> Weber and Jentleson, *ibid.*

## 5: Conclusions: fragility and leverage

*No State, no matter how powerful,  
can by its own efforts alone make itself invulnerable to today's threats.  
Every State requires the cooperation of other States to make itself secure.*<sup>534</sup>  
United Nations High-Level Panel on Threats, Challenges, and Change

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<sup>534</sup> The Secretary-General's High-Level Panel on Threats, Challenges and Change, *A More Secure World: Our Shared Responsibility*, United Nations, 2004, p. 16

## 1. introduction: gaps in the global order

For nearly two decades, international security and development policy has been oriented towards the risks posed by the world's weakest states. That the threat of failed states emerged and took priority during the early post-Cold War period is no accident. As superpower patronage wound down, and globalization accelerated and deepened, the world's strongest states came into closer and closer connection with an increasing number of corroded, weakened polities. At the same time, policymakers faced a strategic environment with no clear, focal threat. Instead, the world seemed to face an increasingly long list of transnational threats of uncertain probability and potentially devastating impact.<sup>535</sup>

Failed states have given policymakers a clear focal issue around which to organize a now dizzying array of problems, from pandemics, to crime, to terrorism. And, accordingly, policymakers have tended to approach the confluence of state failure and transnational threats with a very broad-brush approach, drawing definitive links to a wide range of global hazards. The U.S. State Department's first quadrennial review of diplomacy and development linked failed states to pandemics, violent extremism and terrorism, crime, piracy, atrocities.<sup>536</sup> The U.S. Agency for International Development writes that "when development and governance fail in a country, the consequences engulf entire regions and leap around the world. Terrorism, political violence, civil wars, organized crime, drug trafficking, human trafficking, infectious diseases, environmental crises, refugee flows, and mass migration cascade across the borders of weak states more destructively than ever before."<sup>537</sup> The U.K. Department for International Development notes, somewhat more soberly, that instability can spill over borders and across regions, bringing a range of threats in tow.<sup>538</sup>

The force with which these claims have been made has seized attention. But on what basis? The connections between disorder and transnational threats have, in many cases, been drawn on the basis of evidence that is at best anecdotal. Perhaps this is because sovereign states are already primed to find fragile and failed states threatening. The international system, and what institutionalized order exists, emerges from a collection of sovereign authorities.<sup>539</sup> The United Nations and many Western governments increasingly view sovereignty and responsibility—including responsibility to avoid exporting harms—as

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<sup>535</sup> Former national security advisor Brent Scowcroft comments that over this span of time, American foreign policy has been attempting to find safety in "uncharted waters"; the problem, in short, is one of sense-making amidst deep strategic uncertainty and emerging complexity. See Brent Scowcroft "Foreword" in Bruce Jones, Carlos Pascual, and Stephen John Stedman *Power and Responsibility: Building International Order in an Era of Transnational Threats*, Brookings Institution Press, 2009, p. xi

<sup>536</sup> United States Department of State, *Leading Through Civilian Power: The First Quadrennial Diplomacy and Development Review*, 2010, p. 122

<sup>537</sup> U.S. Agency for International Development "Foreign Aid in the National Interest Promoting Freedom, Security, and Opportunity" 2002, p. 1

<sup>538</sup> Hilary Benn "Foreword" in U.K. Department for International Development "Why we need to work more effectively in fragile states" 2005, p. 3

<sup>539</sup> Edward Newman "Failed States and International Order: Constructing a Post-Westphalian World" *Contemporary Security Policy*, Vol. 30 No. 3, 2009

inextricably linked.<sup>540</sup> Fragile and failed states are gaps in the global order; territory over which no sovereign holds authority, and no government can be held accountable. Such gaps seem to threaten the overall integrity of the system.<sup>541</sup>

The link between fragile states and global threats has, since the 1990s, essentially been taken as an axiom; as a point of departure from which to craft foreign policy and foreign aid. The main contribution of this dissertation has been to empirically test this axiom; to examine the implications of state failure, focusing in particular on several transnational threats of global consequence. The core proposition I advance in this work is that the link between fragile states and global threats is far more limited than the conventional wisdom would have it. The impact of state failure on transnational threats varies, with quite different dimensions and scales of state capacity implicated across distinct risks. However, contrary to the conventional wisdom, I find compelling evidence that fragile states are, if anything, systematically less likely to propagate transnational threats than middle-rung states. The primary sources of the threats explored in this project are, ironically, both more capable of managing transnational dangers, and better connected to the rest of the globe—and thus more likely to propagate threats than less connected polities..

This concluding chapter focuses first on the implications of these findings, placing the results for two major transnational threats—terrorism and pandemic disease outbreaks—in broader context. I argue that it would, in a sense, be much easier for international actors if the world's problems *could* be attributed to its broken corners. Fragile states are challenging environments, but such contexts also offer the greatest scope for policy interventions. Transnational threats that flow instead from emerging and middle-tier powers present a fundamentally different challenge.

Confronting global risks requires global cooperation. Attacking the roots of global threats that emanate from strong, middle-income states will require greater flexibility and greater compromise than the United States and its allies are accustomed to in fragile states. Addressing these trans-boundary risks will force powerful states to take firmer and more consistent stands on their core principles and beliefs. Confronting the roots of terrorism will require confronting authoritarian allies. Managing the risk of pandemic disease outbreaks will require greater attention to stark inequities in the global markets for vaccines and medicines, and the international regimes that underpin these systems.

The disconnect between fragile states and global threats does not lessen the humanitarian imperative to rebuild shattered institutions. Nor does it erase the moral consequences of failing to do so. Accordingly, the second proposition that I advance in this project relates to the challenge of rebuilding order in broken states.

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<sup>540</sup> State responsibility is framed both in terms of domestic obligations (ie: protecting its own population), as well as international obligations (avoiding inflicting harm on neighboring countries, and meeting obligations to the international community as a whole.) See High-Level Panel on Threats, Challenges and Change, *ibid.*, p. 17

<sup>541</sup> Robert Rotberg, *ibid.* 2003; Lockhart and Ghani *ibid.*

The dominant approach to reconstructing legitimate authority in failed states—liberal peacebuilding—has focused primarily on replicating governance systems in accordance with Western norms. By and large, such projects have found limited success. I examine the potential scope for an alternative model of statebuilding, which emphasizes the provision of basic public services, and find compelling evidence that this factor matters tremendously in rebuilding institutional legitimacy. As such, I argue that priorities in statebuilding must be rebalanced if we hope for new institutions to endure, and for fragile states to become resilient.

## **2. With friends like these: middle-tier powers and transnational threats**

Although many policymakers and analysts have asserted a generic linkage between fragile states and a broad palette of transnational threats, the evidence suggests otherwise. Transnational threats cannot be analyzed collectively. Each is driven by distinct sources and has distinct relationships to state capacity. Yet, a common finding in this project is that key transnational threats are not rooted in weak states, but instead tend to emerge from factors in higher capacity, middle-income countries.

The location of these risks has implications for strategy and policy. Interaction and cooperation dynamics with higher capacity states are fundamentally different than engagement with fragile states. Higher-capacity states not only bring more geopolitical leverage to bilateral relationships, they have fundamentally different levels of tolerance for the various instruments of intervention—from drone strikes to data-gathering—than fragile countries.

Middle-tier and emerging powers are, on the whole, skeptical of the Western idea that sovereignty is in any way contingent on their policy or politics.<sup>542</sup> The result is that addressing many transnational threats will require deeper engagement with states—including allies—that are suspicious of encroachment, and both willing and able to push back. Below, I elaborate on the dissertation's findings and implications, exploring the specific cases of transnational terrorism and pandemic disease outbreaks.

### Transnational terrorism

The threat of transnational terrorism was the most important factor in propelling fragile states to the center of the international security agenda. And indeed, since the September 11th attacks, policymakers and scholars have operated from the assumption that transnational terrorist organizations prefer to operate within fragile and failed states because of the advantages afforded by these regions: a ready supply of recruits, and sanctuary within which terrorist networks can operate with relative impunity. In this regard, the most recent U.S. Defense Department Quadrennial Defense Review notes that

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<sup>542</sup> Indeed, whether or not emerging powers and middle-tier states accept the current shape of the liberal international order, they take the a far harder line on the integrity of sovereignty than Western powers. See Stewart Patrick "Irresponsible Stakeholders? The Difficulty of Integrating Rising Powers" *Foreign Affairs*, Nov. / Dec. 2010; G. John Ikenberry "The Future of the Liberal World Order", *Foreign Affairs*, May/June 2011



disorder creates "...a fertile environment for violent extremism and sectarian conflict, especially in fragile states, stretching from the Sahel to South Asia..."<sup>543</sup>

In chapter two, I focus on patterns of recruitment to transnational terrorist organizations, and find strong empirical evidence contrary to the conventional wisdom. Fragile and failed states are *less* likely to generate terrorist recruits than moderate-capacity states. Most strikingly, states with failed authority—in short, states that are unable to project power over their territory, and that might therefore offer the most operating space for clandestine organizations—are less likely to produce recruits to terrorist organizations than states with effective territorial control. However, I find strong evidence that a specific dimension of state fragility—institutional illegitimacy, driven by lack of human rights protections and avenues for democratic participation—matters a great deal. States that have robust authority but lack legitimacy are far more likely to produce and export terrorist recruits than fragile states, or even weak but legitimate polities.

The important of institutional legitimacy resonates with we might consider the original conventional wisdom on the sources of contemporary international terrorism. Karin von Hippel has argued this perspective, suggesting that "the real breeding grounds... may be the strong authoritarian Arab and Muslim states, such as Egypt, Algeria, and Saudi Arabia...(terrorists from these states) oppose the authoritarian rule in their own countries, and view their leaders as corrupted by western influences."<sup>544</sup> A key implication of my analysis is that a current linchpin of counter-terror strategy—direct military engagement in crumbling states—may be over-emphasized. Making headway could instead require a substantial rebalancing of efforts, as well as hard conversations with allies that are the actual seed-beds for terrorist recruitment.

*Leverage may vary*

A key aspect of the United States' strategy against terrorist networks has emphasized direct engagement in ungoverned areas thought to house operational hubs. Drone attacks on suspected terrorists—first launched in Afghanistan under George W. Bush, and since expanded to Yemen and Pakistan—are perhaps the most dramatic expression of this approach.<sup>545</sup> Although figures are disputed, all evidence points to a high and rising tempo of strikes in fragile states: nearly 400 attacks have been launched in Pakistan,<sup>546</sup> and over 100 strikes in Yemen.<sup>547</sup> In Somalia, drones have had a less conspicuous presence, but U.S. special forces have had freedom to launch direct land assaults on suspected terrorist

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<sup>543</sup> U.S. Department of Defense *Quadrennial Defense Review*, 2014, p. iii

<sup>544</sup> Karin von Hippel "The Roots of Terrorism: Probing the Myths" *The Political Quarterly*, Vol. 73, Issue Supplement No. 1, 2002, p.

<sup>545</sup> Peter Bergen and Katherine Tiedemann "Washington's Phantom War: the Effects of the U.S. Drone Program in Pakistan" *Foreign Affairs*, July/August 2014, pp. 12-13

<sup>546</sup> The bulk of attacks have occurred under the Obama administration See the New America Foundation "Drone Wars Pakistan: Analysis" retrieved at <http://natsec.newamerica.net/drones/pakistan/analysis>. Last accessed 29 March, 2014.

<sup>547</sup> See the New America Foundation "Drone Wars Yemen: Analysis" retrieved at: <http://natsec.newamerica.net/drones/yemen/analysis>. Last accessed 29 March, 2014.

forces.<sup>548</sup> Overall, these patterns accord with Ken Menkhaus' assessment that a vacuum of state authority does not provide terrorists and insurgents with sanctuary to recruit and train, but instead exposes them to attacks by international forces who need not worry about observing the niceties of sovereignty.<sup>549</sup>

Drones and direct attacks are controversial, both domestically in the United States, and in countries that are in the crosshairs.<sup>550</sup> Public opinion polls in Pakistan indicate deep unhappiness over the drone campaign. A 2010 poll in Pakistan's Federally Administered Tribal Areas—a weakly governed region that the Pakistani Taliban and Al Qaeda use as an operating base—found that over 75 percent of those surveyed oppose the U.S. drone campaign;<sup>551</sup> a 2013 national poll found only five percent support for drone attacks, and opposition reaching nearly 70 percent.<sup>552</sup> The government of Pakistan, for its part, has repeatedly expressed its opposition to drone attacks. In July 2013, the Ministry of Foreign Affairs issued a strongly-worded condemnation, arguing that the drones were in “violation of Pakistan's sovereignty and territorial integrity”, and further that “Pakistan has repeatedly emphasized the importance of bringing an immediate end to drone strikes.”<sup>553</sup>

Despite such opposition, the drone campaign has continued. Public protestations aside, a fragile state like Pakistan has very little leverage with which to restrain U.S. military action.<sup>554</sup> Indeed, in addition to having limited military capacity to challenge or halt such incursions, Pakistan lacks the bilateral negotiating leverage necessary to compel meaningful policy change. Over the past decade U.S. foreign aid to Pakistan has averaged

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<sup>548</sup> Abdalle Ahmed, Spencer Ackerman, David Smith “How the US raid on al-Shabaab in Somalia went wrong” *The Guardian*, October 9 2013. Retrieved at: <http://www.theguardian.com/world/2013/oct/09/us-raid-al-shabaab-somalia-navy-seals>. See also: David D. Kirkpatrick, Nicholas Kulish, and Eric Schmitt, “U.S. Raids in Libya and Somalia Strike Terror Targets” *The New York Times*, October 5, 2013. Retrieved at: <http://www.nytimes.com/2013/10/06/world/africa/Al-Qaeda-Suspect-Wanted-in-US-Said-to-Be-Taken-in-Libya.html>

<sup>549</sup> Ken Menkhaus “Quasi-States, Nation-Building, and Terrorist Safe Havens” *The Journal of Conflict Studies*, Fall 2003, p. 12

<sup>550</sup> In 2009, the New York Times pointed out the radical shift implied by a civilian agency (the CIA) “selecting people for killing in a country where the United States is not officially at war.” Scott Shane “C.I.A. to Expand Use of Drones in Pakistan”, *the New York Times*, December 3, 2009. Retrieved at: <http://www.nytimes.com/2009/12/04/world/asia/04drones.html>

<sup>551</sup> See New America Foundation and Terror Free Tomorrow “Public Opinion in Pakistan's Tribal Regions” September 2010, pp. 4-5. Retrieved at: <http://www.terrorfreetomorrow.org/upimagestft/FATApoll1.pdf>

<sup>552</sup> See Pew Research Center “On Eve of Elections, a Dismal Public Mood in Pakistan” May 2013, pp. 13-14. Retrieved at: <http://www.pewglobal.org/files/2013/05/Pew-Global-Attitudes-Pakistan-Report-FINAL-May-7-20131.pdf>

<sup>553</sup> Ministry of Foreign Affairs, Government of Pakistan “Pakistan Protests against Drone Strike in Miranshah.” Retrieved at: <http://www.mofa.gov.pk/pr-details.php?prID=1296>. See also “Drone strikes cast ‘negative impact’ on relationship with US: Pakistan”, *The Express Tribune*, July 29, 2013, retrieved at: <http://tribune.com.pk/story/583512/drone-strikes-cast-negative-impact-on-relationship-with-us-pakistan/>. Prior to this communique, the government expelled U.S. troops and drones from the Shamsi airbase in Baluchistan. See Farhan Bokhari, James Lamont, and Daniel Dombe “Pakistan shuts US out of drone base” *Financial Times*, June 29, 2011. Retrieved at: <http://www.ft.com/cms/s/0/dccb8472-a272-11e0-9760-00144feabdc0.html>

<sup>554</sup> It is possible that the Pakistani government publicly opposes drone strikes because of their unpopularity, while tacitly approving of direct attacks on insurgents that also threaten its control. However, an investigation by the UN special rapporteur on counter-terrorism found no evidence of tacit consent on the part of the Pakistan government. See Own Botcott “US drone strikes in Pakistan ‘carried out without government's consent’” *The Guardian*, March 15, 2013, retrieved at: <http://www.theguardian.com/world/2013/mar/15/us-drone-strikes-pakistan>

over \$2 billion,<sup>555</sup> and U.S. policymakers have shown a willingness to withhold aid to express displeasure or to provide leverage to move government policy.<sup>556</sup> Yet, if the primary sources of terrorist recruitment are wealthy authoritarian states, direct military engagement in fragile states may only treat the most observable symptoms of the threat. And in the true exporters of transnational terrorism, leverage is far more limited.

Saudi Arabia—a major hub for both recruits to transnational terrorist organizations, as well as financing for terrorist networks—provides a case in point. The United States has a complex relationship with Saudi Arabia; it has able to broker and incentivize moderate cooperation, but has encountered strict limits to its policy influence. Private Saudi Arabian donors and charities have provided significant funds to Al Qaeda and other terrorist organizations, including the Haqqani Network in Afghanistan. While the U.S. has placed substantial pressure on the Saudi government to introduce strict financial controls, success has been partial at best: regulation of charitable foundations has, historically, been quite lax, and these donors comprise powerful local constituencies with significant influence to curtail government efforts to monitor and constrain financial flows.<sup>557</sup> Similarly, the educational and religious establishment in Saudi Arabia has embraced and spread what Hegghammer describes as “pan-Islamic nationalism” which links legitimacy with a particular interpretation of political Islam, driving support for various Islamic militant movements.<sup>558</sup> The Saudi government has come under considerable pressure—particularly by the United States—to reform and “de-radicalize” its education system. This effort has encountered similar constraints, as Saudis argue that education “is an issue of national sovereignty” on which interference is not welcome.<sup>559</sup>

### *The roots of the problem*

Although many terrorists have found their way to the battlefields of anarchic, failed states, these theaters are only vectors—not sources—of new recruits. Engagement with the states that *do* produce the lion’s share of transnational terrorists takes place on different terms

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<sup>555</sup> This figure is inclusive of both economic and military assistance. See: Center for Global Development “Aid to Pakistan by the Numbers”, retrieved at: <http://www.cgdev.org/page/aid-pakistan-numbers>. See also: Susan B. Epstein and K. Alan Kronstadt “Pakistan: U.S. Foreign Assistance” Congressional Research Service Report R41856, 2013. Retrieved at: <http://www.fas.org/spp/crs/row/R41856.pdf>

<sup>556</sup> Thom Shanker “Aid to Pakistan to Resume as Tension With U.S. Eases” *The New York Times*, October 19, 2013. Retrieved at: <http://www.nytimes.com/2013/10/20/world/asia/aid-to-pakistan-to-resume-as-tension-with-us-eases.html>

<sup>557</sup> Saudi Arabia has introduced a ban on movement of cash transfers via couriers, and government approval is needed for international donations. But unofficial movements of funds via couriers and networks remain prevalent. See: Maurice R. Greenberg, William F. Wechsler and Lee S. Wolosky “Terrorist Financing: Report of an Independent Task Force Sponsored by the Council on Foreign Relations” the Council on Foreign Relations, 2002, p. 8; Mark Basile “Going to the Source: Why Al Qaeda’s Financial Network Is Likely to Withstand the Current War on Terrorist Financing” *Studies in Conflict & Terrorism*, Vol. 27, No. 3, 2004; Jonathan Schanzer “Saudi Arabia’s Terror Finance Problem” *The Weekly Standard* blog, September 7, 2011, retrieved at: [http://www.weeklystandard.com/blogs/saudi-arabia-s-terror-finance-problem\\_592744.html](http://www.weeklystandard.com/blogs/saudi-arabia-s-terror-finance-problem_592744.html); United States Government Accountability Office “Combating Terrorism: U.S. Agencies Report Progress Countering Terrorism and Its Financing in Saudi Arabia, but Continued Focus on Counter Terrorism Financing Efforts Needed” Report GAO-09-883, September 2009, p. 16. Retrieved at: <http://www.gao.gov/new.items/d09883.pdf>

<sup>558</sup> Thomas Hegghammer “Terrorist Recruitment and Radicalization in Saudi Arabia” *Middle East Policy*, Vol. XIII, No. 4, 2006, p. 54.

<sup>559</sup> Michaela Prokop “Saudi Arabia: The Politics of Education” *International Affairs*, Vol. 79, No. 1, 2003, p. 89

altogether. An effective containment strategy would require far more pressure on authoritarian states to shut down channels for terrorist financing and recruits. Yet even this approach is incomplete without attention to the governance factors driving terrorist recruitment. Support for strategically significant authoritarian states, particularly in the Middle East, has long been a bulwark of U.S. foreign policy. In the Middle East, which also produces by far the greatest share of transnational terrorist recruits, analysts have argued that authoritarian states are stable bets, while the potential implications of democratization—and the political goals of those it would bring to power—are unclear.<sup>560</sup>

The tension between *realpolitik* and support from democratic reform has led to disjointed policy, most notably in the Arab Spring, where the United States simultaneously embraced nascent democratic movements in Libya and Tunisia, while stalling and hedging on Egypt and Yemen, and backed down as protesters in Bahrain were crushed.<sup>561</sup> Yet countering terrorism in the long-term may require continuing hard conversations with authoritarian allies while providing sustained support for democratic regimes and movements across the rest of the region, even as the near-term political consequences of democratization remain unclear and suspicions run high.

Confronting terrorism in fragile states will require far more careful triage. Continuing military pressure against militant groups may be justified. But inasmuch as such strikes treat only symptoms, the advantages must be weighed against the costs in innocent civilian lives, and the resultant blows to U.S. legitimacy.

### Pandemic disease

Pandemic disease outbreaks pose a potentially catastrophic risk to humanity. The emergence and diffusion of a deadly pathogen could directly cause tens to hundreds of millions of deaths. But the effects of a pandemic outbreak are not limited to the direct impacts of human sickness and death: a rapid-onset outbreak could disrupt global economic activity, and bring global travel and trade to a grinding halt. The sudden disruption of globalized economic systems would have dramatic and painful second-order effects on human welfare.<sup>562</sup>

Significant global attention has focused on the pandemic risk posed by fragile states. Weak states are thought to be most likely to foster emerging viruses. The toxic mixture of public health system collapse, violent conflict, population displacement, and poverty is thought to heighten the odds that a new pathogen will emerge and proliferate within a weakened,

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<sup>560</sup> F. Gregory Gause III “Can Democracy Stop Terrorism?” *Foreign Affairs*, September/October 2005

<sup>561</sup> See for instance Colin H. Kahl and Marc Lynch “U.S. Strategy after the Arab Uprisings: Toward Progressive Engagement” *The Washington Quarterly*, Vol. 36, No. 2, 2013

<sup>562</sup> Stacey Knobler, Adel Mahmoud, Stanley Lemon, Leslie Pray, eds. “The Impact of Globalization on Infectious Disease Emergence and Control: Exploring the Consequences and Opportunities” Workshop Summary - Forum on Microbial Threats, U.S. Institute of Medicine, 2006, p. 1

susceptible population, and subsequently mutate, migrate, and spread.<sup>563</sup> For this reason, fragile states are considered particularly dangerous foci for pathogenic threats, and the United Nations warns that “the security of the most affluent State can be held hostage to the ability of the poorest State to contain an emerging disease.”<sup>564</sup>

The results of my analysis cast doubt on this narrative. The results suggest that, if anything, fragile states are systematically *less* likely to foster emerging pathogens than stronger states. Instead, factors linked to the human/animal interface—such as intensive agriculture, higher intensities of domesticated animal production, and the harvesting of wild animals as “bushmeat”—greatly increase the risk that a new viral agent will emerge into the human population.

The world’s most debilitated states are not hotspots for these risk factors. The production of domesticated animals for consumption is dominated by middle-income states including China, Brazil, Vietnam, the Philippines. Wealthy states, including the United States, France, and Spain, are also major producers. Middle-income countries are also major producers of wild animal meat; China, Nigeria, Cameroon and South Africa produce enormous tonnage; and again, wealthy states such as the United States and Canada comprise key foci of production. Intensive agriculture is difficult to maintain in conditions of upheaval and violence, and with shattered infrastructure. Weakly regulated middle-income states and wealthy countries, on the other hand, have far higher intensities of agrarian production.

Deadly zoonotic pathogens circulate within animal populations across the globe, and are potentially capable of emerging from any country, at any time. Yet, emerging viral agents have repeatedly sprung not from corroding states, but from functional countries that remain linked to global patterns of travel and trade. Compelling evidence has linked the emergence of HIV to patterns of animal hunting and production in Cameroon, a low-middle income and relatively stable country in tropical Africa.<sup>565</sup> Highly-pathogenic avian influenza outbreaks have occurred across the world: in the Middle East, in central Asia, and South and East Asia. But by far the most significant sites, both in terms of the sheer number of outbreaks and human toll in lives lost, are in middle-income states with high levels of live animal production: China, Vietnam, Thailand, Cambodia, and particularly Indonesia, which has hosted the majority of outbreaks, and over 50 strains of H5N1

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<sup>563</sup> Frederick M. Burkle Jr., “Pandemics: State Fragility’s Most Telling Gap?”, in Patrick M. Cronin, ed., *Global Strategic Assessment 2009: America’s Security Role in a Changing World*, Institute for National Strategic Studies, U.S. National Defense University, 2009, p. 106

<sup>564</sup> High-Level Panel on Threats, Challenges and Change *ibid.*, p. 14; see also Marla Haimes, et al, *Breaking the Failed State Cycle*, RAND Corporation, pp. 1, 6; U.K. Department for International Development (DFID), *Why We Need to Work More Effectively in Fragile States*, p. 5

<sup>565</sup> Jacques Pepin *The Origins of AIDS*, Cambridge University Press, 2011; Martine Peeters, Valerie Courgnaud, Bernadette Abela, Philippe Auzel, Xavier Pourrut, Frederic Bibollet-Ruche, Severin Loul, Florian Liegeois, Cristelle Butel, Denis Koulagna, Eitel Mpoudi-Ngole, George M. Shaw, Beatrice H. Hahn, and Eric Delaporte, “Risk to Human Health from a Plethora of Simian Immunodeficiency Viruses in Primate Bushmeat” *Emerging Infectious Diseases* Vol. 8, No. 5, May 2002

virus.<sup>566</sup> These examples illustrate a key implication of chapter three: middle-income countries pose a far greater risk to global health than fragile states.

### *Power and priorities in global health*

All countries have a shared interest in preventing a global pandemic. But not all countries face the same risk of disease emergence, or bear identical costs in disease surveillance or prevention. Nor do all countries face the same public health burden from existing diseases. These discrepancies account for a fundamental problem of global public health cooperation. Western powers assume a relatively similar set of public health interests,<sup>567</sup> or perhaps that the interests of weaker countries can be re-aligned with those of the West. Yet, the model of global public health pursued by wealthy states—what Lakoff terms “global health security”—is fundamentally distinct from the goals and concerns of developing countries. The key distinction is that global health security, and specifically efforts to ward off a pandemic, are “oriented toward outbreaks that have not yet occurred—and may never occur.” Meanwhile, developing countries understandably prioritize the diseases and public health pressures that they *already* face with limited resources.<sup>568</sup> Moreover, they seek to ensure that they will share equally in systems designed to defend against a pandemic outbreak.

Given these colliding perspectives, the locus of viral emergence has significant consequences for the success of pandemic defense efforts. The middle-income states that present the largest scope for pandemic risk are far more assertive of their political, economic and social needs than fragile states. And they are far more willing to challenge the existing global health regime than weaker countries. Indeed, even as the international community has cohered around global norms and laws for pandemic surveillance and response, middle-income states have launched more fundamental challenges to the global health security regime.

The political fallout from the SARS crises in 2003 led directly to the passage of a new set of international public health regulations which legally obligate countries to provide

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<sup>566</sup> Richard Holbrooke and Laurie Garrett “‘Sovereignty’ That Risks Global Health” *Washington Post*, August 10, 2008, retrieved at: <http://www.washingtonpost.com/wp-dyn/content/article/2008/08/08/AR2008080802919.html>. See also: World Health Organization “Areas with confirmed human cases for avian influenza A(H5N1) reported to WHO, 2003-2012” retrieved at: [http://www.who.int/influenza/human\\_animal\\_interface/EN\\_GIP\\_20120312uCumulativeNumberH5N1cases.pdf](http://www.who.int/influenza/human_animal_interface/EN_GIP_20120312uCumulativeNumberH5N1cases.pdf); Anna Thorsonn and Karl Ekdahl “Avian influenza – Is the world on the verge of a pandemic? . . . and can it be stopped?” *Journal of Contingencies and Crisis Management*, Vol. 13 No. 1, 2005; See also Stefan Elbe “Our epidemiological footprint: The circulation of avian flu, SARS, and HIV/AIDS in the world economy” *Review of International Political Economy*, Vol. 15, No. 1, 2007, p. 118;

<sup>567</sup> Patrick, *ibid.*

<sup>568</sup> Andrew Lakoff “Two Regimes of Global Health” *Humanity: An International Journal of Human Rights, Humanitarianism, and Development*, Vol. 1, No. 1, Fall 2010

information on outbreaks and public health crises of global consequence.<sup>569</sup> Yet even with this institutional and legal framework in place, politics and power continue to place strains on the system.<sup>570</sup> In 2006, Indonesia claimed “viral sovereignty” over samples of potentially deadly H5N1 influenza drawn from its territory, and refused to share samples with the World Health Organization. This decision was motivated by reports that an Australian pharmaceutical company had patented an influenza vaccine based on virus samples that Indonesia had provided to the WHO. To Indonesian government officials, the situation was simply and fundamentally inequitable. Indonesian viral samples were being shared with Western pharmaceutical companies without consent. These same firm would profit from the vaccines, which Indonesia and poor countries would not be able to afford in order to protect their own citizens.<sup>571</sup> Indonesia’s decision was derided by Western governments and many global health experts, but supported by other developing countries who were priced out of protecting their citizens with vaccines.<sup>572</sup>

Although the WHO attempted to use the International Health Regulations to compel Indonesia to share samples, Indonesia invoked the Convention on Biological Diversity, which provides for sovereignty over biological specimens.<sup>573</sup> Legal analyses suggested that Indonesia’s obligations to global public health trumped its narrow interpretation of national interest,<sup>574</sup> but international law provided no bright line standard, nor did Indonesia back down. A near-term fix was structured during a 2007 World Health Organization meeting in Jakarta, under which Indonesia resumed sharing virus samples, while WHO committed to support technology transfer between vaccine manufacturers in

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<sup>569</sup> SARS first emerged in Southern China, and the government’s response to the epidemic was to suppress and control reporting. Indeed, even after rumors and news reports began to circulate, the government’s response to World Health Organization requests for information was halting and highly controlled: even as the virus spread, the government claimed that the outbreak had been contained and was receding. When SARS reached Hong Kong—and the outbreak subsequently spread to Canada, and to Southeast Asia—WHO publicly accused the Chinese government of suppressing information. The furor over the suppression of information led directly to revisions to the International Health Regulations. See: David P. Fidler “SARS: Political Pathology of the First Post-Westphalian Pathogen” *Journal of Law, Medicine, & Ethics*, Vol. 31, 2003, p. 491, and William Burns “Openness is key in fight against disease outbreaks” *Bulletin of the World Health Organization*, Vol. 84, No. 10, 2006

<sup>570</sup> Concerns have thus far centered on countries’ ability to meet the basic infrastructural requirements of the health regulations; whether states have the right laws, institutions, laboratory and reporting mechanisms in place, rather than on the hazards posed by politics. Julie E. Fischer and Rebecca Katz “Moving Forward to 2014: Global IHR (2005) Implementation” *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, Vol. 11, No. 2, 2013

<sup>571</sup> Endang R Sedyaningsih, Siti Isfandari, Triono Soendoro, and Siti Fadilah Supari “Towards Mutual Trust, Transparency and Equity in Virus Sharing Mechanism: The Avian Influenza Case of Indonesia” *Annals of the Academy of Medicine, Singapore* Vol. 37, 2008, p. 486; see also David Fidler “Viral Sovereignty, Global Governance, and the IHR 2005: H5N1 Virus Sharing Controversy and Its Implications for Global Health Governance” in David A. Relman, Eileen R. Choffnes, and Alison Mack “Infectious Disease Movement in a Borderless World: Workshop Summary” *Forum on Microbial Threats*, U.S. Institute of Medicine, 2010, pp. 214-228 Retrieved at: <http://www.nap.edu/catalog/12758.html>

<sup>572</sup> Stefan Elbe “Haggling over viruses: the downside risks of securitizing infectious disease” *Health Policy and Planning*, Vol. 25, 2010, p. 477

<sup>573</sup> The WHO argued that Indonesia was in breach of the requirement to share information on a public health emergency of international concern, in essence equating viral samples with “information.”

<sup>574</sup> See for instance Kenan Mullis “Playing Chicken with Bird Flu: ‘Viral Sovereignty,’ the Right to Exploit Natural Genetic Resources, and the Potential Human Rights Ramifications” *American University International Law Review*, Vol. 24 No. 5, 2009

developed and poor countries.<sup>575</sup> A subsequent deal, framed at the urging of the private sector, limited patent rights for vaccines produced using viral material provided the WHO.<sup>576</sup> However as David Fidler noted, “the bargain... established the utility of countries’ withholding samples to force WHO and industrialized countries to address neglected aspects of global influenza governance.”<sup>577</sup>

### *Building equity and access into pandemic defense*

Efforts to defend against global pandemics inevitably confront the unknown and the incalculable. Detecting and responding to emerging viruses will require near-constant cooperation between countries at the edge of the human/animal interface, and wealthy countries that fear exposure to viruses emerging from such spaces. Limited deals to ensure vaccine sharing are a necessary first step. But they will still be insufficient in the face of a pandemic outbreak, which will again strain global cooperation as each country attempts to ensure its citizens have access to enough vaccines and anti-viral medicines.<sup>578</sup> Indeed, there have been continuing warning clouds: following the H1N1 influenza outbreak in 2009, vaccine supplies ran critically low. Even a year after the initial pandemic outbreak, many poor countries had still not received vaccine, even as wealthy countries had achieved coverage and even built up a substantial vaccine surplus.<sup>579</sup>

Overcoming the drift towards “viral sovereignty” will require deeper and enforceable commitments to the global distribution of vaccines, including transfer of vaccine stocks and the technology and intellectual property necessary to generate them. It will also require with more basic investments in public health infrastructure. Such investments will necessarily have to meet the needs of middle-income countries at the greatest risk for viral emergence. But fragile states should not be forgotten. Although they may be among the least likely to foster an emerging virus, fragile states are perhaps the most likely to suffer from it, owing to debilitated clinical and health infrastructure. Transferring intellectual property and production rights to vaccines will provide little direct benefit amidst a pandemic crisis; the world’s weakest states will continue to need direct humanitarian assistance and vaccine transfers when an outbreak occurs.

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<sup>575</sup> See World Health Organization “Indonesia to resume sharing H5N1 avian influenza virus samples following a WHO meeting in Jakarta.” March 27, 2007. Retrieved at: <http://www.who.int/mediacentre/news/releases/2007/pr09/en/>

<sup>576</sup> The 2011 bargain also provided pathways for pharmaceutical companies to share technology, vaccine production, or intellectual property in exchange for viral samples provided outside of WHO mechanisms. See World Health Assembly “Pandemic influenza preparedness: sharing of influenza viruses and access to vaccines and other benefits. Report by the Open-Ended Working Group of Member States on Pandemic Influenza Preparedness: sharing of influenza viruses and access to vaccines and other benefits.” May 2011, particularly Annex 2 “SMTA 2 Standard Material Transfer Agreement outside WHO GISRS (SMTA 2)” pp. 26-27. Retrieved at: [http://apps.who.int/gb/ebwha/pdf\\_files/WHA64/A64\\_8-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_8-en.pdf)

<sup>577</sup> David P. Fidler, “Influenza Virus Samples, International Law, and Global Health Diplomacy” *Emerging Infectious Diseases*, Vol. 14, No. 1, 2008, p. 93

<sup>578</sup> Elbe, *ibid.* p. 480

<sup>579</sup> See Donald McNeil Jr. “Progress Is Slow on Moving Surplus Swine Flu Vaccine to Countries That Need It”, *the New York Times*, February 1, 2010. Retrieved at: <http://www.nytimes.com/2010/02/02/health/02flu.html>



### 3. Rebuilding legitimate order

Fragile states do not pose a threat to the globe by harboring and incubating transnational threats. Instead, as the first wave of commentators in the early 1990s noted, broken states are largely a humanitarian problem: islands of poverty, violence, and misery, rarely able to escape from long-run cycles of breakdown and collapse.<sup>580</sup> While there is little security imperative to engage in fragile states, there is a strong case for engagement on humanitarian grounds. Yet, to date there has been limited success in helping fragile states to escape their violent equilibrium.

For over two decades, the international community had worked from a single blueprint for institutional recovery. This blueprint—rebuilding fragile states in the image of strong, liberal democratic polities—is extraordinarily ambitious. It is nothing short of an attempt to short-cut very long cycles of institutional change and development,<sup>581</sup> by using crises as an opportunity to restructure the state, and re-arrange the basic social contract between state and citizen.

This strategy, shorthanded as liberal peacebuilding, has had limited success in interventions worldwide.<sup>582</sup> Moreover, its most dramatic and public expression—the United States’ recent attempts to rebuild Iraq and Afghanistan as liberal democracies—demonstrated the limitations of implanting democracy and the rule of law in a short timespan, and the potential for relapse and backlash.

Legitimacy often lies in tatters after years of ineffective or abusive governance. Yet it is necessary: legitimacy provides a buffer from states undergoing transitions, limiting the risk that citizens will again take up arms. Rebuilding the legitimacy of governing systems is thus a key challenge, in both the short and long-term. The core finding of chapter four, which used public opinion data to map the correlates of institutional legitimacy, is that building inclusive political processes alone is not enough. Social outcomes matter. Government must also deliver on the social contract, by providing security, justice, and other basic public goods. As such, I argue for the application of a different model of statebuilding, rooted in social contract theory.

This argument has direct implications for statebuilding policy. The most simple and direct implication is that international actors must focus greater attention on meeting social needs if they hope to build legitimate and lasting states. They must, as Weber and Jentleson suggest, recognize and engage the large public constituency for social *outcomes* in poor and fragile states, rather than assume that political choice will suffice.<sup>583</sup>

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<sup>580</sup> See Robert Kaplan, “The Coming Anarchy”, *the Atlantic Monthly*, Volume 273, No. 2, 1994

<sup>581</sup> On the length of development processes, see Lant Pritchett, Michael Woolcock, and Matt Andrews “Looking Like a State: Techniques of Persistent Failure in State Capability for Implementation” *The Journal of Development Studies*, Vol. 49, No. 1, 2013

<sup>582</sup> Roland Paris *At War's End: Building Peace After Civil Conflict*, Cambridge University Press 2004

<sup>583</sup> Steven Weber and Bruce W. Jentleson, *The End of Arrogance: America in the Global Competition of Ideas*, Harvard University Press, 2010, p. 67

Equally significantly, this rebalancing of efforts also implies a basic re-think regarding the pace and duration of international efforts. Statebuilding missions often focus enormous energies on managing the run-up to elections; after a democratically-installed government is in place, funds quickly dwindle, and international actors disengage. Building capacity for service delivery is a longer-term proposition, requiring much more sustained investments of time, money, and effort.

This message is now reaching key international actors, at least at the level of policy. The World Bank now notes that “international assistance needs to be sustained for a minimum of 15 years to support most long-term institutional transformations,”<sup>584</sup> while the U.S. State Department’s first Quadrennial Diplomacy and Development Review highlights the importance of providing basic public services.<sup>585</sup> However, practice still lags behind. Most international development agencies plan on shorter bursts of activity rather than well-funded long-term engagement, and attention to basic services is still lacking.<sup>586</sup> If statebuilding is to succeed, the pace of change will need to accelerate, and shifts in policy must translate into changes on the ground.

#### **4. Conclusions**

The hard reality of contemporary international security is that no state is buffered from events taking place far across the world.<sup>587</sup> Threats travel. Given the welter of security problems facing the world—terrorism, crime, pandemic disease—and the complex and diffuse webs of factors underlying each risk, policymakers have searched for common causes, and tried to identify points of leverage to reduce complexity and mitigate risk.<sup>588</sup>

The result has been renewed attention to problems in some of the most desperate places on the planet, and a flood of resources and interventions into fragile states. Yet, I argue in this dissertation that the blanket connection between fragile states and transnational threats has been drawn on the basis of limited evidence and anecdote, leading to faulty conclusions and mistaken diagnoses. Each transnational threat has distinct sources, that in turn require carefully tailored surveillance and solutions. A second hard truth implied by these findings is that confronting threats of global consequence will require powerful states like the U.S. to re-think their relationships with allies. Ensuring security will require new forms of cooperation, on different terms than those to which strong states have become accustomed.

The challenge of rebuilding fragile states is not likely to drop off the global agenda. A more sober assessment of the links between failed states and global threats may ultimately help improve statebuilding efforts, by ensuring that the many fragile states that have not been

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<sup>584</sup> World Bank, *2011 World Development Report: Conflict Security, and Development*, 2012 pp. 193-194

<sup>585</sup> Department of State, *ibid.* p. 23

<sup>586</sup> World Bank, *ibid.*

<sup>587</sup> Department of State, *ibid.* p. 122

<sup>588</sup> Paul Miller “How Dangerous is the World? Part IV” *Foreign Policy* online December 20, 2011. Retrieved at: [http://shadow.foreignpolicy.com/posts/2011/12/19/how\\_dangerous\\_is\\_the\\_world\\_part\\_iv](http://shadow.foreignpolicy.com/posts/2011/12/19/how_dangerous_is_the_world_part_iv)

tied to global hazards—Central African Republic, Papua New Guinea, Democratic Republic of the Congo—are not ignored in favor of broken states that have been implicated as threats.<sup>589</sup> Evenhandedly addressing the human dimension of state failure directly will place statebuilding and development on more stable moral footing, and direct attention to the enormity and long-term nature of the task.

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<sup>589</sup> Newman, *ibid.* p. 437

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